Red Wing Aviation

2023 TCFD Report

south pole
The Climate Company

RWA
RED WING AVIATION

Details

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Acronyms and abbreviations

BAU	business as usual
CAMO	Compliance Monitoring Manager
CO2	carbon dioxide
CO2e	carbon dioxide equivalent
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
EXCO	Executive Committee
FDM	Flight Data Monitoring
FSB	Financial Stability Board
GHG	greenhouse gas
NZ	net zero
RCP	Representative Concentration Pathway
R&O	risks and opportunities
SAF	Sustainable Aviation Fuel
SAG	Safety Action Group
SRB	Safety Review Board
SSP	Shared Socioeconomic Pathways
TCFD	Task Force on Climate-Related Financial Disclosures
US	United States

01 Introduction

In 2023, Red Wing Aviation continued with its sustainability and climate resilience efforts, summarised and presented in its second Task Force on Climate-related Financial Disclosures (TCFD) Report. The second report includes analysis based on new climate scenarios and an updated analysis of the current climate landscape. One of North America's largest private jet charter companies, Red Wing Aviation remains committed to better understanding its climate risks and opportunities, integrating these into its strategy, and increasing resilience to the future challenges presented by climate change.

Mark Carney and Michael Bloomberg played a key role in establishing the TCFD framework in 2017 by the Financial Stability Board (FSB). The aim of the FSB was to assist companies in effectively communicating climate-related information across every sector and market. Currently supported by over 4000 stakeholders, this framework relies on four key pillars: governance, strategy, risk management, and metrics and targets.

The first section of this report introduces the Governance structures that focus on identifying and managing climate-related topics across the company, followed by the Strategy section which lays out how climate risks and opportunities are identified, analysed and addressed strategically. The third section of the report describes the Risk Management processes by which Red Wing Aviation assesses and integrates climate-related risks and opportunities into its internal risk management systems. In the final section, Red Wing Aviation's Metrics and Targets are presented, including the greenhouse gas (GHG) emissions calculated for 2022, and the initiatives in place to reduce emissions and increase resilience to climate risks.

02 Governance

Vista level governance structure is attributed to each individual company within the Vista group, including Red Wing Aviation. The Executive Committee (EXCO), the Chief Sustainability Officer representing the Sustainability Department, the Safety Review Board (SRB) and the Safety Action Group (SAG) are the main bodies in Vista's climate governance structure with the ultimate responsibility for overseeing climate-related issues falling on the Executive Committee (EXCO), which is in charge of shaping Vista's strategy, from creating opportunities for customers to offset their emissions, to investing in sustainable aviation fuels. The EXCO monitors risks and opportunities, including those related to climate change (e.g., changes in carbon pricing regulations) and approves Vista's climate strategy and targets.

The Sustainability Department reports to the Chief Sustainability Officer and is responsible for implementing and monitoring Vista's climate strategy and targets and developing the GHG accounting and TCFD report, supported by an external consultancy.

In 2023, Vista is further working on integrating sustainability issues into its governance structure, by introducing the role of a Chief Sustainability Officer, with the existing overall governance structure undergoing changes with the goal of achieving further improvements.

The Safety Review Board involves functional or senior management and has the objective of providing a forum to discuss safety issues. The SRB meets at least twice per year. The Safety Action Group reports to and takes strategic direction from the SRB. The composition of the SAG varies based on the process under analysis, but meetings are always attended by members of the Safety Department and by personnel with expertise in the relevant areas. The SAG meets quarterly or more often if deemed necessary.

The Sustainability Department oversees the development of the yearly GHG accounting and TCFD reports and overall sustainability reporting, as well as the implementation and monitoring of Vista's climate strategy and targets. The diagram below summarises how these departments are structured.

