

2023 BUSINESS IMPACT REPORT DATA BOOK



JOHN DEERE

LEAP AMBITIONS

Connected Machines and Engaged Acres	Target Year	Target	2021 Baseline	2022 Progress	2023 Progress
Connect 1.5 million machines	2026	1.5M connected machines	440,000 connected machines	500K connected machines	650K connected machines
Reach 500 million engaged acres ¹	2026	500M engaged acres	315M engaged acres	329M engaged acres	388M engaged acres
Reach 500 million engaged acres ¹ with 50% highly engaged ²	2026	50% of engaged acres are highly engaged acres	66M highly engaged acres	68M highly engaged acres	92M highly engaged acres
Ensure 75% of engaged acres ¹ are sustainably engaged acres ³	2030	75% of engaged acres are sustainably engaged acres	127M sustainably engaged acres	151M sustainably engaged acres	160M sustainably engaged acres

C&F Sustainable Technology Adoption	Target Year	Target	2022 Progress	2023 Progress
Earthmoving: Increase grade management ⁴ adoption to 50%	2026	50%	32% adoption on eligible machines	45% adoption on eligible machines
Forestry: Boost Intelligent Boom Control adoption to 100%	2026	100%	78% adoption on eligible machines	86% adoption on eligible machines
Roadbuilding: Increase Precision Roadbuilding Solutions adoption to 85%	2026	85%	82.5% adoption on eligible machines	84.8% adoption on eligible machines

Ag Customer Outcomes	Target Year	Target	2021 Baseline	2022 Progress Compared to 2021 baseline	2023 Progress Compared to 2021 baseline
Improve nitrogen use efficiency (NUE) 20% ^{5,6}	2030	20%	19.4 kg/MT	5% improvement in NUE	–
Increase crop protection efficiency (CPE) 20% ^{5,7}	2030	20%	11.7 CPU/MT	7% increase in CPE	–
Reduce 15% of customer CO ₂ e emissions ^{5,8}	2030	15%	0.2 MT/MT	9% reduction in emissions	–

LEAP AMBITIONS

Recyclable Content and Sustainable Material	Target Year	Target	2022 Progress	2023 Progress
Achieve 95% recyclable product content ⁹	2030	95%	90% recyclable product content	90% recyclable product content
Ensure 65% of product content is sustainable material ⁹	2030	65%	40% sustainable product content	40% sustainable product content






Remanufacturing Revenue	Target Year	Target	2021 Baseline	2022 Progress Compared to 2021 baseline	2023 Progress Compared to 2021 baseline
Grow 50% in remanufacturing revenue	2030	50%	\$360,400,000 USD	2% growth in revenue	3% growth in revenue

Safety	Target Year	Target	2021 Baseline	2022 Progress Compared to 2021 baseline	2023 Progress Compared to 2021 baseline
Improve Total Recordable Incident Rate (TRIR) ¹⁰ 20%	2026	20%	1.98	10% increase in TRIR	5% increase in TRIR ¹¹

Environmental Footprint Reductions	Target Year	Target	2021 Baseline	2022 Progress Compared to 2021 baseline	2023 Progress Compared to 2021 baseline
Reduce 50% operational CO ₂ e emissions (Scope 1 & 2) ^{11,12,13}	2030	50%	811000 metric tons CO ₂ e	12% reduction in emissions	15% reduction in emissions
Reduce 30% in upstream and downstream CO ₂ e emissions (Scope 3 Category 1 and 11) ^{11,12,14,15,16}	2030	30%	101,262,000 metric tons CO ₂ e	3% reduction in emissions	4% reduction in emissions
Reduce 15% of Waste Intensity ¹¹	2030	15%	3.21 kilograms/production output hour	13% increase in waste intensity	11% increase in waste intensity
Reduce 10% freshwater consumption intensity at water-stressed manufacturing locations ¹¹	2030	10%	0.07 cubic meters/production output hour	1% increase in freshwater consumption intensity	11% increase in freshwater consumption intensity

SUSTAINABILITY METRICS




EMISSIONS AND ENERGY		2021	2022	2023
Energy ^{11,17}				
	Energy Consumption (GJ) (SASB Index code RTIG-130a.1.1)	12,890,000	13,770,000	13,300,000
	% Grid Electricity (SASB Index code RTIG-130a.1.2)	43%	42%	44%
	% Renewable Electricity	41%	59%	61%
	% Renewable Energy (SASB Index code RTIG-130a.1.3)	17%	25%	27%
Emissions ^{11,12}				
	Scope 1 and 2 Emissions (metric tons CO ₂ e) ¹³	811,000	716,700	690,000
	Scope 1 Emissions (metric tons CO ₂ e) ¹³	403,300	418,200	410,000
	Scope 2 (market-based) Emissions (metric tons CO ₂ e) ¹³	407,700	298,500	280,000
	Scope 3 (Category 1 and Category 11) (metric tons CO ₂ e) ^{14,15,16}	101,262,000	98,224,000	97,383,000
	Category 1 ^{14,15}	8,142,000	8,322,000	8,263,000
	Category 11 ^{14,16}	93,120,000	89,902,000	89,120,000
SUSTAINABLE PRODUCT DESIGN		2021	2022	2023
	Sales-Weighted Fuel Efficiency for Non-Road Equipment (SASB Index code RT-IG-410a.2) (gal/hr) ¹⁸	15.4	15.4	15.5
	Sales-Weighted Emissions of Nitrogen Oxides (NOx) (SASB Index code T-IG-410a.4.1) (grams/kWh) ¹⁸	0.08	0.12	0.13
	Sales-Weighted Emissions of Particulate Matter (PM) (SASB Index code T-IG-410a.4.2) (grams/kWh) ¹⁸	0.0006	0.0004	0.0005
	Revenue from Remanufactured Products and Remanufacturing Services (SASB Index code RT-IG-440b.1) (millions in USD)	\$360.4	\$367.6	\$371
WATER AND WASTE		2021	2022	2023
Water ¹¹				
	Freshwater Consumption Intensity at water-stressed manufacturing locations (cubic meters/production output hour)	0.070	0.071	0.078
	Water Consumption (cubic meters)	23,900,000	23,900,000	26,300,000
Waste ^{11,19}				
	Waste Intensity (kilograms/production output hour)	3.21	3.63	3.55
	Total Waste (kilograms)	109,500,000	133,900,000	130,100,000
	Hazardous Waste (kilograms)	11,700,000	14,900,000	14,400,000
	Non-Hazardous Waste (kilograms)	97,800,000	119,000,000	115,800,000

SUSTAINABILITY METRICS



WORKFORCE	2021	2022	2023
Number of Employees (SASB Index Code RT-IG-000.B)	75,600	82,200	83,000
% of Global Production Employees Covered by Collective Agreements	91.7%	84.4%	85%
% of Part-Time Student and Student Employees ²⁰	1.9%	2.1%	2.2%
% of Women in Revenue-Generating Positions ²⁰	17.3%	18.3%	18.7%
% of Women in STEM-Related Positions ²⁰	17.6%	15.2%	19.8%
Turnover Rate Overall ^{20,21,22}	–	13%	13.2%
Voluntary Turnover Rate ^{20,21}	7%	6.5%	5.3%
Voluntary Turnover Rate-Production ^{20,21}	8.6%	7.1%	6.8%
Voluntary Turnover Rate-Salaried ^{20,21}	5.4%	5.7%	3.7%
Training Hours per FTE ^{20,23}	19.5	21.1	17.3

To see more metrics on our Workforce Diversity, [click here](#).

SAFETY ¹⁰	2021	2022	2023 ¹¹
 Total Recordable Incident Rate (TRIR) (SASB Index Code RT-IG-320a.1.1)	1.98	2.18	2.08
Lost Time Frequency Rate	0.78	0.67	0.65
Near Miss Frequency Rate (SASB Index Code RT-IG-320a.1.3)	11.96	12.94	13.58
Fatality Rate (SASB Index Code RT-IG-320a.1.2)	0.001	0.001	0.001

COMPLIANCE	2021	2022	2023
Total Compliance Training Course Completed	279,147	302,983	279,406
Investigated and Closed Hotline Reports Resulting in Termination of Employment	–	–	110
Categories of Hotline Reports Investigated and Closed			
How We Treat Each Other in the Workplace ²⁶	–	–	76%
Accounting, Legal, & Regulatory ²⁷	–	–	7%
Business Integrity ²⁸	–	–	17%

– Not Reported

SUSTAINABILITY METRICS

ISO CERTIFIED SITES ²⁹	2021	2022	2023
# of ISO 14001:2015 Manufacturing Sites Certified	35	52	53
# of ISO 45001:2018 Manufacturing Sites Certified	2	3	3
# of ISO 9001:2015 Manufacturing Sites Certified	48	49	50

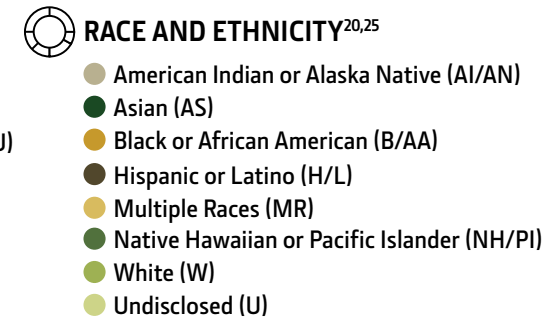
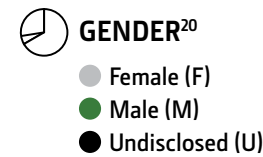
SUPPLY CHAIN	2021	2022	2023
# of Suppliers ³⁰	4457	4147	5746
# of Supplier Compliance Audits ³⁰	880	936	1468
Diverse Supplier Sourcing Spend ³¹			
Women-Owned Business Sourcing (millions USD)	–	\$688	\$747
Minority-Owner Business Sourcing (millions USD)	–	\$299	\$366

COMMUNITY ENGAGEMENT	2021	2022	2023
Charitable Contributions (% of net income)	1.5%	1.4%	1.4%
Charitable Contributions (millions USD)	\$42.5	\$55.5M	\$74.5M
Volunteer Hours	124,332	174,518	261,214

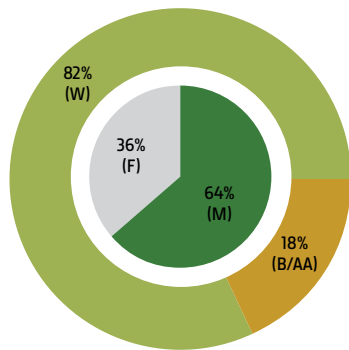
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DIVERSITY

