

2020 Response to the Taskforce on Climate-related Financial Disclosures

Building resilience to climate change

Sydney Airport operates Australia's major gateway airport. It is an essential piece of regional and national infrastructure which supports the mobility and economic growth of the communities we serve.

Our operations deliver high levels of availability, reliability and resilience and we recognise climate change has the potential to affect our business through physical and transitional risks.

Australia entered the new decade facing an unprecedented bushfire crisis, followed by the global COVID-19 pandemic. While our efforts have focused on responding to immediate crises, we have continued to progress on actions to build our resilience towards climate change as the world transitions to lower carbon economies.

We are committed to reducing our emissions footprint in line with our commitments, improving our operational resilience and adapting to the predicted effects of a changing climate now and into the future.

TCFD Framework

In 2015, G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board (FSB) to review how the financial sector can take account of climate-related issues.

The FSB established the Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations for more effective climate-related disclosures.

In 2017, the TCFD released climate-related financial disclosure recommendations to help companies provide better information to support informed capital allocation.

The TCFD recommendations are structured around four thematic areas: governance, strategy, risk management, and metrics and targets. These are intended to connect and inform each other.

Sydney Airport has been a supporter of the TCFD since 2018 and has disclosed its climate change risk management in line with the TCFD reporting framework since that time.



Governance

The organisation's governance around climate related risks and opportunities

Strategy

The actual and potential impacts of the climate related risks and opportunities on the organisation's businesses, strategy and financial planning

Risk Management

The process used by the organisation to identify, assess, and manage climate-related risks.

Metrics and Targets

The metrics and targets used to access and manage relevant climate-related risks and opportunities.

Meeting our TCFD Roadmap

In 2020, we completed the activities in our 2018-2020 TCFD Roadmap, including considering more detailed scenarios. We began work to integrate scenario analysis into strategic planning and risk management and continued to consider third party mitigation strategies.

We continue to report metrics for assessing climate-related risks and opportunities.

Our new three-year roadmap, outlined below, continues to develop our reporting in line with the TCFD recommendations.

TCFD pillar	Actions	2021 2022 2023
Governance Further integrate climate consideration into strategic planning Conduct Board and leadership deep dives on climate change		
Strategy	Implement climate change resilience strategy Continue to integrate climate change considerations into business strategy Review climate risks and integrate into department risk plans	,
Risk management	Develop signposts to monitor changes in scenarios Understand potential financial impacts	
Metrics and targets	Develop medium and long-term climate targets	\rightarrow

Governance and oversight of climate change

Our Board oversees climate risk management and its potential to influence and inform corporate strategy and decision making.

The Board is supported by the Safety, Security and Sustainability Committee (SSS) which meets quarterly and has oversight of environmental and sustainability matters. The SSS Charter outlines its roles and responsibilities and includes climate change. The SSS receives briefings on the outcomes of our climate risk assessment and adaptation planning. Further support is provided by the Audit and Risk Committee which maintains oversight of risk management and internal controls.

Sydney Airport has an established team dedicated to managing our TCFD progress and monitoring material climate change issues. The team met several times this year to review controls and climate targets and to discuss climate developments relevant to our operating context. The team also advises the Executive Committee and our Board on climate risk planning, as well as emerging issues and trends that may impact the broader strategy.

The Sustainability and Environment teams are responsible for annual reporting, compliance reporting and initial risk assessment of climate related risks and opportunities.

Strategy

Scenario analysis

Sydney Airport uses scenario analysis as a tool to examine pathways for emerging trends, determine risks that we may likely face and help us understand our resilience as a business. Scenario analysis relies on assumptions of economical and technology shifts, commodity dependencies and weather forecasts. The use of these projections makes it difficult to predict with certainty which scenario might eventuate and therefore its outcomes are not considered definitive.

We see climate scenario analysis as a key control to identify and manage climate change risk. The scenarios are not intended to predict the future, but rather explore different possible futures and begin to understand our resilience as a business under these scenarios.

Recognising the systemic nature of climate impacts and the increasing momentum for decisive action this decade, in 2020 we expanded our scenario analysis to better understand the exposure of our assets to physical climate risks and to test the climate transition resilience of our business.