Figure 1. Vista's sustainability governance structure

03 Strategy

Following TCFD guidance, Red Wing Aviation assessed two types of risks and opportunities (R&O): physical and transition. Physical R&O are defined as those that affect companies due to changes in the climate, for example more frequent and/or intense heatwaves, extreme rainfall events, and flooding. The impact of physical risks can translate into operational interruptions and delays as well as damage to infrastructure and aircraft. Transition R&O, meanwhile, are associated with the economic and policy shifts necessary to mitigate climate change and transition to a low-carbon economy, such as regulatory and policy changes, and technological advancements. The impact of transition risks can be translated into increased costs of investment in green technologies, while opportunities can be harnessed in the form of enhanced reputation and consumer confidence due to strong sustainable offerings.

Red Wing is analysing climate related-risk and opportunities for the short, medium and long-term. The time horizons are defined as follows:

- Short: Current day (baseline)
- Medium: 2030
- Long term: 2050

3.1 Physical risks

The analysis focused on the company's strategic locations, including 18 airports representing 50% of legs flown in the year 2022, as well as key assets considered important from an operational perspective (for example, offices, training and maintenance facilities). Future exposure to physical risks was evaluated by assessing the future changes as projected under a high emissions scenario typically referred to as a 4°C scenario[1]. Under this scenario, GHG emissions continue rising until the end of the century, with little mitigation efforts. As a result, physical risks become more severe, intense, and/or frequent, with the exact magnitude of the change depending on the region and risk.

A qualitative rating was assigned to each physical risk, varying from very low to very high, according to its projected degree of change from historical conditions until a medium-term (2030) and a long-term (2050 onwards) time horizon.

In line with the analysis of other companies within the Vista group, Red Wing Aviation analysed the physical risks to which companies had reported the highest impacts based on historical records, complemented by physical risks that sector publications consider key risks.

The physical risks selected for the analysis were: extreme temperatures, storms and tropical cyclones, riverine and coastal flooding, extreme rainfall, thunderstorms and hail, frost, snowfall, high winds, and clear-air turbulence.

The key impacts of these hazards as well as the risk rating based on the results of the climate scenario analysis are shown in the table below.

[1] 4°C refers to the temperature change by the end of the century compared to preindustrial levels. The correct scientific name for the scenarios are Representative Concentration Pathway (RCP) 8.5 or the new Shared Socioeconomic Pathway (SSP) 5-8.5

Strategy

Table 1. Summary of the selected physical risks, and their potential impacts and risk levels under two time horizons under a 4°C scenario.

Hazard	High-level impact	2030	2050
Extreme temperatures	Extreme temperatures can affect Red Wing's operations by decreasing an aircraft payload capacity as well as potentially causing delays in takeoff and landing due to melting runways. Airports in Florida are projected to have the largest increases in annual maximum temperatures and hot days		
Riverine flooding	Flooding caused by the overflowing of rivers can lead to operational interruptions and road closures. Airports in New York, as well as the main airport and office in Wisconsin, are projected to have the highest inundation heights		
Coastal flooding	Coastal flooding can lead to operational interruptions and road closures. Very low inundation heights are recorded and projected for all of Red Wing Aviation's key airports and offices		
Extreme rainfall	Extreme precipitation can impact Red Wing's operations by causing flooding and potentially causing interruption of operations and closure of roads nearby airports. Airports located in Northeast United States and their office in Wisconsin are projected to have the highest increases in extreme rainfall amount over one day and five consecutive days.		
Thunderstorms	Thunderstorms and lighting strikes can damage aircraft. In the long term, airports located in the Southeast United States are projected to experience the biggest increases in spring, while those in the Northern United States, in summer.		
Storms and tropical cyclones	Storms can affect aircraft take-off, cause delays and cancellations, or even a total interruption of ground operations. Severe storms can cause damage to office and airport infrastructure, increasing operational costs. Airports located along the East Coast in the United States are projected to experience increases in storm strength.		
Frost	Frost can damage aircraft. Decreases in the number of cold days (Tmin<°0C) were found in all of Red Wing Aviation key airports and offices.		
Extreme snowfall	Extreme snowfall can cause damage to aircraft, as well as operational delays by interrupting takeoff and landing. Except for Aspen, Colorado, decreases in heavy snowfall days were found in all locations.		
High winds	High winds can affect take-off and landing, cause delays, or even total interruption of operations, as well as aircraft damage. No changes in the highest and the average wind speeds were found at the locations.		
Clear air turbulence	Sudden severe turbulence can harm crew and passengers, cause aircraft damage, and increase operational costs due to safety inspections. Marked increases in severe clear air turbulence are projected in North America in the long term.		