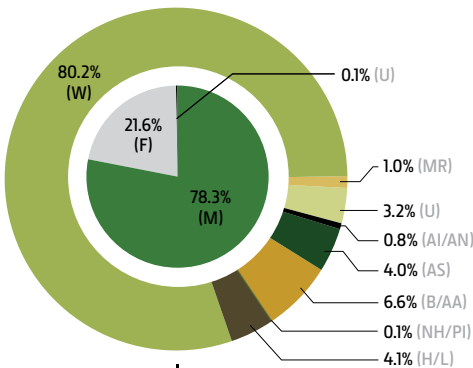
2023 DIVERSITY KEY



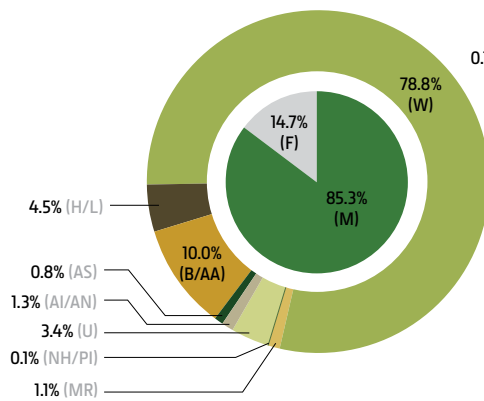
BOARD OF DIRECTORS²⁴



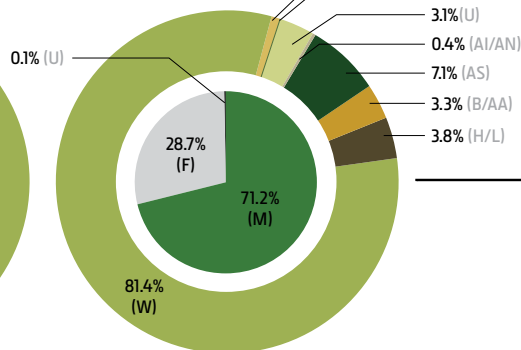
GENERAL WORKFORCE



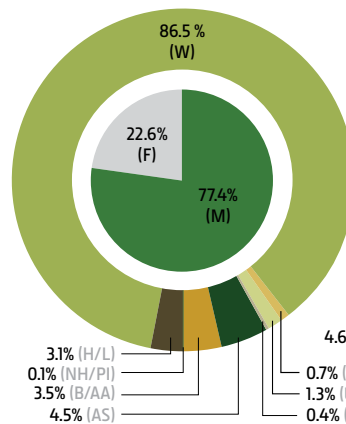
PRODUCTION



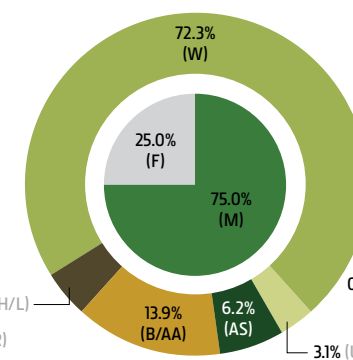
SALARIED



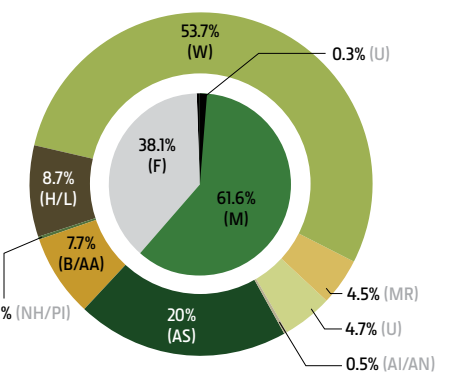
MANAGEMENT



SENIOR MANAGEMENT



INTERNS



AGE DIVERSITY

	<30	30-50	>50
2023 Overall Age Diversity ²⁰	23.9%	58.8%	17.3%

DIVERSITY

GENDER ²⁰	2021	2022	2023
Board of Directors²⁴			
Male	66.7%	64.0%	64.0%
Female	33.3%	36.0%	36.0%
Undisclosed	0.0%	0.0%	0.0%
General Workforce			
Male	80.2%	79.2%	78.3%
Female	19.8%	20.7%	21.6%
Undisclosed	0.0%	0.1%	0.1%
Salaried Workforce			
Male	72.2%	71.8%	71.2%
Female	27.8%	28.1%	28.7%
Undisclosed	0.0%	0.1%	0.1%
Management			
Male	78.8%	78.1%	77.4%
Female	21.2%	21.9%	22.6%
Undisclosed	0.0%	0.1%	0.0%
Senior Management			
Male	85.3%	76.1%	75.0%
Female	14.7%	23.9%	25.0%
Undisclosed	0.0%	0.1%	0.0%
Production Workforce			
Male	87.1%	85.6%	85.3%
Female	12.8%	14.3%	14.7%
Undisclosed	0.1%	0.1%	0.0%
Interns			
Male	–	71.9%	61.6%
Female	–	26.8%	38.1%
Undisclosed	–	1.3%	0.3%

– Not Reported

DIVERSITY

RACE AND ETHNICITY ^{20,25}	2021	2022	2023
Board of Directors²⁴			
American Indian or Alaskan	0.0%	0.0%	0.0%
Asian	8.3%	0.0%	0.0%
Black or African American	16.7%	18.0%	18.0%
Hawaiian or Pacific Islander	0.0%	0.0%	0.0%
Hispanic or Latino	0.0%	0.0%	0.0%
Multiple Races	0.0%	0.0%	0.0%
White	75.0%	82.0%	82.0%
Undisclosed	0.0%	0.0%	0.0%
General Workforce			
American Indian or Alaskan	0.7%	0.8%	0.8%
Asian	3.4%	3.6%	4.0%
Black or African American	6.0%	6.7%	6.6%
Hawaiian or Pacific Islander	0.1%	0.1%	0.1%
Hispanic or Latino	3.2%	4.2%	4.1%
Multiple Races	0.7%	1.0%	1.0%
White	83.3%	81.4%	80.2%
Undisclosed	2.6%	2.2%	3.2%
Salaried Workforce			
American Indian or Alaskan	0.4%	0.4%	0.4%
Asian	6.3%	6.7%	7.1%
Black or African American	2.8%	3.1%	3.3%
Hawaiian or Pacific Islander	0.1%	0.0%	0.1%
Hispanic or Latino	3.2%	3.5%	3.8%
Multiple Races	0.5%	0.7%	0.9%
White	85.9%	83.2%	81.4%
Undisclosed	0.8%	2.4%	3.1%

DIVERSITY

RACE AND ETHNICITY ^{20,25}	2021	2022	2023
Salaried Workforce (Continued)			
Management			
American Indian or Alaskan	0.3%	0.3%	0.4%
Asian	4.3%	4.3%	4.5%
Black or African American	3.0%	3.0%	3.5%
Hawaiian or Pacific Islander	0.1%	0.1%	0.1%
Hispanic or Latino	2.7%	2.8%	3.1%
Multiple Races	0.4%	0.5%	0.7%
White	88.8%	88.8%	86.5%
Undisclosed	0.4%	0.2%	1.3%
Senior Management			
American Indian or Alaskan	0.0%	0.0%	0.0%
Asian	8.8%	6.4%	6.2%
Black or African American	7.0%	11.3%	13.9%
Hawaiian or Pacific Islander	0.0%	0.0%	0.0%
Hispanic or Latino	1.8%	6.5%	4.6%
Multiple Races	0.0%	0.0%	0.0%
White	82.4%	74.2%	72.3%
Undisclosed	0.0%	1.6%	3.1%
Production Workforce			
American Indian or Alaskan	0.9%	1.2%	1.3%
Asian	0.6%	0.7%	0.8%
Black or African American	9.1%	10.2%	10.0%
Hawaiian or Pacific Islander	0.1%	0.1%	0.1%
Hispanic or Latino	3.1%	4.9%	4.5%
Multiple Races	0.8%	1.1%	1.1%
White	80.9%	79.8%	78.8%
Undisclosed	4.5%	2.0%	3.4%

DIVERSITY

RACE AND ETHNICITY ^{20,25}	2021	2022	2023
Interns			
American Indian or Alaskan	–	0.3%	0.5%
Asian	–	20.0%	20%
Black or African American	–	8.9%	7.7%
Hawaiian or Pacific Islander	–	0.0%	0.2%
Hispanic or Latino	–	7.3%	8.7%
Multiple Races	–	3.5%	4.5%
White	–	59.2%	53.7%
Undisclosed	–	0.8%	4.7%

AGE DIVERSITY ²⁰	2021	2022	2023
<30	–	25.0%	23.9%
30-50	–	58.4%	58.8%
>50	–	16.6%	17.3%

2023 TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE (TCFD)

SUMMARY

A team of climate and operations experts at John Deere reviewed and prioritized a universe of 50 potential climate-related risks and opportunities involving the company business. These included physical and transition risks and opportunities involving Deere's operations, supply chain, and customers. Six risks and two opportunities were identified to be further assessed through scenario analysis.

Each of the eight risks and opportunities were researched against two potential climate scenarios. The Deere team reviewed the research and rated the impact and likelihood of each risk and opportunity under a "high emissions" scenario (RCP 8.5) and a "low emissions" scenario (RCP 2.6) leveraging Deere's enterprise risk management criteria for these ratings.

KEY TAKEAWAYS

1. Under the low emissions scenario (RCP 2.6), **new disruptive business models and technologies** was the risk with the highest likelihood and impact to Deere's business.
2. Under the high emissions scenario (RCP 8.5), **acute weather events reducing crop yield for farmers** risk emerged as the highest likelihood and impact to Deere's business.
3. While the demand for existing fuel-efficient products was rated the most likely opportunity for Deere, the opportunity to provide **new products and services** to meet farmer demand for carbon sequestration and sustainable farming emerged as the most impactful.

This report outlines our Governance, Strategy, Risk Management, and Metrics & Targets related to climate change. For further details related to the projects and initiatives we are working on to mitigate risks and optimize opportunities, [please see pages 12–35 of the 2023 Business Impact Report](#).

GOVERNANCE

a) Describe the board's oversight of climate-related risks and opportunities.

The Deere & Company Board of Directors has oversight of sustainability and is responsible for aligning strategic priorities and ensuring sustainability, environmental, social, and governance principles are integrated throughout the enterprise.

The Corporate Governance Committee of the board reviews sustainability topics with management on a quarterly basis. During 2023, the committee was briefed on strategic sustainability initiatives, the evolving U.S. and global regulatory environment for sustainability reporting, new sustainability reporting standards and frameworks, the company's transition to integrated business and sustainability reporting,

the company's climate reporting road map, feedback from stakeholder engagement, and the landscape of shifting sustainability expectations and practices. Through regular engagement, the committee guides and directs strategic sustainability planning, sustainability goal setting, and the scope of sustainability reporting.

The Compensation Committee of the board is responsible for ensuring compensation is aligned with the strategic priorities, performance, and opportunities of the company. In 2023, we broadened our inclusion of sustainability components through qualitative assessments in executive compensation programs.

The full board of directors has oversight of the risks and opportunities associated with climate change and updates are provided to the board in alignment with Enterprise Risk Management processes. This year, the full Board of Directors received an overview of the current status of sustainability initiatives from across the enterprise, with a primary focus on initiatives that are driving progress on the Leap Ambitions.

b) Describe management's role in assessing and managing climate-related risks and opportunities.

CEO Staff

CEO Staff provides direction for and ultimately owns the execution of the company's sustainability initiatives. Oversight and ownership at this level help ensure the company's sustainability initiatives are aligned with and are a core component of the overall business strategy. CEO Staff receives sustainability updates at least quarterly. During 2023, updates included strategic priorities and progress updates on our Leap Ambitions, progress toward embedding sustainability into company core processes, the evolving U.S. and global regulatory environment for sustainability reporting, new sustainability reporting standards and frameworks, the company's transition to integrated financial and sustainability reporting, the company's climate reporting roadmap, and stakeholder feedback.

Corporate Sustainability

John Deere's Corporate Sustainability function is part of the Accounting & Finance organization and serves to drive the enterprise's sustainability strategy and governance. This centralized team is responsible for driving, measuring, and

reporting sustainability strategies and initiatives at Deere. The team coordinates across the enterprise to measure and report progress on Leap Ambitions and other sustainability metrics, evolve core processes, and engage with external stakeholders to communicate the Smart Industrial Operating Model and Leap Ambitions. This team also partners with the company's technical accounting and internal audit experts to build robust processes and rigor related to sustainability reporting and oversees the company's external assurance of its sustainability metrics. In addition, the team relies on a broad group of subject matter experts throughout the organization to execute Leap Ambitions through the development and implementation of road maps that align delivery of products and solutions with Leap Ambition outcomes.

Leap Ambition Strategy Champions and Owners

Each Leap Ambition has a goal champion and owner. Each goal champion owns the delivery of a goal and is responsible for aligning priorities and resources throughout the organization, reviewing progress and challenges, and driving execution of initiatives to meet the goals. Goal owners have specific

ownership of the actions driving the steps needed to achieve the Leap Ambitions. Goal owners guide the efforts of the sustainability workstreams.

Sustainability Workstreams

A global, cross-functional team of subject matter experts is critical to the execution of John Deere's strategic priorities. Working together on execution workstreams, they develop implementation plans for achieving our sustainability initiatives and engage progress to ensure delivery of action plans. These sustainability workstreams also serve a key role in keeping the organization informed relative to progress and roadblocks as they track and report metrics on a regular basis. These teams are comprised of individuals with deep technical knowledge in their respective areas of expertise who are helping us solve the most difficult challenges to achieving our Leap Ambitions.

