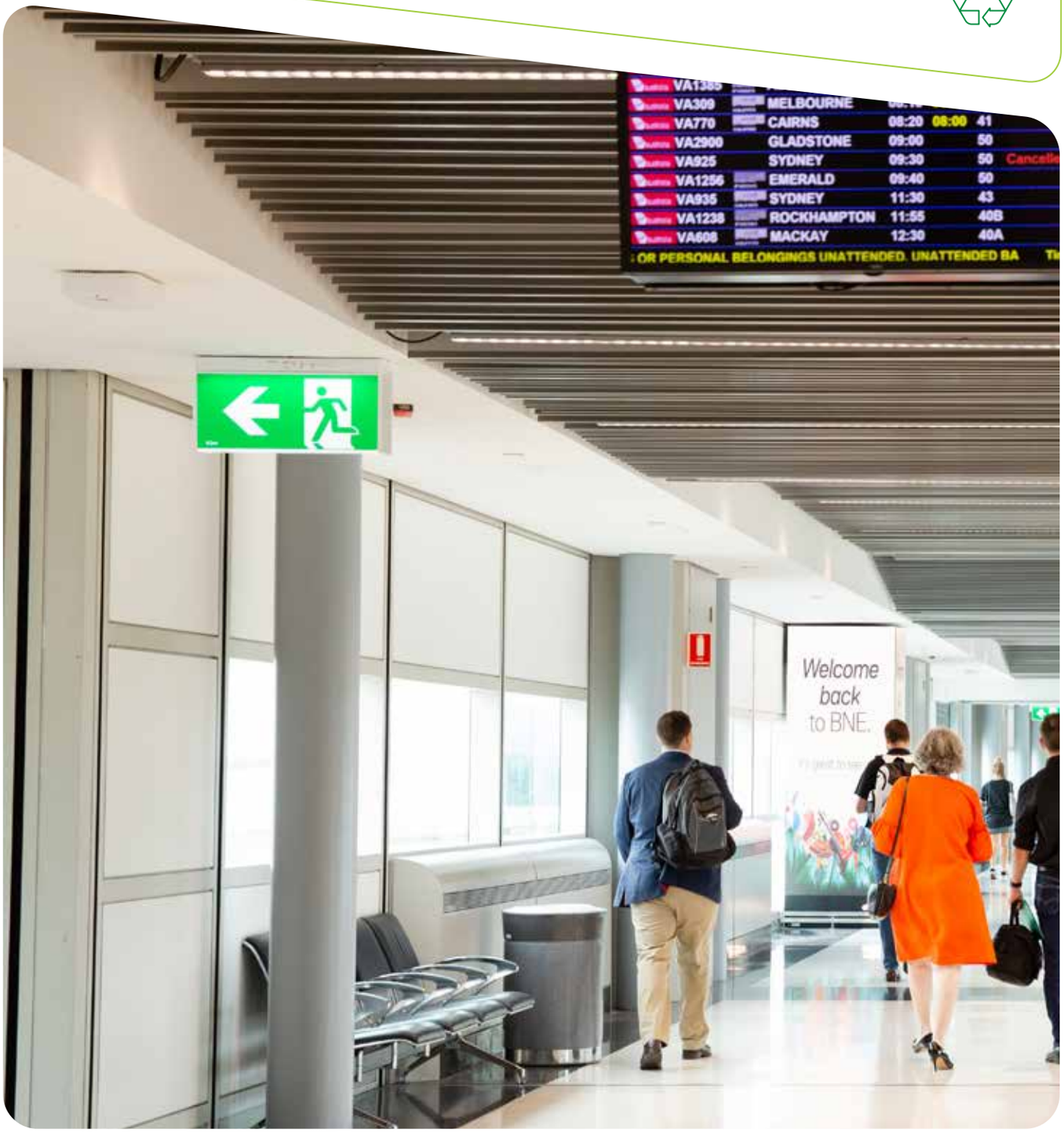
CHAPTER

04

Sustainability and Climate Change

Sustainability

Sustainability is essential to the operation and development of Brisbane Airport because it enables long-term, responsible growth, which is key to delivering value to our communities, customers, employees, and shareholders.

