

SYD

2021 Response to the Task Force on
Climate-related Financial Disclosures

Building resilience to climate change

Sydney Airport Limited (SYD) 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 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 net zero by 2030 for emissions under our operational control (Scope 1 and 2). To achieve this, we are working to reduce our carbon emissions footprint in line with our commitments, and improve our operational resilience while adapting to the predicted effects of a changing climate now and in the future.

TCFD Framework

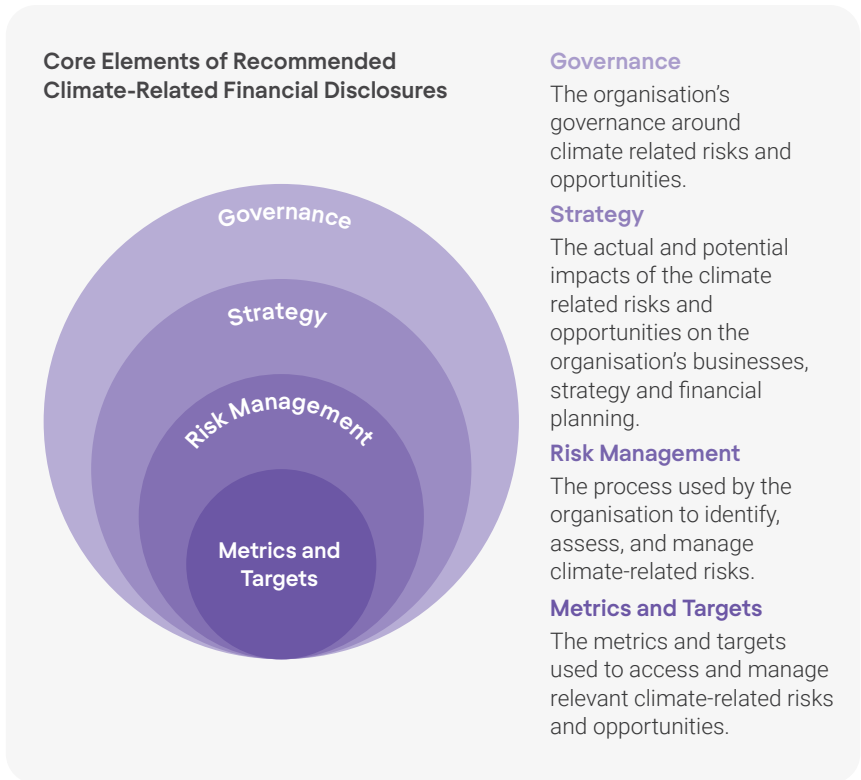
In 2015, G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board (FSB) to review how the financial sector can take account of climate-related issues.

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.

SYD has been a TCFD Supporter since 2018 and has disclosed its climate change risk management in line with the TCFD reporting framework since that time.



Meeting our TCFD Roadmap

2021 was the first year of our updated three-year TCFD Roadmap. We continued to make good progress in the implementation of these priority actions.

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	●		

● Achieved ● Significant progress ● In progress ○ Not achieved ☼ Progress impacted by COVID-19

Governance and oversight of climate change

During 2021, our Board oversaw 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 met quarterly this year. This Board Committee 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.

SYD has an established team dedicated to managing our TCFD progress and monitoring material climate change issues. The team met during the year to discuss climate developments relevant to our operating context. The Sustainability team advises the Executive Committee and our Board on climate risk planning and corporate targets 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

SYD 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 technological 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 to understand and manage our resilience as a business under these scenarios.

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.

Climate scenarios



Business as usual
RCP 8.5° | IEA Current Policies 6°

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



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 SYD's scenario analysis were further refined by:

- 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 the Air Transport Action Group's (ATAG) Waypoint 2050 report and industry participation in Airport Council International's (ACI) Long Term Carbon Goal
- assessing Australian transition pathways using the 2020 Climate Works Decarbonisation Futures report and the Federal Government's Technology Roadmap

We have identified 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.