STRATEGY

a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

TRANSITION RISKS

R1: Transition to lower emissions technology

Risk type: Technology

Description: We expect demand for electric farm equipment and alternative farming models (e.g., indoor farming, equipment as a service) would rise more so in a low emissions climate scenario (RCP 2.6) than a high emissions scenario (RCP 8.5), as farmers look for ways to increase efficiency and yields and reduce costs and emissions in their operations. While electrification in large equipment is currently only in test phases or niche markets, John Deere's competitors are investing in these technologies to enter this market and claim market share. Additionally, using hydrogen as a fuel source has some advantages to Deere customers (e.g., significant improvement on charge time), and the indoor farming model could become increasingly attractive as water scarcity and urbanization increase. If John Deere fails to properly invest in new technologies to meet customer demands, we will be at risk of losing potential revenue sources in the future. This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: More likely than not

Magnitude of impact: Medium

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

R2: Carbon Pricing Mechanism on Deere & Company

Risk type: Policy and Legal

Description: John Deere's operating costs could be impacted if regulators enact a carbon pricing mechanism (e.g., carbon tax, emissions trading scheme). Under a high emissions scenario (RCP 8.5), we assume little to no increase in carbon pricing over time and thus no financial impact to Deere's operations. Under a low emissions scenario (RCP 2.6), we assume a carbon price of approximately \$100/mt by 2050, which will result in significantly higher operating costs for Deere in the future. This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: Likely

Magnitude of impact: Medium–low

Primary potential financial impact: Increased indirect (operating) costs

R3: Carbon Pricing Mechanism on Production Inputs

Risk type: Policy and Legal

Description: Many of John Deere's production inputs are carbon intensive and highly susceptible to increased costs from physical impacts of climate change and regulatory action. Physical risks to energy infrastructure intensify under a high emissions scenario (RCP 8.5), which could result in an estimated 8–12 percent increase in energy costs by 2050. Additionally, a carbon tax would significantly raise the cost of steel and aluminum production especially under a low emissions, high regulator action scenario (RCP 2.6). This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: More likely than not

Magnitude of impact: Medium–low

Primary potential financial impact: Increased indirect (operating) costs

R4: Carbon Pricing Mechanism on Customers

Risk type: Policy and Legal

Description: Under a low emissions, high regulation scenario (RCP 2.6), changes in climate policy, including carbon taxation, have the potential to increase input costs for farmers, resulting in decreased or shifting demand for John Deere products. For example, a carbon tax on fuels could drive farmers away from gas and diesel Deere products towards equipment that uses lower-carbon fuels or electric equipment from competitors. Additionally, as global demand for fuels overall may decrease under this low emissions scenario, demand for bio-based fuels produced from crops has the potential to decrease also, resulting in negative financial impacts for row crop farmers and potentially decreased revenue for John Deere. However, depending on how global policies develop and the agricultural industry adapts, we think the evolution of bio and renewable fuels is one of the greatest potential opportunities for our business. This opportunity is discussed further below in this section under *“Development and/or expansion of goods and services — alternative fuels.”*

In a high emissions scenario (RCP 8.5), we would not expect to see a major impact on fuel or biofuel demand. We would expect to see an increase in pests and weeds resulting in the increased need for pesticides and fertilizer use. We would expect this to increase costs for farmers, which could negatively impact demand for Deere products. However, this could also drive increased demand specifically for John Deere's precision technology solutions that enable customers to maintain or enhance outcomes while using less inputs. This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: More likely than not

Magnitude of impact: Medium

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

STRATEGY

a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

PHYSICAL RISKS

R5: Increased severity and frequency of extreme weather events such as heat waves and storms

Risk type: Acute

Description: The IPCC assessment reports find extreme weather conditions will worsen as a result of climate change. Under a high emissions scenario (RCP 8.5), we assume a nine-times increase in frequency of heat waves, a 30-percent increase in severity of heavy rainstorms, and a 35-percent increase globally in high fire danger. Under a low emissions scenario (RCP 2.6), extreme weather is still expected to increase, though not to the extent of the high emissions scenario. As a result, farmers may see reduced crop yields over time due to extreme weather events. Crop insurance can mitigate the direct financial impact of lost yields to farmers, but insurance premiums could rise and reduce profit margins for farmers. These potential changes in revenue and profit margins could result in decreased cash on hand for John Deere products. This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: Likely

Magnitude of impact: Medium

Primary potential financial impact: Decreased revenues due to reduced farmer spending

R6: Changes in precipitation patterns and extreme variability in weather patterns

Risk type: Chronic — Physical

Description: IOP Science estimates that drought conditions will be eight times as prevalent in the high emissions scenario (RCP 8.5) compared to today, and two times as prevalent under the low emissions scenario (RCP 2.6). Drought conditions are expected to increase demand for irrigation by 15–25 percent under the high emissions scenario, with a slight increase in demand under the low emissions scenario. Limited irrigation adaptation could lead to constrained water resources, and we believe most John Deere markets would likely see increased irrigation costs, which has the potential to significantly increase costs to farmers growing crops in areas under significant drought. Under the high emissions scenario, areas under water stress may see a decrease in crop production, causing John Deere sales to decrease in these markets. This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: More likely than not

Magnitude of impact: Medium–low

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

STRATEGY

a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

OPPORTUNITIES

O1: Development and/or expansion of goods and services — agricultural practices

Opportunity type: Products and Services

Description: As farmers look for ways to reduce emissions, especially under a low emissions scenario (RCP 2.5), John Deere has the opportunity to help them meet their emission reduction and sustainability goals through new equipment and services. John Deere products could support regenerative agriculture practices such as cover cropping, hasten outdated equipment through performance upgrades or retirement, and supply soil carbon measurement products (similar to nitrogen sensing product lines). In particular, we expect the value of the John Deere Tech Stack and Operations Center platform to increase as the agricultural community looks to validate carbon sequestration, low carbon commodity production, and optimize inputs such as water, fertilizer, and pesticides. John Deere Financial also has the opportunity to ease farmers' transition costs via unique financing options. This opportunity relies heavily on the low emissions scenario as the high emissions scenario (RCP 8.5) is not likely to yield the same demand for sustainable farming products and services. This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: More likely than not

Magnitude of impact: Medium–low

Primary potential financial impact: Increased revenues through access to new and emerging markets

O2: Development and/or expansion of goods and services — alternative fuels

Opportunity type: Products and Services

Description: The sustainable fuel market is poised for significant growth, with an estimated 8.3-percent compound annual growth rate (CAGR) from 2021 to 2030.³² Under a low emissions scenario (RCP 2.6) where alternative fuels are recognized and potentially incentivized as a critical component of the transition away from high-carbon fuels, we would expect to see demand for equipment and education around a variety of bio and renewable fuels to be higher than under a high emissions scenario (RCP 8.5). This would provide John Deere the opportunity to supply equipment that utilizes low carbon fuels, new equipment that enables our customers to produce crops for bio and renewable fuel production, and the opportunity for John Deere Financial to partner with farmers to transition towards these new fuels. However, depending on how global policies develop and the agricultural industry adapts, we think the evolution of bio and renewable fuels is also a potential risk for our business. This risk is discussed further above in this section under “*Carbon Pricing Mechanism on Customers.*” This analysis considered a long-term view of four years or greater, in alignment with John Deere's strategic planning.

Impact

Time horizon: Long term

Likelihood: More likely than not

Magnitude of impact: Medium–low

Primary potential financial impact: Increased revenues through access to new and emerging markets

STRATEGIC RESPONSE

b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

The foundation of John Deere's climate strategy is a multipronged engagement strategy to continually evaluate and identify our highest priority climate topics. Our highest priority climate topics served as the focus areas for the Leap Ambitions, released in February 2022. Climate-related risks and opportunities were considered as a driver in the creation of our Leap Ambitions. Deere set a Science Based Target for reducing Scopes 1 and 2 and certain Scope 3 greenhouse gas emissions, which have since been validated, while continuing to focus on the opportunity related to reducing the greenhouse gas (GHG) emissions of our customers.

In 2023, the company invested \$2,177 million (USD) in research and development activities. Deere has continued to invest robustly in its innovation efforts, with a focus on developing and incorporating precision technology solutions to enable our customers to do more with less. This investment includes but is not limited to new technology development in low/no carbon alternative power solutions by investing in engine efficiency, hybridization, electrification, and renewable fuels. Deere is also engaged with numerous stakeholders to develop other means of alternative power.

REDUCING CLIMATE CHANGE IMPACT ON CUSTOMERS THROUGH PRECISION TECHNOLOGY AND PRACTICE CHANGES

Connected Risks and Opportunities:

- R4 – Carbon pricing mechanism on customers
- R5 – Increased severity and frequency of extreme weather events such as heat waves and storms
- R6 – Changes in precipitation patterns and extreme variability in weather patterns
- O1 – Development and/or expansion of goods and services – agricultural practices

Our investments in precision agricultural products can unlock economic and sustainable opportunities for our customers, including those related to climate change. Through precision technology, data driven insights, and traceability enablement, we can impact on-farm greenhouse gas (GHG) emissions, scaling the magnitude of impact beyond our calculated Scope 1, 2, and 3 CO₂e emissions footprint. With that in mind, Deere set a 2030 goal to enhance ag customer outcomes by reducing their CO₂e emissions by 15 percent on a per unit of output basis against a 2021 baseline. The focus of our efforts with respect to this goal is expected to be on the optimization and efficiency of inputs and the integration of sustainable practices in the field. Sustainable practices and technologies adoption can unlock reductions in carbon emissions and soil erosion, improving soil health and resiliency, water quality, and nitrogen and crop protection efficiency.

Precision Ag technologies can unlock more value for customers with less inputs.

Examples include:

- [ExactShot™](#) is designed to optimize starter fertilizer usage. Across the U.S. corn crop, ExactShot could save over 93 million gallons of starter fertilizer annually.
 - Nitrogen, a key fertilizer for plant growth and production, is one of the most carbon-intensive inputs in a crop production system. Therefore, John Deere is also focused on delivering technology and solutions that help improve nitrogen use efficiency by 20-percent per unit of output by 2030.
- [AutoPath™](#) is demonstrated in grassland management for hay production. By using AutoPath, customers managing their grasslands for hay production may reduce fuel usage by 10-percent and CO₂e emissions by nearly 15-percent. Hay is a key source of food for livestock.
- [See & Spray™](#) technology is the centerpiece to the company's Leap Ambition journey of helping farmers improve crop protection use efficiency by 20-percent by 2030. We have released three products that enable targeted application of non-residual herbicide on weeds only and can generate as-applied maps of the herbicide in the field in Operations Center:
 - [See & Spray™ Select](#), launched in 2021, utilizes "green-on-brown" color detection technology on unplanted ground to clear weeds while the ground is not being used to raise crops or before the start of a production cycle.
 - [See & Spray™ Ultimate](#), launched in 2022, uses computer-vision and machine-learning product that utilizes 36 cameras across the sprayer's boom to determine what is a weed and what isn't. By only spraying the weed and not solely relying on broadcast methods, growers can reduce herbicide inputs by up to two-thirds.

STRATEGIC RESPONSE

b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

- [See & Spray™ Ultimate \(Continued\)](#)
 - ◊ A 3,000-acre U.S. cotton farm may annually [save nearly 489 metric tons CO₂e annually](#) from using Deere's See & Spray Ultimate system, a C770 Harvester and other Deere technology (ExactApply™ sprayer system, section control, and AutoTrac™ assisted steering system).
- [See & Spray™ Premium](#), launched in 2023 is a precision-upgrade kit that, when installed on a sprayer, farmers can cover more acres than before on a single tank — while using targeted spray — making fewer stops to fill and using less chemical and water.

- Our smart-spraying capabilities now extend to high-value crops (HVCs) as evidenced by the company's acquisition of [Smart Apply Inc.](#), a precision spraying equipment company that developed the Smart Apply® Intelligent Spray Control System™. Smart Apply's precision spraying can help achieve up to 93-percent less chemical runoff and up to 87-percent reduction in airborne drift. Smart Apply can also help reduce the total amount used in blast spraying operations by up to 50%, including water and crop protection chemicals.