We use three scenarios based on Representation Concentration Pathways (RCPs) outlined in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report and International Energy Agency (IEA) scenarios outlined in the World Energy Outlook 2020.



A high emissions pathway where physical impacts increase over time, particularly the intensity and frequency of extreme events. Transition risks are limited in this scenario



Moderate transition

RCP 4.5 | IEA INDC 2.6°

A moderate emissions pathway with emissions peaking ~2040. Moderate physical and transition risks, with the potential for disorderly policy responses. Aligns to the Intended Nationally Determined Contributions (INDCs), the proposed post-2020 country actions on climate change under the Paris Agreement



Accelerated transition

RCP 2.6 | IEA Sustainable Development (1.5°-2°)

Low emissions pathway with emissions peaking ~2020 and rapidly declining. Requires implementation of ambitious global and local climate change policy.

These scenarios assume various degrees of warming by 2100 and include social, technological, economic and political developments considered plausible under each warming trajectory.

Given the global scale of the IPCC and IEA scenarios, physical and transition aspects of Sydney Airport's scenario analysis were further refined:

- through downscaled climate change modelling available through the Climate Change in Australia portal, developed by CSIRO and the Bureau of Meteorology, as well as the NSW and ACT Regional Climate Modelling (NARCliM) Project
- using inputs of global aviation forecasts from ATAG's Waypoint 2050 report and industry participation in ACI's Long Term Carbon Goal
- by assessing Australian transition pathways using the 2020 Climate Works Decarbonisation Futures report and the Federal Government's Technology Roadmap

This year, we looked at the potential economic impacts under each scenario to understand the potential impact to our business.

Business as usual

Under the business as usual climate change scenario, global emissions continue at current rates. The worst physical impacts of climate change are expected to be realised as temperatures rise and extreme weather events increase, with significant spending required on adaptation to protect cities. This may lead to disruptions to global supply chains where products are sourced from countries vulnerable to climate threats. Shifts in energy supply and demand patterns are anticipated, as is the increased incidence of disaster and disease related to extreme weather.

Changes to operating procedures at Sydney Airport may be required to adapt to more frequent extreme weather events under this scenario. More extreme weather events also have the potential to lead to disruption to operations and damage to infrastructure in and around the airport, and increased spending would be required to adapt assets to withstand the conditions.

Moderate transition

Under a moderate transition scenario, rapid decarbonisation is expected to be led by the market with government support. Demand for renewables is expected to increase as greater efforts are made to reduce emissions and very high energy efficiency standards are expected to be in place for all buildings. Changes in behaviour and consumer preferences are expected to drive emissions lower. Physical impacts of climate change are still realised, although to a lesser extent than under the business as usual scenario.

For Sydney Airport, we assume that developments on airport would be required to meet high energy efficiency standards under this scenario. While physical impacts are anticipated to be lower under this scenario, changes may still be required to operational procedures to adapt to more frequent extreme weather events. Improvements in aircraft efficiency are anticipated, driven by consumer demand for lower emissions travel.

Accelerated transition

Under an accelerated transition scenario, strong policy intervention will be present, which may include a price on carbon in markets around the world, with government policies supporting a global transition to a low carbon economy. It also anticipates strong investment in clean energy technologies as economic growth occurs in line with net zero emissions.

For Sydney Airport, an accelerated transition would see more efficient aircraft flying to Sydney fuelled by low emissions sustainable aviation fuels. New developments would be required to meet strict low carbon criteria. Equipment around the airport will be powered by low emissions fuels and renewable energy, supported by battery storage.

Climate-related risks and opportunities

We have identified climate change risk as significant in our annual reporting since 2017. It is also an area of focus under the Responsible Business and Planning for the Future pillars of our 2019-2021 sustainability strategy. It is included in our company-wide risk register and is subject to ongoing reviews to ensure relevancy and focus on risks associated with climate change and the transition towards a low carbon economy.

These risks have an inherent risk rating of medium over the medium term and high over the longer term.