With more frequent extreme weather events under this scenario, SYD’s operations may be disrupted with damage to infrastructure in and around the airport. 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 SYD, 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. Low or no emissions fuels would power airfield equipment and aircraft, with airport infrastructure in place to meet these changing energy demands.

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 SYD, an accelerated transition would see more efficient aircraft flying to Sydney fuelled by low or no emissions sustainable aviation fuels, hydrogen or electricity, with airport infrastructure meeting these energy demands. New property developments would be required to meet strict low carbon criteria. Equipment around the airport would be powered by low emissions fuels and renewable energy, supported by battery storage or local generation.

Business strategy integration

SYD’s updated business strategy integrates climate change via SYD’s commitment to net zero by 2030 for emissions under our operational control (Scope 1 and 2). Our work to reduce Scope 3 emissions is also integrated in to the new strategy, as where we look for collaboration opportunities with partners to reduce industry emissions.

Our purpose

To make Sydney proud every day



Values



Always do the right thing



Have each other's back



Think like our customers



Do what you say



Enablers

Safety, Sustainability, Compliance & Risk Management

At the core of our decisions and operations

Culture & People

Aligned to our Purpose and Values, with a constant focus on attracting, motivating and developing our people

SYD's sustainability strategy and targets support the business strategy and drive us to achieve our strategic outcomes. Resilience was introduced as a new focus area for the sustainability strategy in 2021, with a focus on strengthening resilience and sustainable growth. Key targets that support the achievement of these strategic outcomes are outlined in the metrics and targets section of this report, and SYD's [2021 Sustainability Report](#).

Our five-year strategy for environmental management is set out in our Airport Environment Strategy (AES), which has been prepared to meet the requirements of the Airports Act 1996 (Airports Act). The 2019-2024 strategy includes actions to address climate change mitigation and adaptation through the implementation of a five-year action plan. See SYD's [Airport Environment Strategy](#) on our website for more information.

Airport operations and infrastructure development must consider climatic conditions and technological shifts. Our climate resilience strategy focuses on four elements, addressing both physical and transition risks. The strategy drives emissions reduction and strengthens SYD's resilience to the physical, social and economic impacts of climate change, and supports our commitment to the goals of the Paris Agreement. Key developments in this strategy in 2021 are discussed on page seven of this report.



Net zero by 2030

We are committed to action on climate change.

In May 2021, we announced our commitment to be net zero by 2030 for emissions under our operational control (Scope 1 and 2 emissions).

To achieve this ambitious goal, we are following our pathway to net zero illustrated below.



Around 92 per cent of emissions under SYD's operational control came from our electricity use in 2021, our Scope 2 emissions. To reduce Scope 2 emissions, we will improve the efficiency of our electricity use and increase our renewable energy use.

The remaining emissions under our operational control are from our use of natural gas, petrol and diesel, which are our Scope 1 emissions. We are working to moderate our reliance on natural gas, transitioning vehicles to low or no-emission technology, and phasing out fuel-powered equipment like diesel generators.

In 2030, there may be a small, residual proportion of Scope 1 emissions that cannot be eliminated by alternative technologies or management practices. If this is the case, we will look to offset these emissions using credits from carbon removal projects.

A number of our 2022-24 sustainability targets support our commitment to net zero, including our target of 100 per cent renewable electricity by 2025 and to improve building performance and energy efficiency, targeting a reduction in emissions/ m² year-on-year¹ to 2024.

1. From 2019 baseline

Climate-related risks and opportunities

We have reported 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 sustainability strategy, with three-year targets designed to improve management of climate risk.