In addition, **John Deere Operations Center** has had several updates to allow customers easier access to insightful data and sustainable programs:

- In 2023, [Machine Analyzer](#) was updated to capture not just the fuel rate but also the carbon emissions from fuel consumption:
 - This feature is available on Deere agriculture, construction, and forestry machinery connected to the Operations Center.

- In 2023, we launched the [Sustainability Section](#) in the Operations Center. This allows U.S. agriculture customers to easily understand, compare, and sign up for programs that provide an incentive for the use of sustainable practices. This can help farmers to implement more sustainable practices without compromising their bottom lines.

We have also engaged in **partnerships and pilots** to find more data-driven insights to deliver economic and sustainable solutions:

- Through a strategic partnership with DeLaval we launched the [Milk Sustainability Center \(MSC\)](#) in an effort to create opportunities for dairy farmers to manage data more efficiently while unlocking more sustainable and profitable outcomes:
 - MSC is working to enable dairy farmers to calculate, benchmark, simulate, and optimize nutrient use efficiency and CO₂e for sustainable and profitable decision-making.
- [John Deere's Iowa State University Sustainability Farm](#) is focused on how various conservation methods and precision technology solutions, coupled with data-driven insights from the John Deere Operations Center, can impact profitability, soil health, nitrogen use efficiency, and GHG emissions.
- John Deere's exploratory [Low Carbon Feedstock Pilot](#) aims to investigate the potential direct payment to farmers for lower carbon intensity corn used for ethanol. The pilot covers nearly 3,800 acres documented in the John Deere Operations Center that are utilizing a conservation practice to reduce carbon intensity.

SUSTAINABLE OPERATIONS

Connected Risk and Opportunities:

- R2 – Carbon Pricing Mechanism on Deere & Company

Foundational to Deere's climate journey, reducing our Scope 1 and 2 GHG emissions is key to reducing climate-related risks, as well as managing certain financial risks. Deere has validated Science Based Targets to reduce its Scope 1 and 2 GHG emissions by an additional 50-percent by 2030 against a 2021 baseline. We'll aim to accomplish this through efficiency gains in operations and facilities processes, and by using and investing in even more renewable electricity and fuels.

Examples of some specific actions we have taken include:

- The [Mesquite Sky Wind](#) operation generates renewable electricity equivalent to more than 20-percent of John Deere's global electricity footprint.
- In [fiscal year 2023](#), we implemented projects to reduce Scope 1 and 2 GHG emissions by nearly 1,200 metric tons of CO₂e annually. We also identified additional opportunities for reductions in emissions and cost savings.

STRATEGIC RESPONSE

b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

DECARBONIZING OUR PRODUCTS THROUGH EFFICIENCY, HYBRIDIZATION, ELECTRIFICATION, AND RENEWABLE FUELS

Connected Risks and Opportunities:

- R1 – Transition to lower emissions technology
- O2 – Development and/or expansion of goods and services – alternative fuels

John Deere has set a validated Science Based Target of reducing its Scope 3 greenhouse gas (GHG) emissions from its purchased goods and services and use of sold products by 30 percent by 2030 against a 2021 baseline. Deere is committed to ensuring that the products it brings to market deliver incremental economic value and lower GHG emissions for its customers.

We believe the first step on the path to 2030 is demonstrating viable low/no carbon alternative power solutions by 2026 across Deere's various customer segments. The viability aspect is key — the solutions must provide customer value. One thing we know for sure — this journey will require multiple solutions across our portfolio. We are aiming to achieve this ambition by investing in efficiency, hybridization, electrification, and renewable biofuels. Deere is also engaged with numerous stakeholders to develop other means of alternative power.

Efficiency

For many Deere machines, we expect the internal combustion engine, carrying the benefits of power density, extended operating times, and existing infrastructure for refueling, will remain the primary propulsion source for the remainder of this decade and beyond. But just because there is an engine does not mean running it cannot be sustainable or low carbon.

John Deere Power Systems experts continue to develop new products that aim to improve upon its already best-in-class fuel-efficient engines:

- [Deere's 13.6L engine](#) delivers a 30-percent improvement in efficiency over previous models. We believe engine efficiency will continue to be critical for the types of equipment that we produce for years to come.

Driving more efficiency in John Deere engines not only has the immediate impact of making a machine more efficient — burning less fuel and emitting less — it also serves as a building block for further alternative propulsion innovation. For example, by building upon our expertise in making engines more efficient, we can incorporate technologies like electrification and hybridization to make the system more efficient.

Electrification

[Multiple electrification offerings](#) allow customers to be more precise, productive, and sustainable.

Hybridization is used to drive vehicle efficiency in two ways. The first is about utilizing the engine's power to generate electrical energy to more effectively power various loads. The second is more traditional and is about off-loading some of the engine's energy demands with a second power source, a battery, and using that source to run other functions traditionally tied to the engine.

Full battery-electric can enhance precision controls and ease of use, while reducing GHG emissions and required maintenance. Deere is focusing its full battery-electric vehicle development efforts on those product segments with highest customer demand and where battery technology is a viable alternative, most notably residential and commercial turf equipment and within the construction infrastructure market:

- Deere's acquisition in 2022 of a majority ownership interest in [Kreisel Electric Inc.](#), an Austrian-based battery technology provider, is an essential step in achieving the company's electrification goals.
- Deere set a Leap Ambition goal specifically for its Construction & Forestry Division to deliver 20 or more electric and hybrid-electric product models by 2026, which will be an important first step on the path to 2030:
 - In 2022, [Wirtgen Group's Hamm revealed electric battery-driven tandem rollers](#) and [Vögele revealed its MINI Paver line, in diesel and electric](#). The Vögele electric mini pavers provide a more sustainable, battery-electric production system for small-scale construction projects when used in conjunction with the Hamm battery-electric tandem rollers.
 - The [850 X-Tier Dozer with E-Drive technology](#) is still in the process of validation and testing, but we are seeing improvement in both fuel efficiency and productivity over traditional machines.
 - Our [744X-Tier and 824 X-Tier loaders](#) with E-Drive Technology are expected to deliver fuel savings, emission reductions and productivity gains for our customers when they hit the market in 2024.
- Deere aims to offer an electric option in each turf and compact utility tractor product family by 2026 as well as deliver an autonomous, battery-powered electric utility tractor to the ag market by 2026.
 - In 2023, we launched [new turf care machines](#) tailored to our golf course customers, including electric Gator™ utility vehicles, E-Cut Electric walk-behind greens mowers, and hybrid fairway mowers.

STRATEGIC RESPONSE

b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

Biofuels

Crop-based biofuels (including ethanol, renewable diesel and biodiesel) being produced today have emission factors that rival battery-electric vehicles, given that many electric grids are not 100-percent renewable.³³ And with continued advancements in precision agriculture technology, as well as refining infrastructure, there is ample opportunity to further reduce the carbon intensity of biofuels. The challenge for biofuels is a shared experience, driven primarily by current supply limitations and the need for exponential growth to meet demand. We are investigating and developing biofuel solutions that will work for our customers:

- [We displayed a concept 9-liter engine that is compatible with ethanol at the 2023 AGRITECHNICA show:](#)
 - Ethanol provides upwards of 40-percent less CO₂e emissions than gasoline, and the production and distribution network for ethanol is already mature in many geographies around the world.³⁴
- [Our available engines can run on renewable diesel:](#)
 - Renewable diesel is a 50–80 percent less carbon intensive alternative to petroleum-based fuels.³⁵
 - Due to the limited capacity and infrastructure for renewable diesel production, we continue to participate in pilot programs tied to the growing of winter oilseed cover crops that can be used as a source of feedstock for renewable diesel production. This includes partnerships that employ camelina (also being explored for jet fuel across Minnesota, Iowa, and Texas).

Deere is partnering with industry leaders to unlock opportunities that make our customers' businesses more profitable, productive, and sustainable. These partnerships help support ongoing studies and collaboration efforts in the areas of viability and quality to understand fuel alternatives for Deere machines. They also are aimed at advancing policy, infrastructure, and capacity for expanded biofuel production.

ENGAGING OUR SUPPLY CHAIN

Connected Risk:

- R3 – Carbon Pricing Mechanism on Production Inputs

Engaging our supply base is crucial to our success in reducing upstream greenhouse gas (GHG) emissions. From strategically analyzing product materials and supplier data, John Deere has identified the opportunities where partnering with our supply chain can have the most significant impact on GHG emissions. To track our progress, Deere set validated Science Based Targets relevant to reducing Scope 3 Category 1 upstream supplier GHG emissions. Our approach to addressing GHG emissions in the supply base is multipronged.

John Deere continues to communicate its sustainability strategy to all suppliers in the John Deere Supplier Network (JDSN) platform. This strategy guides our search for supplier opportunities that further our 2030 goals — those relating to GHG emissions reduction, increased use of sustainable materials, and recyclable materials.

For fiscal years 2022 and 2023, we collaborated with energy-intensive suppliers of key materials, beginning with steel, castings, rubber, glass, packaging, data centers, batteries, and power systems. Those materials are all tied directly to GHG emissions, waste intensity at facilities, and circularity of products. In fiscal year 2022 we expanded our Supplier Achieving Excellence program. This year-round company program measures, recognizes, and rewards exceptional supplier performance. A supplier can no longer reach the highest level of recognition without incorporating sustainability initiatives into their business, including criteria such as EcoVadis participation, setting goals for reductions in GHG emissions, reporting GHG emissions, and improving workforce diversity. John Deere utilizes EcoVadis to assess suppliers in an objective

and independent way. The assessment looks at corporate social responsibility and sustainability management systems, and identifies potential supplier contributions to sustainability as well as risks.

Additionally, in fiscal years 2022 and 2023:

- Over 1,650 supplier locations have completed sustainability scorecards, equating to [65% of our Tier 1 supplier spend engaging with sustainability assessments](#).
- We are encouraged that approximately [65% of our key suppliers by spend are measuring and publicly reporting certain of their emissions](#).
- Examples of specific suppliers within our Supplier Achieving Excellence Program include:
 - [SSAB, a global steel company](#), received a Supplier Sustainability Award from Deere & Company for its sustainability initiatives.
 - [De Jong Manufacturing Inc.](#), a women-owned small business supplying metal fabrication to us, began calculating and estimating Scope 2 and some Scope 3 categories in 2023.

STRATEGY

c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

SCENARIO ANALYSIS

John Deere evaluated each risk and opportunity for impact to the company's business and the likelihood that the risk or opportunity will occur. The top risks and opportunities, and the associated drivers, were then assessed under two climate scenarios ("low emissions" and "high emissions") using Enterprise Risk Management criteria.

John Deere chose the RCP 8.5 scenario as the "high emissions" scenario to evaluate impact and likelihood of physical risks of climate change. Deere chose this scenario, as it has been cited by Woodwell Climate Research Center that current emissions are tracking most closely to this scenario. The year 2050 was selected as a time horizon, as many global net zero targets and world governments climate targets align with 2050.

John Deere chose the RCP 2.6 scenario as the "low emissions" scenario to evaluate impact and likelihood of transition risks of climate change. Deere chose this scenario as it represents the "bookend" scenario to RCP 8.5. We believe RCP 2.6 in the scenario analysis will allow Deere to understand the broad spectrum of potential climate-related risks and opportunities. The year 2050 was selected as a time horizon, as many global net-zero targets and world governments climate targets align with 2050.

Our assessment of risks and opportunities under the two scenarios was qualitative and quantitative. The scenario analysis considered all areas of the organization. We considered risks to Deere's business and primary customers (farmers). Physical risks, such as rising mean temperature and increased frequency and severity of acute weather events, were found to have significant potential impact to farmers, especially under the RCP 8.5 scenario. Transition risks, such as cost increases due to carbon pricing models as farmers seek more sustainable farming practices, were found to have significant potential impact to Deere, especially under the RCP 2.6 scenario.

The scenario analysis results are expected to be used to further enhance existing risk management practices and establish risk responses and procedures to enhance management of climate-related risks and opportunities. The results have been discussed with the Deere management team to identify opportunities for further integration into the company's annual risk management procedures.