Very Low | Low | Moderate | High | Very High

The hazards that are projected to have the highest change in the future under a 4°C scenario, particularly in the long term, are extreme temperatures, thunderstorms and clear air turbulence. Other hazards, such as frost days, high winds, and extreme snowfall, are projected to experience decreases in both the medium and the long term at almost all of the locations analysed. The number of facilities at risk of riverine and coastal flooding are projected to remain stable overtime.

Red Wing Aviation will continue monitoring the climate physical risks material to the company. Currently, the impacts of physical climate risks are mitigated by measures already in place. For example, when a tropical cyclone is projected to impact a city where the company operates, aircraft are safely parked and put out of harm's way, meanwhile, there is an increase in flights booked leaving the affected areas before the tropical cyclone hits, so the impact of the extreme weather events is not linked to a decrease in bookings. Flooding and extreme rainfall also have a limited impact due to the flexible nature of private flights where flights can be booked to transport passengers out of a certain place before a storm or flooding warning. By continuously monitoring the weather, Red Wing Aviation reduces the exposure of its aircraft and avoids its damage, which is the biggest source of financial impact due to weather events. More information about how these risks are monitored and managed can be found in the Risk Management section.

3.2 Transition risks and opportunities

The transition risks and opportunities selected for the analysis were: price and availability of biofuels and other sustainable fuels, customer demand, ticket prices, low carbon technologies aimed to reduce emissions, and policies impacting the private airline industry.

The analysis focused on Red Wing Aviation's operations in North America. Future exposure to transition risks and opportunities was primarily assessed under a 1.5°C scenario[2], with consideration of current data and trends under a business as usual scenario (BAU), reflecting current policies and trajectories.

Similarly to physical risks, a qualitative rating was assigned to each transition risk and opportunity according to the strength and direction of its change relative to current conditions for a medium-term (2030) and a long-term (2050 onwards) time horizon.

A summary of the selected risks, potential impacts and risk levels, can be seen in Table 2.

The hazards that are projected to have the highest change in the future, particularly under a 1.5°C scenario are those concerning the biofuels market, policy changes, and low-carbon technologies. Red Wing Aviation continues to monitor the latest developments in carbon policy and the use of SAFs, while in the long term, the company acknowledges that it is crucial to increase efficiency through the adoption of new, low-carbon technologies and scaling up the production and adoption of SAFs.

Compared to physical risks, Red Wing Aviation finds itself more exposed to transition risks, which are continuously monitored and assessed by internal stakeholders. Given the nature of its operations as a private aircraft operator, Red Wing Aviation is exposed to constantly evolving regulations and developments regarding emerging technologies, sustainable fuels, and carbon taxes. More information about how these risks are monitored and managed can be found in the Risk Management section.

[2] The scenario assumptions are based on the International Energy Agency's 2022 World Energy Outlook and sector-specific projections and plans

Table 2. Summary of the selected transition risks, and their potential impacts and risk levels under two time horizons under a business as usual and a 1.5°C scenario.