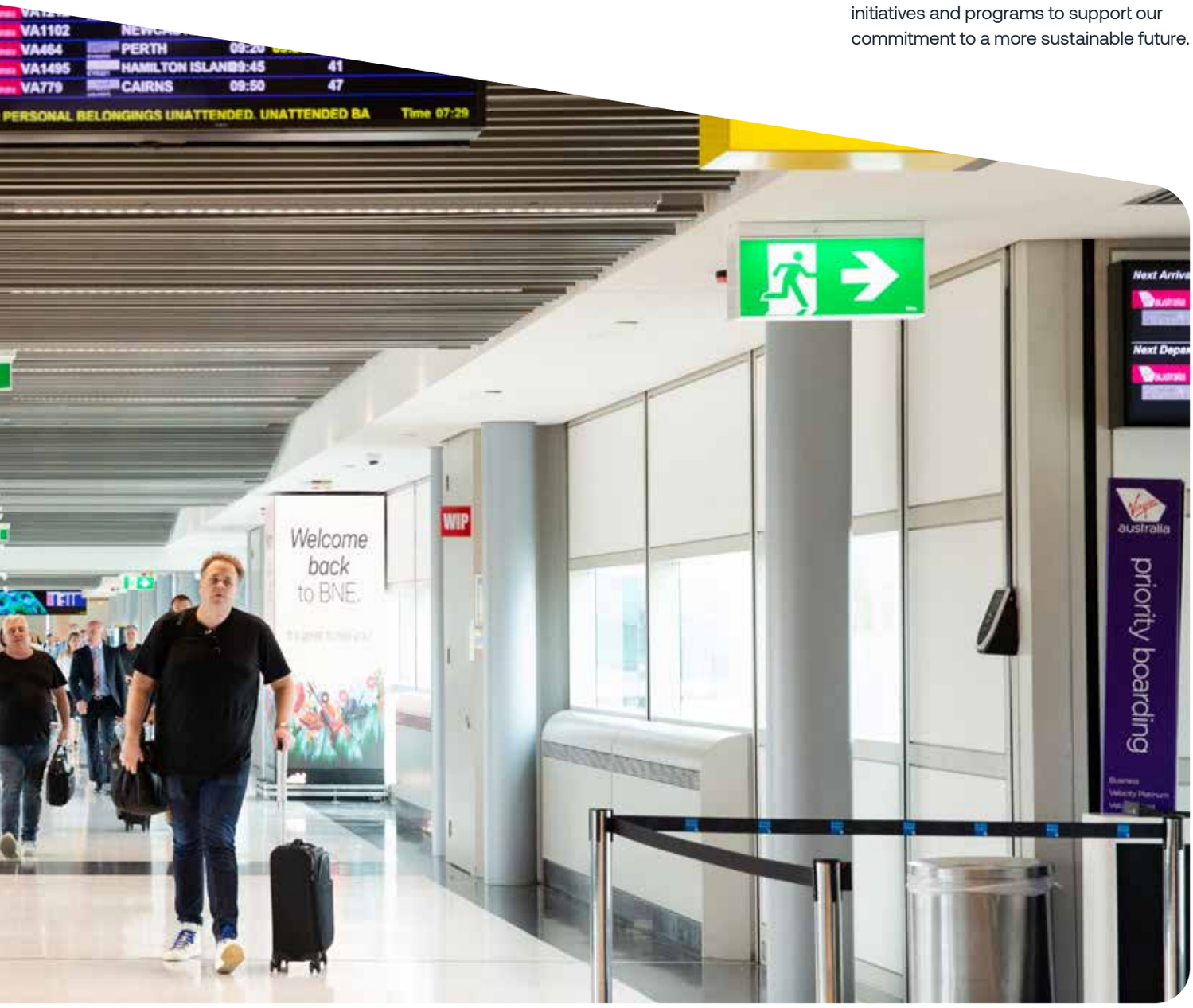


Brisbane Airport's commitment to sustainability is built upon three pillars – protect our planet, grow responsibly and support our communities.
This approach is focussed on decarbonisation within the aviation sector, integrating sustainable design initiatives into future development and being an active participant in the community. Sustainability commitments will continue to evolve in the coming years as new technologies and ways of thinking emerge.