Driver	Risk	Existing and future control/s
Physical risk		
Greater rainfall and storm frequency and intensity	Temporary airside disruptions due to flooding and damage on airport	 Airport design and location of critical infrastructure Airport Emergency Plan Regular inspections of airfield Efficient stormwater drainage systems Maintenance teams in place to repair damage and/or drainage failures Thunderstorm Warning System Airfield management e.g., temporary closure of taxiways and aprons
	Temporary landside disruption due to flooding and damage to metropolitan transport infrastructure	Integrated Operations Centre monitors transport network around the airportTraffic Management Centre liaison
Sea level rise and tidal intrusion	Temporary operational disruptions, increased frequency and duration of repair and maintenance activities	 Airport design and location of critical infrastructure Inspections of airfield and sea walls Efficient stormwater drainage systems Maintenance teams in place to repair damage and/or drainage failures
	Reduced land for future development capacity	- Considered in strategic planning
Higher temperatures and more severe	Increased staff and/or passenger medical incidents due to heat exposure	- Procedures in place for outdoor workers
heatwaves	More stringent biosecurity requirements and potential for disease outbreaks due to global increase of communicable diseases	- Airport Emergency Plan
	Increased cost and temporary disruption to airside and landside power supply due to increased energy demand during heatwaves	Back-up generators to maintain critical infrastructureEnergy efficiency initiativesOnsite generation

Driver	Risk	Existing and future control/s
Transition risk		
Legislative changes	Government climate change policy may limit air travel emissions, increase cost pass-through and change travel patterns, resulting in reductions in anticipated passenger volumes and associated revenue	Policy engagement and advocacySustainable Design GuidelinesConsideration in strategic planning
	Regulatory changes mandate zero carbon design and building standards, increasing development costs and delivery timeframes	
Decline in local and international environmental assets	Decline of environmental tourism and impact of climate (flood, drought, fire, dust) causes changes to international and domestic passenger volumes, reducing anticipated revenue	- Policy engagement and advocacy

Climate resilience strategy

Our sustainability strategy forms an integral part of our broader corporate strategy. A flagship program under our strategy is to build resilience in our assets and operations to the impacts associated with climate change, and to minimise the airport's emissions footprint. Climate-related risks and opportunities are also incorporated into the Airport Environment Strategy.

We review our commercial, operational, regulatory and financial risks, and uncertainties associated with operating Australia's busiest airport each year in our annual planning process. Climate change and its impact on operations has been identified as a material risk. Our Climate Risk Assessment and Adaptation Plan identifies climate-related risks and adaptation actions and sets out our management and monitoring approach.

Airport operations and infrastructure development must consider climatic conditions and technological shifts. During 2020, we updated our climate change resilience strategy to support the transition to a lower carbon economy. It focuses on four key elements:

Energy efficiency and carbon reduction	Asset adaptation and future proofing	Business resilience and carbon neutral growth	Advocacy for a low carbon economy
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The purpose of this strategy is to adequately respond to stakeholder expectations, drive emissions reductions and ensure Sydney Airport is physically, socially and economically resilient to the impacts of climate change. We see achieving this strategy as a contribution to the goals of the Paris Agreement.

Reviewing opportunities

Sydney Airport's contribution to climate change solutions will also present new opportunities. These include:

- lowering operating costs by reducing energy consumption and other efficiency initiatives
- supporting airline partners with electrification and low emission fuels infrastructure to improve industry emissions
- designing and building sustainable buildings to attract tenants
- integrating climate adaptation opportunities into community investment strategies to support the resilience of our communities
- enhancing our industry's response to climate change by engaging with stakeholders

We are members of Bioenergy Australia's Sustainable Aviation Fuel Alliance, together with airlines and biofuel producers, where we work to advance sustainable aviation fuel production, policy, education and marketing in Australia and New Zealand.

In October 2020, Sydney Airport assumed ownership of the airport's Jet Fuel Infrastructure (JFI), formerly known as Joint User Hydrant Installation (JUHI). Ownership of the JFI is a strategically important milestone. It provides greater control over future infrastructure and investment decisions and enhances our ability to influence the use of sustainable aviation fuel at Sydney Airport.

Climate risk controls

Carbon neutral by 2025

At Sydney Airport, we are on a pathway to be carbon neutral by 2025, in line with ACI's Airport Carbon Accreditation Scheme.