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	<ul style="list-style-type: none"> - Sydney Airport Flood Model - 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	<ul style="list-style-type: none"> - Sydney Airport Flood Model - Integrated Operations Centre monitors transport network around the airport - Traffic Management Centre liaison
Sea level rise and tidal intrusion	Temporary operational disruptions, increased frequency and duration of repair and maintenance activities	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - Considered in strategic planning
Higher temperatures and more severe heatwaves	Increased staff and/or passenger medical incidents due to heat exposure	<ul style="list-style-type: none"> - First aid training - Safety procedures for outdoor workers
	More stringent biosecurity requirements and potential for disease outbreaks due to global increase of communicable diseases	<ul style="list-style-type: none"> - Airport Emergency Plan - Annual biosecurity awareness training for SYD people - Engagement with relevant Federal Government departments
	Increased cost and temporary disruption to airside and landside power supply due to increased energy demand during heatwaves	<ul style="list-style-type: none"> - Back-up generators to maintain critical infrastructure - Energy efficiency initiatives - Onsite generation - Civil Aviation Safety Authority (CASA) power resilience requirements
	Damage to pavements due to heat exposure	<ul style="list-style-type: none"> - Pavements designed to Australian Standards for heat impact

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	<ul style="list-style-type: none"> – Policy engagement and advocacy
	Regulatory changes mandate zero carbon design and building standards, availability of materials, potentially increasing development costs and delivery timeframes	<ul style="list-style-type: none"> – Sustainable Design Guidelines – Consideration in strategic planning – 100 per cent renewable electricity by 2025 – Net zero by 2030¹
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	<ul style="list-style-type: none"> – Policy engagement and advocacy

Reviewing opportunities

SYD'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 continue to explore the role SYD can play to support the decarbonisation of aviation, which has the potential to create new opportunities for our business.

Climate strategy progress

A key objective of our climate strategy is to manage and mitigate climate risk. During 2021, we continued to make strong progress in the implementation of our climate strategy.

Energy efficiency and carbon reduction

Energy efficiency

We updated our energy efficiency plans in 2021, assessing our progress to date and prioritising activities for 2022 to reduce our energy consumption and in turn, our emissions footprint. These plans are also designed to deliver year-on-year emissions' reduction in line with our net zero by 2030¹ target.

Carbon reduction and net zero by 2030

We committed to net zero by 2030 for our Scope 1 and 2 emissions during 2021. During the year, we focused on identifying and assessing initiatives that will reduce emissions and drive us towards this target.

Emissions under our operational control (Scope 1 and 2) emissions reduced by six per cent to 71,382 tCO₂e.

Electricity use was again the largest contributor to our carbon footprint in 2021, accounting for 92 per cent of Scope 1 and 2 emissions. During the year, we implemented a number of lighting projects in our car parks and baggage rooms to improve energy efficiency. Scope 1 emissions increased in 2021, mainly because of an increase in natural gas use to heat our terminals as the average temperature in Sydney was lower in the last three months of the year than previous years.

Building on our net zero commitment, we introduced a number of new sustainability targets that will drive carbon reduction. Our target to achieve year-on-year reductions in emissions per m² and 100 per cent renewable electricity by 2025 will reduce emissions.

1. Scope 1 and 2 emissions

Asset adaptation and future proofing

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 SYD'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

Infrastructure design and location

SYD's Sustainable Design Guidelines establish minimum sustainability requirements for new building 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 categorised in RCP 8.5 (3.2-5.4°C warming) are used to identify 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 trajectory.

We continued to review and assess risks to new and existing assets from a changing climate in 2021. These assessments inform the location of key infrastructure at the airport and the selected design and construction approach.

This year we planned for the upgrade to the Airport Zone Substation which provides power to three quarters of the airport land. Flood risk was assessed during the design process and at-risk elements of the project were raised above the 1-in-100 year flood level.

Flood risk

We recognise physical impacts of climate change may present risks to our assets now and into the future. To better understand flooding risk across the airport, SYD's flood model was updated in 2021 to consider:

- recent and planned developments to assess flood risk
- SYD's climate change scenarios to understand potential impacts from different global warming projections
- additional time horizons to inform planning and investment (i.e. 2030, 2050 and 2100)

Key findings

The model update confirmed recent developments or planned projects in the next 10 years do not increase flood risk across the airport.