As a long-term infrastructure business, Brisbane Airport Corporation (BAC) has been on a journey of constant improvement through implementing sustainable initiatives across a range of operational and business processes. This has provided a strong foundation for future success and Brisbane Airport has been able to accelerate key targets including:

- Becoming a Net Zero airport (scope 1 & 2 emissions) from 2025
- being the first Australian airport with an electric bus fleet
- being the first Australian airport to commit to a Reconciliation Action Plan

BAC also has a number of sustainability initiatives and programs to support our commitment to a more sustainable future.



Sustainability and Climate Change

INITIATIVE / PROGRAM	KEY POINTS
ELECTRIC BUS FLEET	• In 2018, Brisbane Airport became the first Australian airport to roll out a fleet of fully-electric buses. The use of electric buses for landside transport reinforces an ongoing commitment to creating a cleaner, more sustainable environment and improved passenger experiences at Brisbane Airport. • The new fleet boasts reduced noise pollution and zero tail pipe emissions and will result in a reduction of 250 tonnes of carbon emissions each year, equivalent to taking 100 cars off the road. The new buses include all passenger comforts, with tailored interiors designed specifically for travellers, such as ample baggage and luggage racks and three full-size double doors making boarding and disembarking more efficient for everyone.
CONTAINERS FOR CHANGE	• BAC has partnered with 'Containers for Change' (a Queensland Government refund scheme for recycled containers) to decrease the amount of waste to landfill. • Multiple donation stations have been placed across the terminals and the Skygate Precinct with all proceeds going to charity. By 2025, the program had raised more than $120,000 with over 1.2 million containers recycled.
AIRPORT CARBON ACCREDIATION	• In 2022, Brisbane Airport became the first Australian airport to achieve Level 4 of the Airports Council International's Airport Carbon Accreditation program. The transformation status recognises BAC's long-term carbon management strategy towards absolute emissions reductions and evidence of forging meaningful partnerships to reduce the emissions of airport partners. The Airport Carbon Accreditation Program is the only institutionally endorsed, global carbon management certification program for airports. It independently assesses and recognises the efforts of airports to manage and reduce their carbon emissions through six levels of certification.
RENEWABLE ENERGY	• BAC entered a six-year agreement with Stanwell Corporation, starting January 2025, to purchase renewable electricity from Queensland-based renewable energy projects. This power supports airport operations, including electric buses, fleet vehicles, offices as well as terminal and runway operations. This agreement was critical to BAC's achievement of Net Zero (Scope 1 and 2), with electricity accounting for 97% of BAC's scope 1 and 2 emissions and provides renewable energy to around 80 per cent of airport businesses. • BAC is dedicated to further expanding its onsite solar generation, having already installed 11MW of solar capacity since 2020. • As part of its commitment to Net Zero (scope 1 and 2) in 2025, BAC has transitioned 24 fleet vehicles to electric transmission vehicles. Fleet vehicles and equipment will continue to be transitioned to electric as the technology becomes available.
SUSTAINABLE DESIGN	• BAC has developed and implemented a Sustainable Design Guideline which is used to identify sustainability initiatives that could be implemented in the range of property developments at Brisbane Airport. The guideline considers several sustainable design criteria relating to environment, health, climate resilience and universal design. • Depending on the nature of the development, whether it involves maintenance activities, major projects, or fit-outs, the type of sustainability initiatives included will vary and is tailored to the specific development. Typically, initiatives focus on climate resilience, waste reduction and diversion, material selection, energy efficiency, and water efficiency. The guidelines will evolve over time to align with industry best practices and emerging trends in sustainable development. • In some developments, the established Green Star certification approach can be applied to developments at Brisbane Airport where the Green Star criteria is met. In these instances, Brisbane Airport works with businesses to achieve this certification.

Sustainability and Climate Change

Decarbonisation

The aviation industry contributes around 2.5 per cent of global carbon dioxide (CO_2) emissions and is considered a "hard-to-abate" sector, making its transition to decarbonisation slower.

