TCFD-aligned Climate-Risk Disclosure

Rahr Corporation (North American business units)
2025 Climate Disclosure

Executive Summary

Rahr Corporation's ("Rahr") North American business units serve as a global malt supplier with operations that depend heavily on agricultural inputs, water, and energy—three pillars that are increasingly shaped by climate variability and climate policy. As a result, climate-related risks and opportunities are becoming more material to the company's operations, long-term resilience, cost structure, and competitive positioning.

This disclosure follows the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and represents Rahr's initial foundation for structured climate-related reporting. The report establishes an early-stage governance and strategy framework for addressing climate risk, outlines emerging management processes, and positions the company for future alignment with requirements for climate-related disclosure. Data and practices on Rahr's facilities outside of North America (United Kingdom, New Zealand, and Australia) are not available for this disclosure but those facilities are subject to domestic climate-related regulations.

Rahr faces both physical and transition climate risks. Physical risks include variability in barley yield and quality driven by drought, temperature shifts, and long-term changes in the viability of key growing regions. Transition risks include exposure to carbon pricing, evolving energy markets, changing customer expectations, and increasing sustainability reporting obligations.

In parallel, climate change presents meaningful opportunities for Rahr. The company's investments in renewable and low-carbon energy enhance resilience and reduce exposure to future carbon regulation. This includes ownership and operation of Koda Energy, which generates biomass-based combined heat and power (CHP) to supply carbon-neutral energy to our Shakopee malting facility. Future opportunities include leveraging circularity initiatives, regenerative agriculture partnerships, Scope 3 product differentiation, and innovative uses of by-products and waste streams to support decarbonization.

Rahr has not yet set public, quantitative climate targets, although does face reporting requirements for several large customers who do have climate targets. The company has completed a baseline Scope 1 and 2 greenhouse gas (GHG) inventory for CY24 to inform target-setting and next steps. Known actions, including the use of biomass CHP to power malting kilns and export electricity, already position the company to reduce emissions over time.

This document is Rahr's first step toward a structured approach to climate disclosure. The company intends to improve data quality, expand scenario analysis, formalize risk management processes, and further integrate climate considerations into governance and strategic planning.

1. Governance

1.1 Board Oversight of Climate-Related Risks and Opportunities

Rahr's Board of Directors oversees climate-related matters as part of its broader mandate for strategic, operational, and sustainability oversight. While the Board has not yet established a dedicated climate or sustainability committee, it regularly receives information that includes climate-relevant topics. Quarterly agronomy updates provide insight into barley yields, supply stressors, and early indicators of physical climate risk. Additionally, a quarterly sustainability summary prepared by the Sustainability Lead is delivered to the CEO and then to the Board. This report covers progress on sustainability initiatives, customer requests related to carbon and climate disclosures, and efforts related to emissions reporting.

Currently, Board oversight of climate matters is primarily informational and has the authority to suggest a redirect of efforts as necessary. While the Board receives updates there are not yet formalized expectations, directives, or policies related specifically to climate-related risks and opportunities. As climate considerations grow in financial significance, Rahr intends to formalize Board oversight.

1.2 Management's Role in Assessing and Managing Climate-Related Risks

Management responsibilities related to climate risk are distributed across several functions. The Sustainability Lead coordinates emissions data collection, manages customer sustainability reporting, tracks climate-related regulatory developments, and leads internal climate-relevant analyses. The agronomy team is central to identifying and assessing physical climate risks by monitoring growing conditions in major barley regions and advising on sourcing adjustments as climatic conditions evolve. The commercial team identifies transition risks and opportunities through regular customer engagement, particularly as large brewers require emissions data, evidence of sustainable practices, and compliance with decarbonization goals.

Recognizing the need for strong cross-functional alignment the company plans to continue operating a number of sustainability working groups who collaborate with larger brewer customers. These groups will support the development of risk identification processes, facilitate internal collaboration, and act as a bridge to the Board.

2. Strategy

2.1 Climate-Related Risks and Opportunities Identified Over the Short, Medium, and Long Term

Rahr faces a range of climate-related risks and opportunities that affect its agricultural supply chain, transportation of raw materials, operations, energy systems, and customer relationships. As an agricultural ingredients company, Rahr's most significant physical climate risks relate to variability in barley quality and yield driven by drought, heat stress, changing precipitation patterns, soil health, and long-term shifts in the viability of major barley-growing regions. Recent droughts in the Canadian Prairies and northern United States have, for example, contributed to barley quality variability. Over the longer term, climatic trends suggest that optimal barley-producing regions may continue shifting north and west, with implications for logistics, grower relationships, and sourcing and production infrastructure.