For example, during the scenario analysis a top risk identified under the RCP 8.5 scenario in terms of highest impact and likelihood to John Deere was the physical risk of increased severity and frequency of extreme weather events. Under this scenario, there was a nine times increase in heatwaves, 30 percent increase in severity of heavy rain storms and

a 35 percent increase globally in high fire damage. This quantitative assessment was then used to develop a qualitative analysis on the impact to Deere. We determined that farmers may see reduced crop yields over time due to extreme weather events. Crop insurance can mitigate the direct financial impact of lost yields to farmers, but insurance premiums could rise and reduce profit margins for farmers. These potential changes in revenue and profit margins could result in decreased cash on hand for John Deere products, they could also create an increased demand in alternative farming methods such as precision agriculture.

Similarly, during the scenario analysis, the top risk identified under the RCP 2.6 scenario in terms of highest impact and likelihood to John Deere, was the impact of new disruptive business models and technology related to moving to a low-carbon economy. We assessed the impacts of several types of transformative low-carbon business models for farming, including electrification of equipment, indoor farming, equipment as a service, and miniaturization/autonomous equipment. Under RCP 2.6, we determined that electrification would see the most significant and rapid growth, with estimates of up to 18-percent CAGR. Should Deere fail to adapt to the changing demand in farming equipment from farmers, we have the potential to lose revenue and market share opportunities.

RISK MANAGEMENT

a) Describe the organization's processes for identifying and assessing climate-related risks.

Since 2009, the company has had a Climate Team (prior to 2021 the company had a Climate Change and Carbon Risks Team). The current team is composed of global representatives from Production Systems, Agronomy, Economics, Environmental, Accounting, Public Affairs, Legal, Energy, and Sustainability. Climate change risks and opportunities are reported to this team at the production system, division, and company levels via quarterly meetings. This team monitors changes in climate science, technical issues such as land-based offset protocol developments, macro and sector level economics related to forestry and agricultural modeling, carbon and fuel prices, representative customer trade associations' positions, climate regulation and legislation globally, and other carbon marketplace news. The team discusses if the company or any division or facility should be doing anything differently and may include discussion of asset processes, company processes, or customer processes. The Climate Team utilizes a variety of tools to identify and assess climate-related risks.

b) Describe the organization's processes for managing climate-related risks.

c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

In 2021, this team, working with others in the organization, assessed climate-related risks and opportunities to our business in alignment with the Task Force on Climate related Financial Disclosures (TCFD). This assessment utilized the methodologies outlined by TCFD as well as our enterprise risk management process described above. This process involved conducting two TCFD workshops with representatives across Deere's organization to determine: a) which climate-related risks and opportunities are most impactful to our business, and b) the impact and likelihood ratings of those top risks and opportunities under two climate scenarios (RCP 2.6 and RCP 8.5).

In 2022, Corporate Sustainability was added as part of the Accounting & Finance organization. This centralized team serves to drive the enterprise's sustainability strategy and governance. This team develops the TCFD report and any future climate-related reporting. Corporate Sustainability collaborates with Leap Ambition owners and champions as well as sustainability workstreams to execute on our

strategy to respond to risks and opportunities identified from the scenario analysis described in our TCFD report. For more information on this team, see the [Governance section of this report](#).

METRICS AND TARGETS

a) **Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.**

In February 2022, John Deere launched a new suite of Leap Ambitions, which included climate goals focused on Scope 1 and 2 and certain Scope 3 GHG emissions. We have committed to achieving a 50-percent absolute reduction of operational CO₂e emissions (Scope 1 and 2) and 30-percent absolute reduction of certain upstream and downstream CO₂e emissions (Scope 3 Categories 1 and 11), both with baselines of 2021 and a target year of 2030. Deere completed an inventory of its Scope 3 GHG emissions in 2021. Of the 15 categories of Scope 3 GHG emissions, Category 1 (Purchased Goods & Services) and Category 11 (Use of Sold Products)

were determined to be significant categories due to their size. Scope 3 Category 1 and Category 11 GHG emissions comprise over 90 percent of Deere's Scope 3 total emissions. Therefore, Deere's 2030 reduction targets are focused on these two categories of Scope 3. Deere has validated these goals with the Science Based Targets initiative.

has a Leap Ambition aiming to enhance agricultural customer outcomes by reducing 15-percent of their CO₂e emissions per unit of output by 2030 against a 2021 baseline. Our progress is noted at [Leap Ambitions in this Data Book](#). This goal is tied to inputs, equipment, and practices in the field — from nitrogen management and crop protection efficiency to renewable fuels and alternative power solutions.

c) **Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.**

Through precision technology, data-driven insights, and traceability enablement, Deere can impact on-farm GHG emissions, scaling the magnitude of its impact beyond our calculated Scope 1, 2, and 3 GHG emissions. Therefore, Deere

b) **Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.**

Fiscal Year 2023 GHG Emissions

[Scope 1](#)

[Scope 2](#)

[Scope 3](#)

[Category 1](#)

[Category 11](#)

CARBON CREDIT STANCE

At this time, due to the variability in quality, uncertainty related to duration, and inconsistent economic valuation, we do not currently participate in purchasing carbon credits to fulfill our climate commitments. Additionally, the Science Based Target initiative does not recognize the use of carbon credits for near-term commitments. We will continue to monitor the market, verification standards, and accounting guidance for carbon credits as we progress on our climate-transition journey.

2023 SASB INDEX





Sector: Resource Transformation
Industry: Industrial Machinery & Goods

Topic	Metric	Category	Unit of Measure	Code	John Deere Response
Energy Management	Total Energy Consumed	Quantitative	Gigajoules (GJ)	RT-IG-130a.1.1	Emissions and Energy
	Percentage Grid Electricity	Quantitative	% of Total Energy	RT-IG-130a.1.2	Emissions and Energy
	Percentage Renewable Energy	Quantitative	% of Total Energy	RT-IG-130a.1.3	Emissions and Energy
Employee Health & Safety	Total Recordable Incident Rate (TRIR)	Quantitative	Rate per 100 Employees	RT-IG-320a.1.1	Safety
	Fatality Rate	Quantitative	Rate per 100 Employees	RT-IG-320a.1.2	Safety
	Near Miss Frequency Rate (NMFR)	Quantitative	Rate per 100 Employees	RT-IG-320a.1.3	Safety
Fuel Economy & Emissions In Use Phase	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles	Quantitative	Gallons per 1,000 ton-miles	RT-IG-410a.1	Not applicable to John Deere
	Sales-weighted fuel efficiency for non-road equipment	Quantitative	Gallons per hour	RT-IG-410a.2	Sustainable Product Design
	Sales-weighted fuel efficiency for stationary generators	Quantitative	Watts per gallon	RT-IG-410a.3	Not applicable to John Deere
	Sales-weighted emissions of: (1) nitrogen oxides (NO _x), and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines, and (d) other non-road diesel engines.	Quantitative	Grams per kilowatt-hour	RT-IG-410a.4	(1) Sustainable Product Design (2) Sustainable Product Design
Remanufacturing Design & Services	Revenue from remanufactured products and remanufacturing services	Quantitative	Reporting currency	RT-IG-440b.1	Sustainable Product Design
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	N/A	RT-IG-440a.1	<p>JOHN DEERE RESPONSE</p> <p>At John Deere, we manufacture heavy-duty machines, engines, and electronics that enable our customers to produce more with less. To create these technology-enabled machines, we work with suppliers around the globe to source raw materials, components, and parts that are incorporated into our manufacturing processes. Due to the nature of our business, certain raw materials, parts, and components of John Deere products, and certain manufacturing processes, incorporate critical materials. Batteries, electronic components, magnets, seals, and coatings for certain parts and components are among the various applications that incorporate critical materials. These materials may include cobalt, tantalum, tungsten, graphite, platinum group metals (platinum and palladium), and rare earth metals. We have policies and processes in place to manage risks related to the supply of these materials, including risks related to availability and access, price volatility, human rights practices throughout the supply chain, and geopolitical uncertainty. These key processes and policies include:</p> <ul style="list-style-type: none"> • Multi-supplier sourcing strategies utilized where available to mitigate risk of availability and access related to a single supplier. • Multi-location sourcing strategies utilized to mitigate risk of geopolitical uncertainty. • Part and component specifications designed across product lines based on required performance, rather than material, such that alternative materials can be used to mitigate risk related to availability and access. • Long-term agreements negotiated with key suppliers to mitigate the risk of price volatility. • Industry programs leveraged for recycling and reuse of precious rare earth metals. • Education of suppliers on John Deere expectations with respect to the integrity of its supply chain, including requiring adherence to the John Deere Supplier Code of Conduct. • Adherence to the John Deere Global Conflict Minerals Policy to help ensure responsible sourcing of conflict minerals in our supply chain. • Supplier sustainability risk assessments through EcoVadis, which includes consideration of human rights practices and supply chain integrity. • Robust supplier audit program with appropriate follow-up due diligence processes, which involves three critical components: (1) quality and compliance audits on all new suppliers; (2) follow-up audits for existing suppliers based on known issues, new manufacturing or sourcing locations, or other identified issues; and (3) an annual Conflict Minerals review for over 70 percent of our total purchased volume. <p>Please see page 59 of the Deere 2023 Business Impact Report for additional background on how we manage our supply chain and critical materials.</p>












Activity Metric	Category	Unit of Measure	Code	John Deere Response
Number of units produced by product category	Quantitative	Number	RT-IG-000.A	Proprietary
Number of employees	Quantitative	Number	RT-IG-000.B	Workforce

2023 UN SDG INDEX

John Deere continues to embrace the United Nations Sustainable Development Goals through 2030. This document describes how our world-changing work directly contributes to specific UN SDGs.

Feature Story	SDG	Connection Point
Sustainable Dairy and Livestock	<p>2 ZERO HUNGER</p> <p>13 CLIMATE ACTION</p> <p>17 PARTNERSHIPS FOR THE GOALS</p>	We've formed a strategic partnership with DeLaval to launch the Milk Sustainability Center (MSC) in an effort to create opportunities for dairy farmers to manage data more efficiently while unlocking more sustainable and profitable outcomes. MSC is a cloud-based tool for desktop and mobile devices that offers the combination of field and barn data, allowing producers access to comprehensive data to make the best holistic decisions for their operations. MSC will excel in offering the linkage of continuous data flow between the animal and the field. This will provide key insights and opportunities for customers to maximize profit and minimize the environmental milk-production footprint.
Smarter Spraying Tech Expansion Covers More Ground (and Crops)	<p>2 ZERO HUNGER</p> <p>15 LIFE ON LAND</p> <p>17 PARTNERSHIPS FOR THE GOALS</p>	Protecting crops after emergence is one of the most critical steps growers take on their way to optimizing productivity of every acre. In 2023, our revolutionary See & Spray™ technology was used on over one million acres, which helped farmers achieve nearly 2/3rds reduction in solution, saving over eight million gallons. We introduced See & Spray™ Premium, our new precision-upgrade kit. Once a See & Spray Premium precision-upgrade kit is installed on a sprayer, farmers can cover more acres than before on a single tank — while using targeted spray — making fewer stops to fill and using less chemicals and water. Our smart-spraying capabilities now extend to high-value crops (HVCs) as evidenced by the company's acquisition of Smart Apply Inc., a precision spraying equipment company that developed the Smart Apply® Intelligent Spray Control System™. Smart Apply's intelligent spray system is an upgrade kit that improves the precision and performance of any air-blast sprayer used in orchard, vineyard, and tree nursery spraying applications. Smart Apply's reduction of chemical and water use ultimately reduces the impact of weed and pest management on biodiversity while helping meet a Leap Ambition goal to expand sustainably engaged acres and improve crop protection efficiency for our customers.
Operations Center Optimization	<p>13 CLIMATE ACTION</p> <p>15 LIFE ON LAND</p>	Sustainable practices and technologies adoption can improve the health and resiliency of the land we depend on. They can also unlock reductions in carbon emissions and soil erosion while providing improvements to water quality and nitrogen and crop-protection efficiency. To help customers achieve financial and sustainable outcomes, we launched the Sustainability Section in the Operations Center. A key feature that allows U.S. agriculture customers to easily understand, compare, and sign up for programs that provide an incentive for the use of sustainable practices. We continue to seek out new scalable opportunities that provide economic benefits to our customers who have adopted, or plan to adopt, more sustainable practices. This year, we announced our participation in Leading Harvest, conducted a Low Carbon Feedstock pilot, and trialed a carbon market program. We also updated Machine Analyzer to include the carbon emissions from fuel consumption.
Differentiated Power Solutions	<p>13 CLIMATE ACTION</p> 	In our effort to deliver products that align with our 2030 Leap Ambition goal of reducing Scope 3, upstream and downstream CO ₂ e emissions. We remain focused on solutions that will continue to meet the power needs required in those unique ecosystems. We know that a singular technology will not be the solution across our entire portfolio of products, so ensuring that each product line has the optimal solution is our goal.
Extending the Product Lifecycle Through ReLife	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 	The ReLife program strengthens our environmental commitments while allowing customers to extend the usage of their machines with a lower total cost of ownership.
Waste Intensity	<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 	For FY23, we targeted opportunities throughout our facilities to reuse wood.
Operational GHG Emissions—Scope 1 & 2	<p>13 CLIMATE ACTION</p> 	John Deere has validated Science Based Targets to reduce our Scope 1 and 2 GHG emissions by an additional 50% by 2030, with fiscal year 2021 serving as the baseline. We'll aim to accomplish this through efficiency gains in operations and facilities processes, and by using even more renewable electricity and fuels.