Our pathway considers various decarbonisation options ranging from energy efficiency, strategic sourcing of renewables, engagement and carbon offsets. A priority-based hierarchy is applied to ensure the transition provides flexibility in growth, a balanced risk portfolio and commercial competitiveness while striving to achieve carbon neutrality.

Our efforts to reduce our emissions and energy consumption is discussed in the 'Emissions and energy management' section of our Sustainability Report.



Energy efficiency



Renewable energy procurement



Onsite renewables



Carbon offsets



Engage and influence

We aim to implement cost effective energy saving opportunities which include:

- efficient equipment, materials and fixtures
- systems optimisation and monitoring to reduce energy use
- consumption behaviour and education

Renewable electricity is a major step to decarbonise our operations.

Use of electricity contributed about 93 per cent of operational emissions in 2020 Onsite renewable generation reduces the amount of non-renewable electricity Sydney Airport draws from the grid.

We currently have one rooftop solar installation on our P6 carpark.

Sydney Airport has identified a number of further potential onsite solar locations and will continue to work to increase our onsite generation

Carbon offsets that provide socioeconomic benefits will be used to offset emissions that can no longer be feasibly managed through our energy efficiency, renewable purchase and generation strategies.

We will continue to monitor and review the role offsets play in our neutrality pathway Although our boundary for carbon neutrality covers our Scope 1 and Scope 2 emissions, we aim to actively engage with airline and retail business partners to influence a reduction in emissions outside our operational control (Scope 3)

Asset resilience and adaptation

Adaptation measures can both lower our exposure and enable any opportunities resulting from changes in climate.

Our Climate Change Risk Assessment and Adaptation Plan considers adaptation themes based on airport best practice as well as our ability to control and influence action.

Climate resilience commitment	Future-planning and strategy	Rapid response and operations	Interdependent systems
Integrate Sydney Airport's position on climate resilience into decision making and investment	Integrate priority climate resilience responses into corporate strategy and planning	Understand risks and proactively manage operational disruptions to minimise impacts	Continue to enhance relationships with stakeholders to anticipate change and address critical system interdependencies

In 2020, we developed new Sustainable Design Guidelines which established minimum sustainability requirements for projects across the airport. These include a requirement to model a project's level of climate exposure using relevant climate variables such as increased rainfall or higher temperatures.

Under the Guidelines, the most extreme weather events identified in RCP 8.5 (3.2-5.4°C warming) are used to assess the worst potential physical impacts to the airport, with RCP 4.5 (1.7-3.2°C warming) used to provide a sensitivity test to this scenario.

Climate resilient operations

The Airport Emergency Plan has procedures in place to promptly recover from extreme weather events. This is supported by regular inspections of the airfield, onsite maintenance teams, stormwater drainage systems and thunderstorm warning systems.

Our Integrated Operations Centre monitors the transport network around the airport. This, together with our traffic management centre liaison, help manage landside disruptions caused by extreme weather.

Increasing and changing energy demands are supported by our backup generator networks which ensures business continuity in times of demand surges.

Climate change is also integrated into our health and safety procedures to minimise injuries or illnesses resulting from heat exposure.

In 2020, we have expanded the use of our adaptation plans and design guidelines to inform opportunities for climate resilient development and as a consideration in strategic planning.

Risk management

Our Enterprise Risk Management Framework and Risk Management Policy guide our approach to risk management in relation to climate change.

Senior management assists the Board by monitoring key aspects of the risk framework including policies, delegation of approvals required, risk management reporting, operational control assessments and due diligence.

The climate change risk assessment conducted in 2019 used Sydney Airport's Risk Management Framework to assess each identified climate risk. Likelihood and consequence ratings for each were determined using the Framework's risk matrix to ensure risks aligned with existing risk management processes.

The risk assessment was conducted in line with the following relevant standards and guidelines:

- The risk assessment approach set out in AS/NZS ISO 31000:2009 Risk Management Principles and Guidelines and ISO/IEC 31010
 Risk Management Risk assessment techniques
- AS 5334-2013 Climate change adaptation for settlements and infrastructure A risk-based approach, which follows ISO 31000:2009
 Risk Management Principles and guidelines
- Australian Government, Climate Change Impacts and Risk Management A Guide for Business and Government, Australian Government (2006)
- Guideline for Climate Change Adaptation, Australian Green Infrastructure Council (2011)

To identify climate risks, a series of workshops and interviews were conducted with internal Sydney Airport stakeholders, with representation across a range of business units. These workshops were designed to validate climate-related physical and transition risks to the airport, including the risk ratings and identify priority risks.