In addition to these supply-side risks, Rahr is exposed to transition risks associated with decarbonization policies, energy-market changes, and evolving customer expectations. Carbon pricing in Alberta and British Columbia along with U.S. grid decarbonization and natural-gas market volatility may influence long-term energy costs. Large brewing

customers continue to raise expectations regarding sustainability reporting, Scope 3 emissions disclosure, plastics reduction, and sustainable agriculture practices.

At the same time, Rahr has several meaningful climate-related opportunities. The company already operates with approximately 60 percent renewable energy across its three malt plants, primarily through biomass-based combined heat and power (CHP) generation. Planned biofuel processing improvements are expected to increase this figure to approximately 75 percent for North American operations, with a target to reach 100 percent renewable energy for Scope 1 and 2 by 2040. At the Shakopee, MN headquarters, renewable electricity generation and procurement ensures a carbon-neutral electricity profile. Additional opportunities include the potential development of a CHP project at Rahr's Alberta facility, future adoption of biofuel technologies, and a Level 3 Energy Audit underway at the British Columbia plant to identify efficiency measures and potential rooftop solar installations in partnership with BC Hydro.

Circularity initiatives also present strategic opportunities. Rahr maintains a zero-landfill status for malt production, directing all organic by-products to animal feed, soil applications, or biomass energy production. The company also operates robust water-reuse systems, with about 35% percent of wastewater being reused across all three malt facilities. In one instance, wastewater irrigates 2,600 acres of farmland in Alberta via pipeline. These initiatives reduce waste-disposal impacts, strengthen grower relationships, and enhance resilience to climate-related water stress.

Further climate-transition opportunities arise through packaging and plastics innovation. Rahr has tested a targeted malt-bag take-back program, for example. These efforts align with emerging customer expectations around circular packaging and Scope 3 emissions mitigation.

Rahr's agronomy programs further strengthen climate resilience in its supply chain. The company supports grower adoption of the Cool Farm Tool for emissions and soil-health assessment and collaborates with growers to achieve the Sustainable Agriculture Initiative (SAI) Platform's Farm Sustainability Assessment Gold certification. Eighty-two Canadian growers and roughly thirty U.S. growers have achieved SAI Gold status through third-party verification. Many growers also adopt low-till or no-till cultivation to help sequester carbon, participate in extensive soil-sampling programs, and utilize variable-rate fertilizer application to improve nutrient use efficiency and reduce greenhouse-gas emissions. These practices can help stabilize yields during climate variability, reduce Scope 3 emissions, and align with customer expectations for sustainable, lower-impact agricultural ingredients.

Rahr is also monitoring the development of winter barley varieties being advanced by the University of Minnesota for malting applications. Winter barley differs from spring barley in its planting and maturation cycle, often maturing earlier and avoiding late-season heat stress or drought conditions that increasingly affect spring-planted crops. Although adoption will depend on agronomic performance, malting characteristics, and grower uptake, winter barley research represents a meaningful opportunity for climate-resilient barley supply under future warming scenarios.

Together, these risks and opportunities reflect both the challenges posed by climate change and the significant potential for Rahr to strengthen resilience, operational efficiency, and customer alignment through targeted investments and partnerships.

2.2 Impact of Climate-Related Risks and Opportunities on Rahr's Business, Strategy, and Financial Planning

Climate-related risks and opportunities influence several aspects of Rahr's business model, including sourcing strategies, operational planning, agronomy investments, customer engagement, and long-term capital allocation. Variability in barley yield and quality, driven by drought, heat stress, and shifting precipitation patterns, affects procurement strategy and requires Rahr to adjust sourcing regions, strengthen grower partnerships, and maintain transloading flexibility to access climate-resilient barley-growing areas. As climate trends over decades continue to push barley production further north and west, sourcing decisions, storage planning, and logistics networks may need to evolve, with implications for both operating costs and long-term production structures. This evolving balance informs capital-allocation decisions, long-term planning for facility utilization, and assessments of where future efficiency or resilience investments may be most effective. While Shakopee remains a core operational hub, climate-related supply dynamics underscore the importance of maintaining an adaptable and regionally flexible production model.