The review of the model found that sea level rise compounded by extreme rainfall events present the greatest flood risk over time.

Rainfall events were modelled under different climate change scenarios to identify key flood risks across the three time horizons.

In 2030, the airport experiences small additional flood impacts under all scenarios, with the northern section of the airport at risk of flooding in the 1-in-100 year storm under the worst case climate change scenario (RCP 8.5).

In 2050, the model shows no notable impacts to infrastructure during 1-in-10 and 1-in-20 year storms. During a 1-in-100 year storm, there is flooding at the northern end of the main runway across all climate change scenarios.

In 2100, extensive flooding is anticipated in the 1-in-100 year storm for all climate change scenarios. The projected flood depths are highest in the worst climate change scenario (RCP8.5) at the domestic and international precincts, with Alexandra Canal predicted to spill over the canal walls on to airport land in this scenario.

In 2030 and 2050, impacts of sea level rise were identified as minimal and contained within existing infrastructure with little change under different climate scenarios. At 2100, sea level rise may cause flooding within the airport boundary under the worst climate change scenario (RCP 8.5) as water comes up through existing pipes in the domestic precinct. This risk can be mitigated over time through engineering solutions to stop water from coming to the surface.

Next steps

Using the updated findings, a flood risk mitigation strategy is in development. In 2022, we will identify the timing and type of infrastructure and operational risk mitigation required to strengthen our resilience to flood risk. Over time, this may include the installation of one-way valves and strengthening of sea and canal walls to address sea-level rise risk, and upgrades to SYD's stormwater network to improve drainage and flood response planning to mitigate impacts.

Capital investment required to mitigate short to medium term risks is considered in the next Corporate Plan. Over time, the model outputs will support SYD to prioritise future investments according to risk.

Business resilience and carbon neutral growth

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, helps to 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.

Resilience is a focus area of SYD's new 2022-24 sustainability targets, with a focus on reducing Scope 3 emissions, achieving a minimum 5-star Green Star new buildings rating for relevant developments and supporting a 10 per cent increase in Sustainable Aviation Fuel globally by 2030 (see 'Metrics and Targets' section for more detail).

This year, we continued to build our understanding of SYD's transition climate risks. These are risks which our business faces as the world transitions to a low carbon economy.

We worked with external experts to review these risks in line with SYD's three climate scenarios and the mechanisms through which the risk has the potential to impact the business financially. The work also identified internal and external data sources to support more detailed scenario analysis. Focused on quantification of these risks, our finance and aviation teams built a deeper understanding of how these can be integrated into decision-making processes and evaluations of opportunities. This work continues.

We also turned our focus to understanding the potential future for energy in aviation. We engaged with aircraft manufacturers and fuel producers to understand the outlook for low emissions aircraft and fuel in future years and decades. This year, we began working with students from the University of New South Wales to understand the aviation energy transition around the world, and the infrastructure and engineering implications for SYD which will inform our strategic planning and infrastructure investment over time.

Advocacy for a low carbon future

It is widely recognised that low or no emissions energy solutions will play a critical role in the decarbonisation of the aviation sector. In 2021, we continued to build our understanding of the role we can play as an airport in these solutions.

We are members of Bioenergy Australia's Sustainable Aviation Fuel Alliance for Australia and New Zealand (SAFAANZ) working group, alongside aviation industry peers and fuel producers.

In the lead up to COP26, SYD signed the World Economic Forum's Clean Skies for Tomorrow ambition statement to achieve 10 per cent Sustainable Aviation Fuel (SAF) use globally by 2030. This industry coalition is committed to accelerating the supply and use of SAF technologies to achieve this target.

We also supported the development of the Airport Council International's (ACI) net zero by 2050 long term carbon goal for member airports. ACI's five regions (ACI Europe, ACI Latin America and Caribbean, ACI Africa, ACI Asia Pacific and ACI North America) came together to develop the goal, and SYD participated in working groups alongside other airports globally to develop the goal throughout the year.