Hazard	Scenario	High-level impact	US	
			2030	2050
Biofuels market	BAU	As SAF is considered the main component to reach NZ emissions in this sector, its consumption is expected to increase gradually to 2030, with an accelerated demand thereafter and up to 2050 and expecting higher consumption particularly in the 1.5°C degrees scenario, based on aviation plans. Policies and regulations on fuel consumption and blending mandates (such as the Renewable Fuel Standard) are expected to make SAF the most common air transport fuel in the long term.		
	1.5°C			
Customer preferences and behaviours	BAU	Although demand for air travel is expected to grow in the medium and long term, in advanced economies the pace of growth is expected to be lower. Additionally, the increase of alternative, more sustainable transport modes such as high-speed rail which will provide increased land-based connectivity at reduced travel times, is expected to decrease air travel demand in advanced economies.		
	1.5°C			
Air-flight tickets market	BAU	Increased carbon tax-related policies could lead to a decrease in air-flight ticket demand. In advanced economies, carbon pricing schemes to cover emissions from the airline sector in domestic and international flights are expected to increase ticket prices, especially for short routes. Likewise, special carbon prices per CO2 emission per mile travelled, could drive a decrease in demand for air travel, especially for non-frequent travellers.		
	1.5°C			
Low-carbon technologies	BAU	In the long term, technologies such as electric engines, hydrogen engines and aircraft unconventional configurations are expected to support decarbonisation of the sector, especially for domestic flights and smaller aircraft where change is expected in a shorter period, however, their contribution to avoiding emissions will be significantly lower than those avoided using alternative mode of transport and SAF.		
	1.5°C			
Policy changes	BAU	The US has ambitious aviation decarbonisation targets that are likely to be supported by stronger policy measures, as evidenced by future mandatory participation in the CORSIA global offsetting scheme.		
	1.5°C			

Risk

Very Low | Low | Moderate | High | Very High

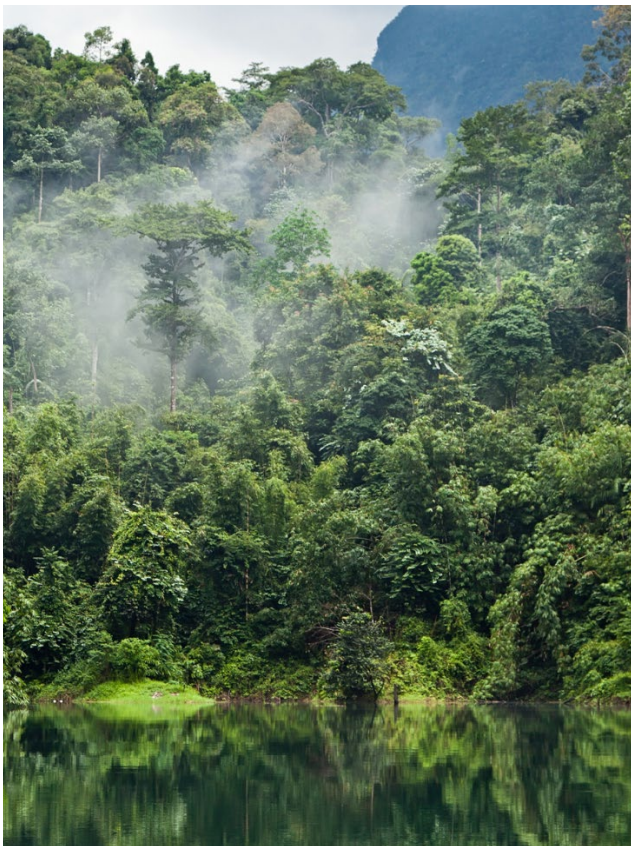
Opportunity

Very Low | Low | Moderate | High | Very High

04 Risk Management

This section explores how climate-related risks and opportunities are detected, assessed, and integrated into Red Wing Aviation's risk management processes.

In order to assess the future changes and impacts of physical and transition R&O, scenario analysis was conducted following a four-step approach. Firstly, a long list of possible climate-related risks and opportunities was prepared, taking into account key hazards previously identified for Red Wing Aviation, assessing any relevant updates in the landscape and reviewing the latest aviation publications. Secondly, company-specific data including historical records and financial impacts of past events was taken into account to narrow down which R&O are most likely to impact Red Wing Aviation in the future. Thirdly, a working session was prepared with key Vista stakeholders with oversight of operations across all companies, including members from the Sustainability, Finance, and Operations departments, to confirm the short list and align on prioritisation and perceived impact to the company. The final step involved the assessment of the key risks using scenario analysis.