Transition-related risks also affect Rahr's strategic direction. Carbon pricing in Alberta and British Columbia increases energy and operational costs, while U.S. grid decarbonization may introduce additional price dynamics for electricity and natural gas. Increasing customer expectations for emissions data, sustainable agriculture practices, and circular packaging also influence commercial positioning and require improved internal systems to manage data and reporting. These pressures are shaping how Rahr prioritizes process improvements, technology investments, and cross-functional coordination across sustainability, agronomy, and commercial teams.

Opportunities for renewable energy expansion and energy efficiency also play a growing role in strategic planning. Biomass-based CHP at the Shakopee facility already provides cost-stable, low-carbon heat and electricity, reducing near-term exposure to fossil-fuel volatility. The State of Minnesota plans for a carbon-neutral grid by 2040, which influences how much Rahr will concentrate renewable energy investments in Minnesota. As the planned biofuel processing improvements raise the renewable energy share across operations, and as potential future projects such as the Alberta CHP system and BC rooftop solar are evaluated, Rahr will incorporate these considerations into capital planning and long-term decarbonization strategy. These initiatives may reduce operating costs, support future emissions-reduction commitments, and strengthen alignment with customer sustainability expectations.

Water reuse and circularity initiatives also influence financial and operational planning. Rahr's wastewater reuse systems reduce freshwater withdrawals and waste-disposal costs while supporting local agricultural resilience. Zero-landfill status for malt production by-products reduces environmental liabilities and creates opportunities for beneficial reuse. These achievements can enhance customer relationships and may influence future capital investments in circular systems at additional sites.

Climate-smart agriculture practices also have meaningful strategic implications. Adoption of the Cool Farm Tool, SAI Gold certification, no-till and low-till cultivation, extensive soil sampling, and variable-rate fertilizer practices strengthen the resilience and quality of Rahr's barley supply during periods of climate variability. These programs contribute to long-term supply stability, reduce Scope 3 value-chain emissions, and position Rahr as a preferred supplier to brewers with strong sustainability commitments. As customer requirements continue to evolve, these agricultural programs will play an increasingly central role in procurement strategy and customer engagement.

Finally, packaging circularity initiatives, including the malt bag take-back pilot, provide opportunities for product differentiation and customer-aligned sustainability offerings. As downstream buyers emphasize responsible packaging, these initiatives may shape product-development choices and influence Rahr's positioning in climate-conscious markets.

Overall, climate-related risks and opportunities are becoming increasingly relevant for Rahr's business and strategy. While the company is in the early stages of formal climate integration, its existing efforts in renewable energy, circularity, agronomy, and resource efficiency already influence operational decisions, customer relationships, and long-term planning. As Rahr expands its data systems and governance processes, climate considerations will play a growing role in financial planning and strategic direction.

2.3 Climate Resilience and Scenario Considerations

At present, Rahr has not completed a quantitative climate scenario analysis aligned with different rates of warming. However, the company is already implicitly applying scenario thinking as it responds to observed climate trends, invests in energy resilience, and adjusts sourcing strategies.

3. Risk Management

Rahr is at an early stage of formalizing climate-related risk management. Physical climate risks are primarily identified through agronomy monitoring and seasonal crop assessments. Transition risks are surfaced through customer engagement, emissions reporting, and tracking of energy markets and regulatory developments.

Management's climate risk mitigation efforts have so far been project-specific, including the development of biomass CHP at Koda Energy to serve the Shakopee facility, inclusion of alternative fuels such as Emerald Ash Borer affected waste wood by 2027, and the construction of systems to import barley from more climate-resilient growing regions. The company also invests considerable effort in compiling emissions data to meet customer and regulatory demands.

4. Metrics and Targets

Rahr tracks a growing set of climate-related metrics across energy use, emissions, resource efficiency, circularity, and agricultural sustainability. While the company is still formalizing its comprehensive climate-disclosure framework, it already maintains a full Scope 1 and Scope 2 greenhouse-gas (GHG) inventory for internal management purposes. Rahr intends to strengthen the consistency, documentation, and public-reporting readiness of these metrics over time as it aligns with emerging frameworks such as ISSB S2.

4.1 Scope 1 and Scope 2 Greenhouse Gas Emissions

Rahr has already developed a Scope 1 and Scope 2 GHG emissions inventory covering its three North American malt plants and associated operations.