Even though our net zero target reflects a more accelerated transition to net zero, we support ACI's long term carbon goal, acknowledging the diversity in airport operating contexts that may affect timelines for delivery of net zero goals.

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.

We review our commercial, operational, regulatory and financial risks, and uncertainties associated with operating Australia's busiest airport at least biannually across the business and with our Board. 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.

In 2021, we held workshops with representatives across SYD's business units to review physical and transition risk controls. In these workshops, climate-related physical and transition risks and controls were reviewed and validated or updated.

These workshops built on the detailed 2019 climate change risk assessment, conducted in line with SYD's Risk Management Framework. Likelihood and consequence ratings for each were determined using the Framework's risk matrix to ensure risks aligned with existing risk management processes. A climate adaptation workshop was also held at the time to confirm existing controls and identify further adaptation actions for the priority risks.

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)

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.

Metrics and targets

This year, SYD announced new sustainability targets, and a defined strategic focus on improving climate resilience. A number of these targets support our ability to manage climate-related risks and opportunities, and improve our resilience to the impacts of climate change.

SYD's new sustainability targets include the following targets related to climate change:

- net zero by 2030 for emissions under our operational control (Scope 1 and 2)
- 100 per cent renewable electricity by 2025
- year on year (YOY) reduction in emissions per m² and waste to landfill
- 50 per cent reduction¹ in Scope 3 emissions from airport ground operations by 2025
- minimum 5 star Green Star new buildings
- support 10 per cent Sustainable Aviation Fuel globally by 2030

We remain committed to achieving carbon neutrality by 2025, in line with Airport Council International's Airport Carbon Accreditation program, and to reduce carbon emissions per passenger by 50 per cent from 2010 baseline levels by 2025.

The culture element of our short-term incentive plan for Executive Remuneration includes continual improvement in sustainability and environmental performance.

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.

1. 2019 baseline

Performance data¹

Greenhouse gas emissions (tCO ₂ e)	2021	2020	2018-19	2017-18	2016-17
Total Scope 1 & 2 (Location based)²	71,382 ³	75,854 ³	83,620	86,916	87,888
Scope 1	5,886	5,612	5,755	5,569	5,826
Natural gas	4,938	4,316	4,080	3,550	3,313
Stationary fuels	122	140	134	167	127
Transport fuels	476	838	1,270	1,585	2,071
Other	350	319	271	267	315
Scope 2⁴	65,496	70,242	77,865	81,347	82,062
Electricity	65,496	70,242	77,865	81,347	82,062
Scope 3	234,538*	269,985*⁵	874,016⁵	884,304	1,120,932
Landing and Take Off	151,482	165,121	431,445	428,924	455,300
Ground Support Equipment	5,886	6,005	29,380	29,016	14,138
Auxiliary Power Unit	5,810	6,150	49,247	52,147	47,322
Surface Access	27,226	37,594	289,583	288,985	520,482
Third party energy	41,555	51,484 ⁵	64,524 ⁵	25,338	25,460
Waste	2,015	3,021	8,968	9,747	10,083
Engine testing	488	452	696	751	415
Corporate travel	15	53	81	133	141
Aviation Rescue and Fire Fighting	61	105	92	110	137
Emissions intensity (kgCO₂e/ PAX)	8.9*	6.7*	2.4	2.6	2.7
Total carbon offsets (tCO₂e)	1,044	785	784	295	295
Energy					
Total energy consumption (GJ)	404,825	412,564	446,544	447,635	447,283
Natural gas	95,819	83,758	79,184	68,893	63,422
Stationary fuels	1,745	1,815	1,924	2,391	1,817
Transport fuels	6,842	12,007	18,067	22,577	29,472
Electricity (excl. renewables)	297,735	312,184	344,607	352,831	351,696
Renewable	2,684	2,800	2,763	943	0
Other air emissions (kg)⁶					
Carbon Monoxide (CO)	4,751	4,029	3,708	3,700	3,400
Oxides of Nitrogen (NOx)	7,291	5,705	6,670	6,700	5,600
Oxides of Sulphur (SOx)	47	45	34	34	32
Volatile Organic Compounds (VOC) ⁷	641,627	154,601	461	460	440
Suspended Particulate Matter (PM10)	530	415	417	420	370
Suspended Particulate Matter (PM2.5)	523	412	414	420	360
Water					
Total water consumption (KL)	453,494*	480,076*	705,702	617,891	756,081
Potable water consumption	323,196	328,255	526,698	465,960	600,845
Ground water	178	244	534	1,263	3,964
Water recycled (and consumed)	130,120	151,577	178,141	150,668	151,272
Total water recycled (%)	29	32	25	24	20
Total water recycled T1 (%) ⁸	35	36	30	30	0
Water intensity (L/PAX)	57*	43*	21	18	24

