

Talon Air

2023 TCFD Report

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, Talon Air continued with its sustainability and climate resilience efforts, with the publication of its second Task Force on Climate-related Financial Disclosures (TCFD) Report released, based on new climate scenarios and an updated analysis of the current climate landscape. Talon Air 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 Talon Air assesses and integrates climate-related risks and opportunities into its internal risk management systems. In the final section, Talon Air'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 Talon Air. 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 SAG members change according to the type and area of interest of 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.

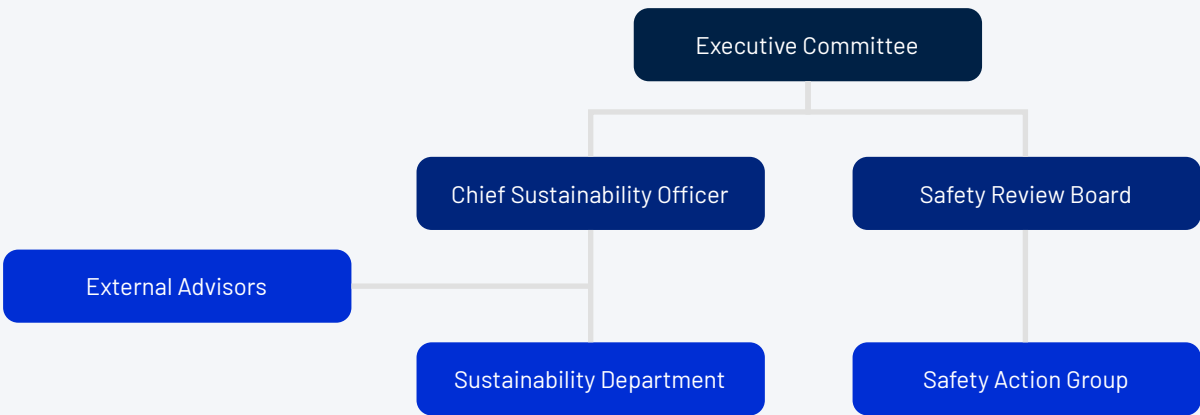


Figure 1. Vista’s sustainability governance structure

03 Strategy

Following TCFD guidance, Talon Air 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.

Talon Air 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 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 scenario¹. 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 members of the Vista group, Talon Air analysed the physical risks to which group 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

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 Talon Air's operations by decreasing an aircraft payload capacity as well as potentially causing delays in takeoff and landing due to melting runways. Airports in France, Spain, Italy, and Germany and Hong Kong 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 and Barcelona are projected to have the highest inundation depths.		
Coastal flooding	Coastal flooding can lead to operational interruptions and road closures. Airports in Amsterdam and Hong Kong are projected to have the highest inundation depths.		
Extreme rainfall	Extreme precipitation can impact Talon Air's operations by causing flooding and potentially causing interruption of operations and closure of roads nearby airports. Airports in Kuwait, Qatar, Saudi Arabia, United Arab Emirates, and Malaysia are projected to have the highest increases in extreme rainfall over one day and five consecutive days.		
Thunderstorms	Thunderstorms and lightning strikes can damage aircraft. In the long term, airports located in North America and northern and eastern Europe are projected to experience moderate to high increases.		
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 ($T_{min} < 0^{\circ}\text{C}$) were found in all of Talon Air's key airports.		
Extreme snowfall	Extreme snowfall can cause damage to aircraft, as well as operational delays by interrupting takeoff and landing. 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. Airports in North America and Europe are projected to have the largest increases in the long term.		



Strategy

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.

Talon Air 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 move passengers before a flooding warning. Turbulence is constantly monitored and avoided as part of flight safety. The impact of extreme temperatures is managed by avoiding scheduling flights at the peak hottest times of the day in the warmest locations.

By continuously monitoring the weather, Talon Air 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 Talon Air's operations in North America. Future exposure to transition risks and opportunities was primarily assessed under a 1.5°C scenario², 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. Talon Air 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, Talon Air 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, Talon Air 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

Strategy

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 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 for domestic and international flights are expected to increase ticket prices, especially in 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
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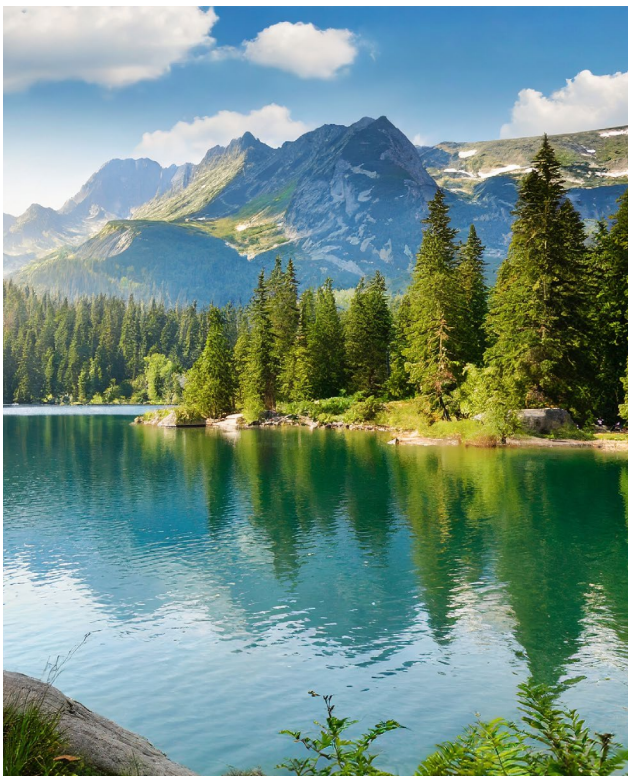
Opportunity

Very Low	Low	Moderate	High	Very High
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04 Risk Management

This section explores how climate-related risks and opportunities are detected, assessed, and integrated into Talon Air'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 Talon Air, 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 Talon Air 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 Talon Air 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, Talon Air 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. Talon Air 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, Talon Air 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 Talon Air'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 Talon Air's internal processes.

Talon Air undertakes the following process to identify, assess, and manage risks:



Figure 2. Risk management process



05 Metrics and Targets

Since 2022, Talon Air has undertaken yearly assessments of greenhouse gas 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, Talon Air 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

Talon Air's total carbon footprint for the calendar year 2022 was calculated to be 71,476 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 75% of the total footprint, followed by Scope 3 with 24.9% and Scope 2 with 0.1%.

Table 3. Total emissions for Scopes 1, 2, and 3 for Talon Air in the calendar year 2022, in thousands of tCO₂ eq

GHG Scope	2021	2022
Scope 1	52.3	53.6
Scope 2	0.2	0.08
Scope 3	99.5	17.8
Total	152	71.4