2023 UN SDG INDEX

Feature Story	SDG	Connection Point
Upstream GHG Emissions—Scope 3, Category 1		<p>Engaging our supply base is crucial to our success in reducing upstream greenhouse gas (GHG) emissions. We are encouraged that approximately 65% of our key suppliers by spend are measuring and publicly reporting certain categories of their emissions.</p>
Building Global Talent Pipeline		<p>At every Deere location around the world, we focus our efforts and strategies on both finding the best talent and building a pipeline of candidates prepared to support our future. This approach is firmly linked to our mission for employees to choose their own paths and build their own capabilities by gaining the necessary experience, skill-building opportunities, career planning, and leadership development necessary to map out a successful future at Deere.</p>
Early Development of STEM Talent		<p>John Deere’s commitment to development extends far beyond the talent in our ranks and also includes youth within our home communities. Why? We know the power of education to expand opportunities, generate wealth, and affirm human dignity, and we believe everyone deserves a high-quality education. That’s why in 2021 the John Deere Foundation made a public commitment to ensure equitable access to education to at least one million marginalized youth in our home communities by 2030.</p>
Our Higher Purpose in Action	 	<p>In 2023, our employees volunteered a record 250,000 hours to support nearly 5,000 nonprofit organizations around the world. For their volunteerism and personal giving, John Deere employees also earned nearly \$9 million in rewards from the John Deere Foundation, another record. We work to amplify the voices of our customers and neighbors. In 2023, we collaborated with AI Roker Entertainment to create a documentary titled “Gaining Ground: The Fight for Black Land” as part of our LEAP (legislation, education, advocacy, and production systems) Coalition. The documentary, “Gaining Ground”, spread awareness on the injustice in Black farming in America and the devastating impact of heirs’ property – property passed to family members by inheritance, usually without a will or proper estate planning. Through our other documentary of the year – “Odd Hours, No Pay, Cool Hat” – Deere and the National Volunteer Fire Council (NVFC) shine a spotlight on the critical role volunteer firefighters and emergency responders play while also calling upon others to replenish their shrinking ranks.</p>
Creating Opportunity From the Ground Up	  	<p>Healthy soil produces healthy crops, which feed healthy people, who create livelihoods, enrich food systems, and protect ecosystems. Because of the fundamental importance of soil health, particularly in sustaining and uplifting millions of the world’s most vulnerable smallholder farmers, the John Deere Foundation supports the work of One Acre Fund and The Nature Conservancy®. Through soil health, agroforestry, and conservation efforts, these organizations work to ensure that the land will provide for farmers and all of us today and into the future.</p>
Our Foundation Over Time	  	<p>Our commitment remains evident in our most recent series of grants, totaling \$19 million, to eliminate hunger by increasing access to food, uplifting resource-constrained farmers, and supporting the global food system. Awarded to World Food Program USA, One Acre Fund, and The Nature Conservancy, these are the three largest grants in the foundation’s history and strengthen John Deere’s commitment to creating a world in which food is a moral right for all.</p>

2023 GRI STANDARDS INDEX (GRI)

GRI Standard	GRI Disclosure	Deere and Company Response
2-1	Organization details	Deere & Company is a publicly traded company listed on the New York Stock Exchange. Deere's headquarters are located in Moline, Illinois USA Refer to our Worldwide Locations for countries of operation.
2-2	Entities included in the organization's Business Impact Reporting	Refer to our 2023 10-K Report .
2-3	Reporting period, frequency, and contact point	Deere & Company reports annually in accordance with our fiscal year. Refer to Page 62, Reporting Scope & Issuance in our 2023 Business Impact Report . Contact Lauren Harbaugh for questions about the report or reported information.
2-4	Restatements of information	Refer to footnotes for Sustainability Metrics in the 2023 Business Impact Report Data Book .
2-5	External assurance	Refer to the 2023 Business Impact Report Data Book .
2-6	Activities, value chain, and other business relationships	Refer to our 2023 10-K Report .
2-7	Employees	Refer to our 2023 10-K Report .
2-8	Workers who are not employees	Refer to our 2023 10-K Report .
2-9	Governance structure and composition	Refer to our 2024 Annual Meeting & Proxy Statement .
2-10	Nomination and selection of the highest governance body	Refer to our 2024 Annual Meeting & Proxy Statement .
2-11	Chair of the highest governance body	Refer to our 2024 Annual Meeting & Proxy Statement .
2-12	Role of the highest governance body in overseeing the management of impacts	Refer to Pages 54–55 Sustainability Governance in our 2023 Business Impact Report .
2-13	Delegation of responsibility for managing impacts	Refer to Pages 54–55 Sustainability Governance in our 2023 Business Impact Report .
2-14	Role of the highest governance body in Business Impact Reporting	Refer to Pages 54–55 Sustainability Governance in our 2023 Business Impact Report .
2-15	Conflicts of interest	Refer to our 2024 Annual Meeting & Proxy Statement .
2-16	Communication of critical concerns	Refer to Pages 54–55 Sustainability Governance in our 2023 Business Impact Report .
2-17	Collective knowledge of the highest governance body	Refer to our 2024 Annual Meeting & Proxy Statement .
2-18	Evaluation of the highest governance body's performance	Refer to our 2024 Annual Meeting & Proxy Statement .
2-19	Remuneration policies	Refer to our 2024 Annual Meeting & Proxy Statement .
2-20	Process to determine remuneration	Refer to our 2024 Annual Meeting & Proxy Statement .
2-21	Annual total compensation ratio	Refer to our 2023 10-K Report .
2-22	Statement on sustainable development strategy	Refer to Pages 4–5, CEO Letter; Page 7, Leap Ambitions; and Page 53, Reporting Priorities and Strategy in our 2023 Business Impact Report . Refer to Sustainability Reporting Priorities and Strategy .
2-23	Policy commitments	Refer to Pages 54–55, Sustainability Governance and Page 61 for John Deere Policies in our 2023 Business Impact Report.

2023 GRI STANDARDS INDEX (GRI)

GRI Standard	GRI Disclosure	Deere and Company Response
2-24	Embedding policy commitments	Refer to Pages 54–55 Sustainability Governance in our 2023 Business Impact Report .
2-25	Process to remediate negative impacts	Refer to Page 61, John Deere Policies in our 2023 Business Impact Report and Code of Ethics .
2-26	Mechanisms for seeking advice and raising concerns	Refer to Page 60, Compliance and Page 61, John Deere Policies in our 2023 Business Impact Report .
2-27	Compliance with laws and regulations	Refer to Page 60, Compliance and Page 61, John Deere Policies in our 2023 Business Impact Report .
2-28	Membership associations	Refer to Page 61, Political Engagement in our 2023 Business Impact Report and U.S. Political Contributions .
2-29	Approach to stakeholder engagement	Refer to Sustainability Reporting Priorities and Strategy .
2-30	Collective bargaining agreements	Refer to our 2023 10-K Report . Refer to our Sustainability Metrics in our 2023 Business Impact Report Data Book .
3-1	Process to determine material topics	Refer to Page 53 in our 2023 Business Impact Report and Sustainability Reporting Priorities and Strategy .
3-2	List of material topics	Refer to Page 53 in our 2023 Business Impact Report and Sustainability Reporting Priorities and Strategy .
3-3	Management of material topics	Refer to our 2023 Business Impact Report .
201-1	Direct economic value generated and distributed	Refer to our 2023 Annual Report and 2023 Business Impact Report .
201-2	Financial implications and other risks and opportunities due to climate change	Refer to our 2023 Taskforce on Climate-related Financial Disclosures in the 2023 Business Impact Report Data Book .
201-3	Defined benefit plan obligations and other retirement plans	Refer to our 2023 10-K Report .
201-4	Financial assistance received from government	Refer to our 2023 10-K Report .
203-1	Infrastructure investments and services supported	Refer to our 2023 Annual Report and 2023 Business Impact Report .
203-2	Significant indirect economic impacts	Refer to our 2023 Annual Report and 2023 Business Impact Report .
204-1	Proportion of spending on local suppliers	Refer to our 2023 10-K Report and Page 59, Supply Management in our 2023 Business Impact Report .
205-1	Operations assessed for risks related to corruption	Refer to Page 60, Compliance in our 2023 Business Impact Report .
205-2	Communication and training about anti-corruption policies and procedures	Refer to Page 60, Compliance in our 2023 Business Impact Report .
205-3	Confirmed incidents of corruption and actions taken	Refer to Page 60, Compliance in our 2023 Business Impact Report and Sustainability Metrics in our 2023 Business Impact Report Data Book .
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Refer to our 2023 10-K Report .
301-1	Materials used by weight or volume	Refer to our 2023 CDP Response .
301-2	Recycled input materials used	Refer to our 2023 CDP Response .

2023 GRI STANDARDS INDEX (GRI)

GRI Standard	GRI Disclosure	Deere and Company Response
301-3	Reclaimed products and their packaging materials	Refer to Pages 28–29, Extending the Product Lifecycle Through Relife in our 2023 Business Impact Report.
302-1	Energy consumption within the organization	Refer to our 2023 CDP Response .
302-2	Energy consumption outside of the organization	Refer to our 2023 CDP Response .
302-3	Energy intensity	Refer to our 2023 CDP Response .
302-4	Reduction of energy consumption	Refer to our 2023 CDP Response .
302-5	Reductions in energy requirements of products and services	Refer to our 2023 CDP Response .
303-1	Interactions with water as a shared resource	Refer to Page 35, Water Intensity in our 2023 Business Impact Report and Environmental Management .
303-2	Management of water discharge-related impacts	Refer to Page 35, Water Intensity in our 2023 Business Impact Report and Environmental Management .
303-3	Water withdrawal	Refer to our 2023 CDP Response .
303-4	Water discharge	Refer to our 2023 CDP Response .
303-5	Water consumption	Refer to our 2023 CDP Response .
304-2	304-2 Significant impacts of activities, products, and services on biodiversity	Refer to Page 18, Operations Center Optimization ; Pages 20–21 Smarter Spraying Tech Expansion Covers More Ground (And Crops) ; and Pages 46–48, Creating Opportunity From the Ground Up in our 2023 Business Impact Report.
305-1	Direct (Scope 1) GHG emissions	Refer to our 2023 CDP Response .
305-2	Energy indirect (Scope 2) GHG emissions	Refer to our 2023 CDP Response .
305-3	Other indirect (Scope 3) GHG emissions	Refer to our 2023 CDP Response .
305-4	GHG emissions intensity	Refer to our 2023 CDP Response .
305-5	Reduction of GHG emissions	Refer to our 2023 CDP Response .
305-6	Emissions of ozone-depleting substances (ODS)	Refer to our 2023 CDP Response .
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	Refer to our 2023 CDP Response .
306-1	Waste generation and significant waste-related impacts	Refer to Page 34, Waste Intensity in our 2023 Business Impact Report and waste data in the 2023 Business Impact Report Data Book . Refer to Environmental Management .
306-2	Waste by type and disposal method	Refer to Page 34, Waste Intensity in our 2023 Business Impact Report and waste data in the 2023 Business Impact Report Data Book . Refer to Environmental Management .
306-3	Waste generated	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book.
306-4	Waste diverted from disposal	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book.