* Data points heavily impacted by the COVID-19 pandemic. Results may represent an anomaly in trend performance year on year

1. Data from 2020 onwards is calendar year (Jan-Dec) and includes T3 domestic terminal
2. GHG inventory is compiled in line with the National Greenhouse and Energy Reporting Act and the National Greenhouse Accounts Factors
3. Calculated using partly extrapolated figures for fourth quarter
4. Consists 100 per cent of electricity consumption by Sydney Airport Corporation Limited
5. Result amended due to an improvement in available data for emissions from a third party facility
6. Calculated using partly extrapolated figures for fourth quarter in 2020 and 2021
7. Increase from 2020 due to Sydney Airport taking ownership of the Jet Fuel Infrastructure (JFI) October 2020
8. Includes tenants in the international precinct

	2021	2020	2018-19	2017-18	2016-17
Waste ¹¹					
Waste generated (tonnes)	1,544*	2,325*	6,360	6,489	6,438
Hazardous waste (quarantine)	1,409	454	1,772	1,704	1,486
Non-hazardous waste ¹²	134	1,870	4,588	4,785	4,952
Waste disposal (tonnes)*	1,544*	2,325*	6,360	6,489	6,438
Recycling (including e-waste and green waste)	552	795	1,990	2,052	2,101
Autoclaving and landfill	134	454	1,772	1,704	1,486
Landfill	793	1,034	2,598	2,733	2,851
Organics recovery	57	42	—	—	—
Green waste	7	—	—	—	—
Total waste recycled (%) ¹³	43.7	44.7	43.0	43.0	42.0
Waste intensity (kg/PAX) ¹⁴	0.19	0.21	0.19	0.19	0.20

11. Excludes waste generated on aircraft, Qantas Lounges and construction waste

12. Includes non-quarantine solid and liquid wastes

13. Excludes quarantine waste

14. Calculated by dividing total hazardous and non-hazardous in kilograms by the number of passengers. Includes T3 domestic terminal 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	Page 3
Management's role in assessing and managing climate related risks and opportunities	– Governance and oversight of climate change	Page 3
Strategy		
Risks and opportunities identified in the short, medium and long term	– Strategy – Risk management	Pages 3-7; 10
Impact of climate related risks and opportunities on the organisation's strategy and financial planning	– Strategy	Pages 3-5
Describe the resilience of the organisation's strategy under different climate scenarios	– Strategy	Page 4
Risk management		
Processes for identifying and assessing climate-related risks, and integration of climate related risks into overall risk management framework	– Risk management	Page 10
Processes for managing climate-related risks	– Strategy – Risk management	Pages 3-5; 10
Metrics and targets		
Metrics used to assess climate related risks and opportunities	– Metrics and targets – Delivering on our commitments	Page 10 Sustainability report Pages 10-13
GHG emissions and related risks	– Performance data – Energy and emissions management	Pages 6-7; 11 Sustainability report Pages 16-17
Targets used to manage climate related risks and opportunities and performance monitored against those targets	– Metrics and targets – Delivering on our commitments	Page 10 Sustainability report Pages 10-13; 16-17