A climate adaptation workshop was also held to confirm existing controls and identify further adaptation actions for the priority risks.

Priority physical and transition risks are integrated into business wide risk registers and monitored through standard risk management processes. Medium risks are classified as requiring senior management attention and a mitigation action plan. High risks require executive attention, immediate action and ongoing monitoring. These risks are also used to evaluate climate risk controls and mitigation actions (see 'Risk management controls').

Metrics and targets

Our climate resilience targets support our ability to manage climate-related risks and opportunities. These targets are:

- Follow the recommendations of the TCFD in public disclosure
- Achieve carbon neutrality by 2025, in line with Airport Council International's Airport Carbon Accreditation program
- Reduce carbon emissions per passenger by 50 per cent from 2010 baseline levels by 2025

Under a flagship commitment in our 2019-2021 Sustainability Strategy, we are committed to the electrification of our own vehicle fleet and investing in infrastructure which supports our business partners to make the transition to an electric fleet. The impact of COVID-19 and associated capital expenditure deferrals have delayed our electrification projects until our next strategic review.

We are committed to management accountability through a direct linkage of climate-related metrics to executive remuneration. The culture element of our short-term incentive plan involves achieving our sustainability objectives, including climate change.

We monitor and disclose the following metrics annually in the Performance data section of our annual Sustainability Report which assists in understanding climate-related risks:

- Direct and indirect greenhouse gas (GHG) emissions (Scope 1, 2 and 3)
- Emissions intensity per passenger
- Energy consumption by source including renewables
- Onsite generation
- Total carbon offset purchased
- Waste generation, disposal and intensity (per passenger)
- Water consumption

We will continue to review climate indicators developed for our scenario analysis on an ongoing basis to understand and monitor evolving climate change trajectories.

Performance data

Total Greenhouse Gas emissions (tCO ₂ e)	2020¹	2019-20	2018-19	2017-18	2016-17	2015-16
Total Scope 1 & 2 ²	75,854	88,517	83,620	86,916	87,888	85,644
Scope 1	5,616	6,568	5,755	5,569	5,826	5,746
Natural gas	4,316	4,981	4,080	3,550	3,313	3,268
Stationary fuels	140	185	134	167	127	357
Transport fuels	838	1,139	1,270	1,585	2,071	2,120
Other	319	263	271	267	315	1
Scope 2	70,242	81,949	77,865	81,347	82,062	79,898
Electricity	70,242	81,949	77,865	81,347	82,062	79,898
Scope 3	276,821	503,403	883,983	884,304	1,120,932	952,747
Landing and Take Off	165,121	311,843	431,445	428,924	455,300	434,694
Ground Support Equipment	6,005	12,125	29,380	29,016	14,138	15,442
Auxiliary Power Unit	6,150	12,040	49,247	52,147	47,322	31,145
Surface Access	37,594	108,442	289,583	288,985	520,482	387,806
Third party energy use	58,320	51,292	26,127	25,338	25,460	25,459
Waste	3,021	6,838	8,968	9,747	10,083	9,417
Engine testing	452	602	696	751	415	1,023
Corporate travel	53	116	81	133	141	159
Aviation Rescue and Fire Fighting	105	105	92	110	137	149
Emissions intensity (kgCO ₂ e/ PAX) ³	6.7	2.7	2.4	2.6	2.7	2.8
Total carbon offsets (tCO ₂ e)	785	N/A	784	295	295	295
Energy						
Total energy consumption (GJ)	412,564	481,719	446,544	447,635	447,283	441,103
Natural gas	83,758	85,673	79,184	68,893	63,422	63,422
Stationary fuels	1,815	2,627	1,924	2,391	1,817	5,081
Transport fuels	12,007	16,220	18,067	22,577	29,472	30,179
Electricity (excl. renewables)	312,184	323,364	344,607	352,831	351,696	342,421
Renewable	2,800	2,009	2,763	943	0	0
Water						
Total water consumption (KL)	480,076	646,344	705,702	617,891	756,081	719,585
Potable water consumption	328,255	353,137	526,698	465,960	600,845	507,211
Ground water	244	1,064	534	1,263	3,964	2,757
Water recycled (and consumed)	151,577	202,631	178,141	150,668	151,272	209,617
Total recycled water (%)	32%	31%	25%	24%	20%	29%
Total recycled water T1 4 (%)	36%	37%	30%	30%	0%	0%
Total water intensity (L/PAX) 5	43	20	21	18	24	23