2023 GRI STANDARDS INDEX (GRI)

GRI Standard	GRI Disclosure	Deere and Company Response
306-5	Waste directed to disposal	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book .
308-1	New suppliers that were screened using environmental criteria	Refer to Page 59, Supply Chain Management in our 2023 Business Impact Report .
308-2	Negative environmental impacts in the supply chain and actions taken	Refer to Page 59, Supply Chain Management in our 2023 Business Impact Report .
401-1	New employee hires and employee turnover	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book .
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Refer to Benefits .
401-3	Parental leave	Refer to Benefits .
403-1	Occupational health and safety management system	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-2	Hazard identification, risk assessment, and incident investigation	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-3	Occupational health services	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-4	Worker participation, consultation, and communication on occupational health and safety	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-5	Worker training on occupational health and safety	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-6	Promotion of worker health	Refer to Benefits .
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-8	Workers covered by an occupational health and safety management system	Refer to Page 50, Safety in our 2023 Business Impact Report .
403-9	Work-related injuries	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book .
403-10	Work-related ill health	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book .
404-1	Average hours of training per year per employee	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book .
404-2	Programs for upgrading employee skills and transition-assistance programs	Refer to Pages 39–41, Building our Global Talent Pipeline in our 2023 Business Impact Report .
404-3	Percentage of employees receiving regular performance and career development reviews	Refer to Pages 39–41, Building our Global Talent Pipeline in our 2023 Business Impact Report .
405-1	Diversity of governance bodies and employees	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book .
405-2	Ratio of basic salary and remuneration of women to men	Refer to our 2024 Annual Meeting & Proxy Statement .

2023 GRI STANDARDS INDEX (GRI)

GRI Standard	GRI Disclosure	Deere and Company Response
406-1	Incidents of discrimination and corrective actions taken	Refer to Page 60, Compliance in our 2023 Business Impact Report and Sustainability Metrics in our 2023 Business Impact Report Data Book.
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Refer to Sustainability Metrics in our 2023 Business Impact Report Data Book.
408-1	Operations and suppliers at significant risk for incidents of child labor	Refer to Page 49, Human Rights and Page 59, Supply Management in our 2023 Business Impact Report.
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Refer to Page 49, Human Rights in our 2023 Business Impact Report.
413-1	Operations with local community engagement, impact assessments, and development programs	Refer to Page 44–45, Our Higher Purpose , Page 46–48 Creating Opportunity From the Ground Up , and Page 48, Our Foundation Over Time in our 2023 Business Impact Report.
413-2	Operations with significant actual and potential negative impacts on local communities	Refer to Page 44–45, Our Higher Purpose , Page 46–48 Creating Opportunity From the Ground Up , and Page 48, Our Foundation Over Time in our 2023 Business Impact Report.
414-1	New suppliers that were screened using social criteria	Refer to Page 59, Supply Management in our 2023 Business Impact Report.
414-2	Negative social impacts in the supply chain and actions taken	Refer to Page 59, Supply Management in our 2023 Business Impact Report.
415-1	Political contributions	Refer to Page 61, Political Engagement in our 2023 Business Impact Report and U.S. Political Contributions .
416-1	Assessment of the health and safety impacts of product and service categories	Refer to Product Safety .
416-2	Incidents of noncompliance concerning the health and safety impacts of products and services	Refer to Product Safety .
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Refer to Page 58, Cybersecurity & Data Privacy in our 2023 Business Impact Report.

FOOTNOTES

¹ Reflects the number of unique acres with at least one operational pass documented in the John Deere Operations Center™ in the past 12 months. Updated methodology for more precise measurements of an acre in 2022.

² Documentation of multiple production steps and the use of digital tools to complete multiple, value creating activities over a 12 month period.

³ Reflects the number of Deere & Company engaged acres that include incorporation of two or more sustainable John Deere technology solutions or sustainable practices over a 12-month period. This is a dynamic definition as new technologies and sustainable practices are developed. Current examples of sustainable technology solutions include AutoTrac™, Section Control, Harvest Smart™, and See & Spray™ solutions. Sustainable practices vary by region but include practices such as cover cropping and conservation tillage methods. We updated the methodology in 2023 for a more accurate measurements of acres.

⁴ Grade management adoption rate is based on crawlers, motor graders, and excavators.

⁵ Reporting methodology changed from 2021 due to changes with in-field data collection processes and crop applied weightings. Crop protection efficiency, nitrogen use efficiency, and customer CO₂e emissions are based on per unit of output.

⁶ Estimated average nitrogen usage and yield across a representative global sample of corn, wheat, canola, and cotton fields as of October 2023.

⁷ Estimated average pesticide usage and yield across a representative global sample of corn, soybean, wheat, canola, and cotton fields as of October 2023. CPU is amount of pesticides applied (kg) multiplied by an environmental risk factor.

⁸ Estimated average CO₂e of fertilizer, pesticide, and fuel emissions across a representative global sample of corn, soybean, wheat, canola, and cotton fields as of October 2023.

⁹ Estimated values. John Deere's sustainable content goal incorporates two material types into product parts and components: recycled and renewable. Recycled material is that which has been reintroduced as a new material and therefore been given a second life, like recycled steel. Renewable content is biobased and represents a recurring source found in nature, including options such as soybean oil and plant fibers like rice hull or hemp. The recyclable content goal is aimed at increasing the number of parts that have an avenue for recyclability at the end of the machine's useful life and thus can be used again as a different product.

¹⁰ Rates are per 100 employees. Data associated with the operation of Wirtgen Group entities is not included in the Near Miss Frequency Rate metric.

¹¹ Apex Companies, LLC has verified greenhouse gas (GHG) emissions data in accordance with the ISO 14064-3: Greenhouse gases — Part 3: Specification with guidance for the validation and verification of GHG statements assurance standard and water, waste, and safety data in accordance with the ISAE 3000 Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information assurance standard. For more information on assurance, see page 33 of the Data Book.

¹² The base year of fiscal year (FY) 2021 was chosen based on the strategic launch of the Leap Ambitions that span from their announcement in the FY 2021 Leap Ambition Report to FY 2026 and FY 2030. The Leap Ambitions include Deere's greenhouse gas (GHG) emission reduction goals for Scope 1, 2, and 3. Deere has elected to report its GHG emissions on an operational control basis, as defined by the GHG protocol. Deere's current policy includes incorporating acquisitions and updating baseline information within 24 months of an acquisition for Scope 1 and 2 GHG Emissions.

¹³ For the purposes of Deere's public SBTi goal, 50% reduction of Scope 1 and 2 CO₂e emissions goal is based on Scope 2 market-based methodologies based on WRI Scope 2 Guidance. Reporting for Scope 1 and 2 GHG Emissions is based on GHG protocol.

¹⁴ For the purposes of Deere's public SBTi goal, Deere uses the GHG Protocol Scope 3 Technical guidance to derive which Scope 3 GHG emissions are relevant and significant. Deere defines relevant as a Scope 3 category in which Deere's value chain generates emissions and significance as a Scope 3 category where applicable emissions contribute at least five percent to Deere's overall Scope 3 footprint. Based on this criterion and a review of Deere's Scope 3 emissions assessment (derived from the WRI Scope 3 Evaluator tool), Scope 3 Categories 1 and 11 are significant. Scope 3 emissions are calculated in reference to the GHG Protocol for Scope 3 Category 1 and Category 11.

¹⁵ Scope 3 Category 1 is calculated using an inflation-adjusted spend based model, with commodity averages, consistent with Science Based Targets Initiative's requirements. All metrics now include data from Wirtgen Group entities and the factories associated with Deere's former joint venture with Deere-Hitachi (2022 and 2021 are restated metrics).

¹⁶ Scope 3 Category 11 GHG emissions are calculated using the Well to Wheels (WTW) method, consistent with Science Based Targets Initiative's requirements.

¹⁷ The conversion factors used for combustion (e.g., natural gas) use the higher heating values (HHV) published by the EPA in the 40 CFR Parts 86, 86, and 89. This is consistent with the GHG Protocol Stationary Combustion Guidance. The latest-available version of emission factors referenced or recommended by the GHG Protocol are used.

¹⁸ For a discussion of John Deere's approach to fuel economy and emissions, please see the Deere & Company 2023 Form 10-K, pages, 10, 18, 19, 22, and 23. This reflects model-rated and sales-weighted fuel efficiency for John Deere 8 Series Tractors sold in North America during fiscal year 2022.

¹⁹ Methodology updated to align with reuse for waste reduction strategic Leap Ambition. Due to rounding, certain metrics do not add.

²⁰ Data associated with the operation of Wirtgen Group entities is not included.

²¹ Data is associated with the average of Deere's employees over a 12-month fiscal year period

²² Data includes all separations (retirements, involuntary, and voluntary).

²³ Global salaried employees only.

²⁴ Metrics are calculated on the basis of the 11 members of the Board of Directors as of October 31, 2023.

²⁵ U.S. employees only.

²⁶ This metric represents the percent of total hotline reports investigated and closed in the following categories: concerns of harassment or discrimination, threats or physical violence, employment law or policy violations, and retaliation.

²⁷ This metric represents the percent of total hotline reports investigated and closed in the following categories: accounting or financial misconduct or legal/regulatory violation.

²⁸ This metric represents the percent of total hotline reports investigated and closed in the following categories: theft or misuse of company resources; conflicts of interest; and bribery, corruption, or improper gifts or entertainment.

²⁹ Manufacturing correlates to definition in our Form 10-K.

³⁰ Data includes direct, logistics, and aftermarket Deere suppliers. Wirtgen Group entities are included in the reported 2023 metric.

³¹ Diverse Supplier Sourcing Spend includes all Tier 1 U.S.-based suppliers for indirect, direct, logistics, and aftermarket.

³² Precedence Research, *Biofuels Market*, <https://www.precedenceresearch.com/biofuels-market> (2023).

³³ Emission factors based on Argonne National Laboratory's GREET model.

³⁴ Energy.Gov, *Ethanol vs. Petroleum-Based Fuel Carbon Emissions*, <https://www.energy.gov/eere/bioenergy/articles/ethanol-vs-petroleum-based-fuel-carbon-emissions> (2023).

³⁵ CA.gov, *Renewable diesel is increasingly used to meet California's Low Carbon Fuel Standard*, <https://www.eia.gov/todayinenergy/detail.php?id=37472> (2023).

ASSURANCE STATEMENT



ASSURANCE OPINION DECLARATION SUSTAINABILITY METRICS

To: The Stakeholders of Deere & Company

Apex Companies LLC (Apex) was engaged to conduct an independent assurance of the greenhouse gas (GHG) emissions, fuel and energy, water, waste, and safety data ("Sustainability Metrics") reported by Deere & Company ("Deere") for the periods stated below. This assurance opinion declaration applies to the related information included within the scope of work described below.

The determination of the Sustainability Metrics is the sole responsibility of Deere & Company. Deere & Company is responsible for the preparation and fair presentation of the Sustainability Metrics statement in accordance with the criteria. Apex's sole responsibility was to provide independent assurance on the accuracy of the Sustainability Metrics reported, and on the underlying systems and processes used to collect, analyze and review the information. Apex is responsible for expressing an opinion on the Sustainability Metrics based on the assurance.