1. Scope 1 & 2 Emissions in CY24 in all North American operations: 80.53k tonnes of CO2e
    a. Scope 1 emissions: 56.31k tonnes CO2e
    b. Scope 2: 24.21k tonnes CO2e
2. As a subset of total Scope 1 and 2 emissions in North America, our malting facilities had 79.09k tonnes of Scope 1 & 2 emissions in CY24
    a. Scope 1 emissions from malting: 56.31 tonnes CO2e
    b. Scope 2 emissions from malting: 22.78 tonnes CO2e

3. % of operational energy use that is renewable in 2025: ~60%
4. Target: 100% of operational energy use that is renewable by 2040

4.2 Circularity and Resource Efficiency Indicators

Rahr's North American facilities also track and manage the circular use of resources.

1. Landfilled processing waste, across all North American business units: 0 tons
2. Wastewater reuse across all three North American malt plants: 35%

4.3 Climate-Smart Agriculture Indicators

Rahr's agronomy program generates several metrics relevant to climate resilience, Scope 3 emissions, and customer expectations. As of 2024:

1. 82 Canadian growers in Rahr's sourcing network have achieved SAI Gold certification through third-party audits
2. 30 U.S. growers have achieved SAI Gold, with progress expanding year-over-year
3. Our growers use the Cool Farm Tool to quantify emissions and soil-health indicators

4.4 Future Development of Metrics and Targets

Rahr intends to expand its reporting framework as its baseline systems mature. Near-term development areas include:

1. Development of Scope 3 emissions estimates (already underway)
2. Water-use and water-reuse indicators across all major facilities

Once its full emissions baseline is established, Rahr anticipates beginning to set formal targets in areas such as renewable energy, efficiency measures, water reuse, circular packaging, and climate-smart agriculture participation.

Appendix A: Climate-Related Risks and Opportunities

Category	Risk or Opportunity	Description	Time Horizon	Likelihood	Business Impact
Physical Risk	Drought impacts on barley quality	Increasing drought frequency reduces barley plumpness and affects malt quality, particularly in the Prairies and Upper Midwest.	Short–Medium	High	Supply constraints; higher sourcing costs; crop variability.
Physical Risk	Shifts in barley-growing regions	Long-term warming and precipitation changes shift optimal barley production north and west.	Medium–Long	High	Adjusted sourcing strategy; logistics changes; infrastructure needs.
Physical Risk	Climate variability affecting supply reliability	Barley supply is affected by inconsistent moisture, heat stress, and precipitation changes.	Medium	High	Sourcing disruptions; need for diversified supply.
Transition Risk	Carbon pricing and energy regulation	Carbon taxes in Alberta and British Columbia influence energy-related operating costs.	Medium	Medium	Higher OpEx; pressure to decarbonize energy systems.
Transition Risk	Customer sustainability requirements	Major brewers request emissions data, SAI/CFT reporting, circularity metrics, and evidence of sustainable sourcing.	Short–Medium	High	Higher reporting burden; increased need for data systems.
Transition Risk	Plastics and packaging expectations	Customers expect reductions in single-use plastics and improved packaging circularity.	Short–Medium	High	Packaging redesign; Scope 3 expectations; higher OpEx; opportunities for differentiation.

Opportunity	Renewable energy expansion (from 60% today to 100% goal)	Renewable heat and electricity from biomass CHP, RECs, and future biofuel processing increase resilience and reduce carbon exposure.	Medium–Long	High	Lower energy volatility; cost stability; alignment with climate goals.
Opportunity	Wastewater reuse & zero-landfill operations	Wastewater reuse and complete diversion of malt by-products from landfill.	Short–Long	High	Water resilience; waste cost avoidance; community relationships.
Opportunity	Energy efficiency & potential BC solar	A Level 3 energy audit and solar feasibility study offer new decarbonization pathways.	Medium	Medium	Efficiency gains; reduced future emissions; improved resilience.
Opportunity	Packaging circularity	Bag return pilots strengthen circular packaging offerings.	Short–Medium	High	Customer alignment; lower Scope 3 impacts.
Opportunity	Climate-smart barley sourcing (SAI Gold & Cool Farm Tool)	SAI Gold certification and Cool Farm Tool adoption improve supply resilience, soil health, and reduce Scope 3 emissions.	Medium–Long	High	Supply stability; meet customer requirements; lower emissions.
Opportunity	Winter barley development for malting	University of Minnesota is developing winter barley varieties that mature earlier and avoid late-season heat/drought, improving supply resilience.	Medium–Long	Medium	Supply stability; diversification of sourcing windows.

Risk (Physical/ Strategic)	Shifts in production balance between facilities	Climate-driven changes in barley-growing regions may gradually alter the optimal utilization of Rahr's Shakopee and Alberta facilities.	Medium–Long	Medium	May influence long-term asset utilization and capital planning.