^{1.} For the years prior to 2020, environmental data sets (emissions, energy, waste, water, noise and environmental spills) were reported for 1 July to 30 June, in line with Sydney Airport's regulatory environmental reporting obligations. In 2020, this has transitioned to a calendar year data set to align with all other data sets. The 2019-20 performance data has been reported to enable year on year comparison. From July 2019, emissions, water and waste data from T3 domestic terminal is included in environmental reporting in line with the handover of T3 domestic terminal operations to Sydney Airport. In October 2020, Sydney Airport assumed ownership of the Jet Fuel Infrastructure at the airport. Energy, emissions and water data is included in 2020 performance data for October - December 2020.

^{2.} GHG inventory is compiled using the National Greenhouse and Energy Reporting and the National Greenhouse Accounts Factors' methodologies

^{3.} Calculated by dividing total Scope 1 and 2 emissions by total number of passengers. Offsets purchased for Scope 1 emissions deducted. Includes T3 from 2020 onwards

^{4.} Includes tenants in the international precinct

^{5.} Calculated by dividing total water consumption (L) by the total number of passengers. Includes T3 from 2020 onwards

W			

Waste generated (tonnes)	2,325	5,408	6,360	6,489	6,438	5,740
Hazardous waste (quarantine)	454	1,278	1,772	1,704	1,486	1,330
Non-hazardous waste ⁶	1,870	4,129	4,588	4,785	4,952	4,410
Waste disposal (tonnes)	2,325	5,408	6,360	6,489	6,438	5,740
Recycling	795	1,836	1,990	2,052	2,101	1,799
Autoclaving and landfill	454	1,278	1,772	1,704	1,486	1,330
Landfill	1,034	2,196	2,598	2,733	2,851	2,611
Organics recovery	42	98	_	-	-	_
Total waste recycled (%)	45%	47%	43%	43%	42%	31%
Waste intensity (kg/PAX) ⁷	0.21	0.17	0.19	0.19	0.20	0.19

- $6. \quad \text{Excludes waste generated on aircraft, Qantas Premium Lounge, car parks and construction waste } \\$
- 7. Includes non-quarantine solid and liquid wastes
- 8. Calculated by dividing total hazardous and non-hazardous (Kg) by the number of passengers. Includes T3 from 2020 onwards

Reporting against TCFD recommendations

TCFD recommended disclosures	Disclosure	Location
Governance		
Board oversight of climate-related risks and opportunities	 Governance and oversight of climate change 	Pg 2
Management's role in assessing and managing climate-related risks and opportunities	 Governance and oversight of climate change 	Pg 2
Strategy		
Risks and opportunities identified in the short, medium and long term	- Strategy	Pg 3-5
	 Risk management 	Annual report Pg 46
Impact of climate related risks and opportunities on the organisation's strategy and financial planning	- Strategy	Pg 2-3
Describe the resilience of the organisation's strategy under different climate scenarios	- Strategy	Pg 2-3
Risk management		
Processes for identifying and assessing climate-related risks, and integration of climate-related risks into overall risk management framework	- Risk management	Pg 6
Processes for managing climate-related risks	- Strategy	Pg 5-6
	- Risk management	
Metrics and targets		
Metrics used to assess climate-related risks and opportunities	 Metrics and targets 	Pg 6-7
	 Delivering on our commitments 	Sustainability report Pg 12-13
GHG emissions and related risks	- Performance data	Pg 7
	 Energy and emissions management 	Sustainability report Pg 21-22; 46-47
Targets used to manage climate-related risks and opportunities and performance	- Metrics and targets	Pg 6-7
monitored against those targets	 Delivering on our commitments 	Sustainability report pg 12-13