Boundaries of the reporting company Sustainability Metrics covered by the assurance:

- Operational Control
- Worldwide

Type of GHGs: CO₂, N₂O, CH₄, HFCs

Exclusions: SF₆; Sustainability Metrics associated with the operation of Unimil (Fiscal Year 2021 only); Wirtgen Group Near Miss Frequency Rate

Sustainability Metric	Fiscal Year 2023	Fiscal Year 2022	Fiscal Year 2021	Protocol
Energy Consumption (GJ)	13,300,000 ¹	13,770,000 ¹	12,890,000 ¹	Deere Internal Protocol
Percentage Grid Electricity	44% of total electricity ¹	42% of total electricity ¹	43% of total electricity ¹	SASB RT-IG-130a.1.2
Percentage Renewable Electricity	61% of total electricity ¹	59% of total electricity ¹	41% of total electricity ¹	Deere Internal Protocol
Percentage Renewable Energy	27% of total energy ¹	25% of total energy ¹	17% of total energy ¹	SASB RT-IG-130a.1.3
Scope 1 and 2 Market-Based Emissions (metric tons CO ₂ e)	690,000 ¹	716,700 ¹	811,000 ¹	WRI/WBCSD GHG Protocol
Scope 1 Emissions (metric tons CO ₂ e)	410,000 ¹	418,200 ¹	403,300 ¹	WRI/WBCSD GHG Protocol
Scope 2 (market based) Emissions (metric tons CO ₂ e)	280,000 ¹	298,500 ¹	407,700 ¹	WRI/WBCSD GHG Protocol
Scope 3 (Category 1 and Category 11) metric tons CO ₂ e	97,383,000 ²	98,224,000 ²	101,262,000 ²	WRI/WBCSD GHG Protocol Value Chain (Scope 3)
Scope 3, Category 1 – Purchased Goods & Services (metric tons CO ₂ e)	8,263,000 ²	8,322,000 ²	8,142,000 ²	WRI/WBCSD GHG Protocol Value Chain (Scope 3)
Scope 3, Category 11 Use of Sold Products (metric tons CO ₂ e)	89,120,000 ²	89,902,000 ²	93,120,000 ²	WRI/WBCSD GHG Protocol Value Chain (Scope 3)
Freshwater consumption intensity at water-stressed manufacturing locations (cubic meters/production output hour)	0.078 ²	0.071 ²	0.070 ²	Deere Internal Protocol
Water Consumption (cubic meters)	26,300,000 ¹	23,900,000 ¹	23,900,000 ¹	Deere Internal Protocol
Waste Intensity (kilograms/production output hour)	3.55 ²	3.63 ²	3.21 ²	Deere Internal Protocol
Total Waste (kilograms)	130,100,000 ¹	133,900,000 ²	109,500,000 ²	Deere Internal Protocol
Hazardous Waste (kilograms)	14,400,000 ¹	14,900,000 ²	11,700,000 ²	Deere Internal Protocol
Non-Hazardous Waste (kilograms)	115,800,000 ¹	119,000,000 ²	97,800,000 ²	Deere Internal Protocol
Total Recordable Incident Rate (per 100 employees)	2.08 ²			Deere Internal Protocol
Lost Time Frequency Rate (per 100 employees)	0.65 ²			Deere Internal Protocol
Near Miss Frequency Rate (per 100 employees)	13.58 ²			Deere Internal Protocol
Fatality Rate (per 100 employees)	0.001 ²			Deere Internal Protocol

¹ Apex provided reasonable assurance of metric

² Apex provided limited assurance of metric



Data and information supporting the Scope 1 GHG emissions, Scope 2 GHG emissions, fuel, energy, waste, water and safety statements, were historical in nature.

Data and information supporting the Scope 3 GHG emissions statement were in some cases estimated rather than historical in nature

Period covered by Sustainability Metrics Assurance:

- Fiscal Year 2023: November 1, 2022 to October 31, 2023
- Fiscal Year 2022: November 1, 2021 to October 31, 2022
- Fiscal Year 2021: November 1, 2020 to October 31, 2021

Criteria against which assurance was conducted:

- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas (GHG) Protocol Corporate Accounting and Reporting Standard (Scope 1, 2 and Biogenic Fuels)
- WRI/WBCSD GHG Protocol Corporate Value Chain Accounting & Reporting Standard (Scope 3)
- Sustainability Accounting Standards Board (SASB) Industrial Machinery & Goods Sustainability Accounting Standard Version 2018-10 (Renewable Energy)
- Deere & Company Internal Company Protocol

Reference Standard:

Our work was conducted against Apex's standard procedures and guidelines for external Verification of Sustainability Reports, based on current best practice in independent assurance. Apex procedures are based on principles and methods described in the International Standard on Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information (effective for assurance reports dated on or after Dec. 15, 2015), issued by the International Auditing and Assurance Standards Board and ISO 14064-3: Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas statements.

Level of Assurance and Qualifications:

- Reasonable (Scope 1 and 2 GHG Emissions, Total Energy, Renewable Energy, Waste (Fiscal Year 2023))
- Limited (Scope 3 GHG Emissions, Safety, Waste (Fiscal Year 2021 and Fiscal Year 2022), Waste Intensity, Water Intensity)
- This assurance used a materiality threshold of ±5% for aggregate errors in sampled data for each of the above indicators
- Intergovernmental Panel on Climate Change AR6 Global Warming Potentials (GWP) were used for the majority of the GHG inventory; however, AR5 GWP were used to calculate emissions from refrigerants.

Sustainability Metrics Assurance Methodology:

Evidence-gathering procedures included but were not limited to:

- Interviews with relevant personnel of Deere & Company;
- Review of documentary evidence produced by Deere & Company;
- Virtual Safety Audits of Product Engineering Center (PEC) and Dubuque Works manufacturing facilities;
- Review of Deere & Company data and information systems and methodology for collection, aggregation, analysis and review of information used to determine Fiscal Year 2023 GHG, fuel, energy, waste and water emissions during site visits to John Deere Horicon Works Plant; John Deere Product Engineering Center; John Deere Des Moines Works Plant; John Deere Iberica, Getafe Plant; John Deere Werke Mannheim Plant; and John Deere Werke Zweibrücken Plant;
- Review of Deere & Company data and information systems and methodology for collection, aggregation, analysis and review of information used to determine Fiscal Year 2022 GHG emissions, fuel, energy and water consumption during site visits to Wirtgen Hamm Plant, Wirtgen Vogele Plant and Wirtgen Windhagen Plant;
- Review of Deere & Company data and information systems and methodology for collection, aggregation, analysis and review of information used to determine Fiscal Year 2021 GHG emissions, fuel, energy and water consumption during a site visit to John Deere Waterloo Foundry, and remote visits to JJD, Monterey Plant and ISG - Torreon; and
- Audit of sample of data used by Deere & Company to determine Sustainability Metrics.



Assurance Opinion:

Based on the assurance process and procedures conducted regarding the Subject Matter, we conclude that:

- The Energy, Water Consumption, Total Waste (Fiscal Year 2023 only), Non-hazardous Waste (Fiscal Year 2023 only), Hazardous Waste (Fiscal Year 2023 only), and Scope 1, Scope 2 GHG Emissions assertions shown above are materially correct and are a fair representation of the data and information;
- There is no evidence that the Scope 3 (Purchased Goods and Services and Use of Sold Products) GHG emissions are not materially correct and are not a fair representation of the data and information;
- There is no evidence that the Waste Intensity, Water Intensity, Waste (Fiscal Years 2021 and 2022 only), and Safety metrics are not materially correct and are not a fair representation of the data and information; and
- Deere & Company has established appropriate systems for the collection, aggregation and analysis of relevant environmental information, and has implemented underlying internal assurance practices that provide a reasonable degree of confidence that such information is complete and accurate.

Statement of independence, impartiality and competence

Apex is an independent professional services company that specializes in Health, Safety, Social and Environmental management services including assurance with over 30 years history in providing these services.

No member of the assurance team has a business relationship with Deere & Company, its Directors or Managers beyond that required of this assignment. We conducted this assurance independently and to our knowledge there has been no conflict of interest.

Apex has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

The assurance team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of Apex's standard methodology for the assurance of environmental data.

Attestation:

Megan O'Neil, Lead Assuror
ESG Program Manager
Apex Companies, LLC

David Reilly, Technical Reviewer
ESG Principal Consultant
Apex Companies, LLC

January 10, 2024

This assurance opinion declaration, including the opinion expressed herein, is provided to Deere & Company and is solely for the benefit of Deere & Company in accordance with the terms of our agreement. We consent to the release of this declaration to the public or other organizations but without accepting or assuming any responsibility or liability on our part to any other party who may have access to this declaration.

EEO-1

U.S. EQUAL EMPLOYMENT OPPORTUNITY COMMISSION (EEOC) 2022 EMPLOYER INFORMATION REPORT (EEO-1 COMPONENT 1)				EEOC Standard Form 100 (SF 100) Revised 08/2023 OMB Control Number: 3046-0049 Expiration Date: 08/31/2024			
SECTION A – TYPE OF REPORT CONSOLIDATED REPORT							
SECTION B – EMPLOYER IDENTIFICATION							
OFS COMPANY ID 1004915		EMPLOYER NAME DEERE AND COMPANY					
ADDRESS ONE JOHN DEERE PLACE			CITY/TOWN MOLINE		STATE IL	ZIP CODE 61265	
SECTION C – HEADQUARTERS OR ESTABLISHMENT-LEVEL IDENTIFICATION (if applicable)							
HQ/ESTABLISHMENT-LEVEL UNIT ID		HEADQUARTERS OR ESTABLISHMENT-LEVEL NAME					
HEADQUARTERS OR ESTABLISHMENT-LEVEL ADDRESS			CITY/TOWN		STATE	ZIP CODE	
SECTION D – EMPLOYER IDENTIFICATION NUMBER (EIN) 362382580							
SECTION E – EMPLOYER FILING ELIGIBILITY <input checked="" type="checkbox"/> YES (Employer Is Eligible to File) <input type="checkbox"/> NO (Employer Is Not Eligible to File) <input type="checkbox"/> EMPLOYER NO LONGER IN BUSINESS							
SECTION F – FEDERAL CONTRACTOR DESIGNATION (if applicable) Unique Entity ID (UEI): FNSWEDARMK53 <input type="checkbox"/> YES (Single-Establishment Employer is Federal Contractor) <input checked="" type="checkbox"/> YES (Multi-Establishment Employer is Federal Contractor) <input checked="" type="checkbox"/> YES (Headquarters is Federal Contractor) <input type="checkbox"/> YES (Non-Headquarters Establishment is Federal Contractor) <input checked="" type="checkbox"/> YES (One or More Non-Headquarters Establishments is Federal Contractor)							
SECTION G – NAICS INFORMATION 333111 - Farm Machinery and Equipment Manufacturing							

JOB CATEGORIES	SECTION H – WORKFORCE DEMOGRAPHIC DATA														Row Total
	Race/Ethnicity														
	Hispanic or Latino		Not Hispanic or Latino												
	Male	Female	Male					Female							
White			Black or African American	Asian	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	Two or More Races	White	Black or African American	Asian	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	Two or More Races		
Executive/Senior Level Officials and Managers	9	0	138	10	12	0	1	0	42	5	3	0	0	0	220
First/Mid-Level Officials and Managers	83	49	3013	96	214	2	9	14	1121	45	86	2	4	4	4742
Professionals	270	134	6026	198	756	1	27	74	2016	119	216	0	12	30	9879
Technicians	18	6	288	12	75	1	3	3	160	3	41	0	1	2	613
Sales Workers	2	0	85	6	1	0	0	0	17	4	1	0	0	0	116
Administrative Support Workers	21	31	229	20	8	0	3	6	434	36	12	1	3	7	811
Craft Workers	36	0	1889	23	3	1	11	12	36	2	1	0	0	0	2014
Operatives	645	204	8720	1132	108	8	137	127	2082	470	29	6	46	50	13764
Laborers and Helpers	1	1	9	17	1	0	0	0	1	3	2	0	0	0	35
Service Workers	0	0	8	0	0	0	0	0	6	2	1	0	0	0	17
CURRENT 2022 REPORTING YEAR TOTAL	1085	425	20405	1514	1178	13	191	236	5915	689	392	9	66	93	32211
PRIOR 2021 REPORTING YEAR TOTAL															
SECTION I – WORKFORCE SNAPSHOT PERIOD 12/15/2022 - 12/31/2022															
SECTION J – HEADQUARTERS OR ESTABLISHMENT-LEVEL COMMENTS (optional) Not Applicable															