The Operations team at Red Wing Aviation actively manages physical risks associated with meteorological events as part of their day-to-day operations, undertaking daily reviews of weather conditions and communicating any potential risks to the duty manager. The pilots also conduct risk assessments, deciding whether to involve the maintenance team and take precautionary measures to protect the aircraft. For example, when strong wind gusts pose a threat to grounded aircraft, adjustments are made to prevent damage, such as reaching out to the maintenance team. In case of extreme events, such as severe flooding at critical airports, risks are escalated to the Executive Committee (EXCO) for further action.

To monitor risks that may affect flights, Red Wing Aviation implemented a Flight Data Monitoring (FDM) programme, which uses digital flight data from routine operations to identify, quantify, assess, and address operational risks. By automatically detecting risk events, the company can gather accurate and objective safety data, mitigating the chances of significant incidents or aircraft damage. The collected data is analysed to identify patterns and trends, supporting information reported by the flight crew and aiding in incident investigations, such as turbulence occurrences during flight routes. Red Wing Aviation also monitors fuel consumption to identify areas for improvement in current fuel-saving policies specific to their fleet. For a long term understanding of its physical risk exposure, Red Wing Aviation takes into account the results of the scenario analysis undertaken following the TCFD recommendations.

Any developments and changes in regulations are assessed and informed to the COO and any relevant department, such as Billing, Finance, or Operations. Updates on fuel regulations are monitored by the Quality or Maintenance teams, while changes in fuel prices are monitored and updated on a weekly basis and communicated to the EXCO and other competent departments. One additional measure to assess Red Wing Aviation´s evolving exposure to transition risks is to collaborate with South Pole, an external climate services provider, in the identification and analysis of any new risks. The goal of this ongoing process is to fully integrate climate-related risks and opportunities into Red Wing Aviation's internal processes.

Risk Management

Red Wing Aviation undertakes the following process to identify, assess, and manage risks:

01

Risk identification

Risk can be climate-related, or involve equipment, procedures, safety, etc.

02

Risk evaluation

The likelihood and severity of the risk is assessed. If the risk if found to be within Red Wing Aviation's safety performance criteria, it is accepted, if not, actions are taken to reduce it.

03

Risk mitigation

Action are taken to mitigate the risk.

04

Risk monitoring

Overseen by the EXCO, if action was taken, the mitigation actions continue to be monitored and reviewed to ensure their effectiveness.

Figure 2. Risk management process

05 Metrics and Targets

Since 2022 Red Wing Aviation has undertaken yearly assessments of greenhouse gas (GHG) inventories, adhering to the recommendations outlined in 'The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition' (GHG Protocol), alongside the accompanying 'Corporate Value Chain (Scope 3) Accounting and Reporting Standard'.

In line with best practices, Red Wing Aviation reports its Scope 1, Scope 2 and Scope 3 emissions.

- Scope 1:Emissions directly generated from sources owned or controlled by the company
- Scope 2:Emissions generated by the generation of purchased electricity
- Scope 3:Emissions indirectly generated as a result of the activities of the company from sources that the company does not own or control

Red Wing Aviation's total carbon footprint for the calendar year 2022 was calculated to be 29.8 tonnes of carbon dioxide equivalent (tCO2e). Both direct and indirect emissions were measured, and a breakdown by scope (Scope 1, Scope 2 and Scope 3) can be seen in Table 3.

Scope 1 has the highest contribution to the overall GHG emissions, accounting for 76.5% of the total footprint, followed by Scope 3 with 23.4% and Scope 2 with 0.1%.

Table 3. Total emissions for Scopes 1, 2, and 3 for Red Wing Aviation in the calendar years 2021 and 2022, in thousands of tCO2 eq

GHG Scope	2021	2022
Scope 1	3.7	22.5
Scope 2	0.04	0.04
Scope 3	5.9	7.2
Total	**9.6**	**29.8**

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