As an island country, Australia is heavily reliant on aviation. There are currently no viable alternatives to flying if you want to move around Australia, or connect to other nations, quickly.

BAC supports the global actions being taken to mitigate climate change impacts through transitioning to a low-carbon future and aligning to the goals within the Paris Agreement (a binding international treaty adopted by Australia at the United Nations Climate Change Conference (COP21) in December 2015). BAC committed to and achieved Net Zero (Scope 1 and 2 emissions) by 2025 and signed the World Economic Forum's 'Clean Skies for Tomorrow' Initiative, which aims to accelerate the use of sustainable aviation fuel and ensure it accounts for 10 per cent of total aviation fuel globally by 2030.

In a 'hard to abate' industry, partnerships are critical. BAC is demonstrating its commitment to reducing Brisbane Airport's carbon emissions (including Scope 3) and BAC's efforts have been recognised globally by the Airport Council International's (ACI) Airport Carbon Accreditation (ACA) program.

This is being achieved through collaborating with airport partners to identify emission reduction opportunities and reducing our own footprint through achieving our sustainability targets.

For BAC, only 1 per cent of emissions are within our direct control (known as Scope 1 and 2 emissions). The remaining 99 per cent of BAC's emissions are Scope 3 emissions.

- Scope 1 emissions are defined as direct emissions from owned or controlled sources and of the 1 per cent of emissions within BAC's control, scope 1 emissions account for 3 per cent. This includes:
  - Fuel consumption from our fleet vehicles and plant equipment (like mowers, sweepers, paint trucks etc.)
  - Refrigerants, which are substances used in our heating, ventilation and air conditioning units
  - SF6 which is a colourless, odourless, non-toxic gas used for electrical insulation in high voltage switch gears.
- Scope 2 emissions are indirect emissions from the generation of purchased energy and of the 1 per cent of emissions within the control of BAC, Scope 2 emissions account for 97 per cent. For BAC, this includes all the electricity purchased and consumed by our operations, and in buildings owned (e.g. terminals, offices).
- Scope 3 emissions are defined as all indirect emissions that occur in a company's supply chain, both upstream and downstream and for BAC, Scope 3 emissions account for 99 per cent of total emissions. For BAC, most of its Scope 3 emissions are generated from aviation fuel used by airlines (which is Scope 1 emissions for airlines) and transportation to the airport (rideshare, taxi or personal cars).

While Brisbane Airport will maintain a focus on Net Zero (Scope 1 and 2), an emerging focus will be on leadership and facilitation within the Australian aviation industry to reduce emissions more broadly. Brisbane Airport is engaged in initiatives to reduce Scope 3 emissions and support the aviation industry's sustainability goals over the coming decades. There are several initiatives BAC has partnered with to facilitate change across the aviation industry.

Jet Zero Council

BAC was a member of the Jet Zero Council as the representative for all Australian airports between 2023 and 2025. The Jet Zero Council is focused on developing and promoting low-carbon aviation technologies and operational practices to minimise the carbon footprint of air travel. Through collaborative partnerships, the Jet Zero Council aims to accelerate the adoption of sustainable aviation fuels, electric and hybrid aircraft, and other innovative technologies that can significantly reduce emissions. BAC will continue to support the work of the Jet Zero Council in Australia.

Continue to support Airport Collaborative Decision Making (A-CDM)

A-CDM is an operational framework for how airports, aircraft operators, ground handling organisations and Air Traffic Control work together to harmonise operations through data sharing and decision support technology to make collaborative decisions across major Australian airports. While A-CDM assists with better utilisation of airport infrastructure and assets, implementing the framework also results in improved operational efficiency and therefore reduces unnecessary fuel burn and emissions through better coordination and data sharing.

Ground Support Equipment electrification

Facilitating the transition of ground support equipment (GSE) to electric power, thereby reducing emissions from airport operations. By replacing conventional fossil fuel-powered GSE with electric alternatives, BAC aims to decrease the environmental impact of ground handling activities while enhancing operational efficiency.

Government engagement

BAC works with all levels of government to promote and facilitate active and public transport connectivity with Brisbane Airport to Brisbane and beyond.

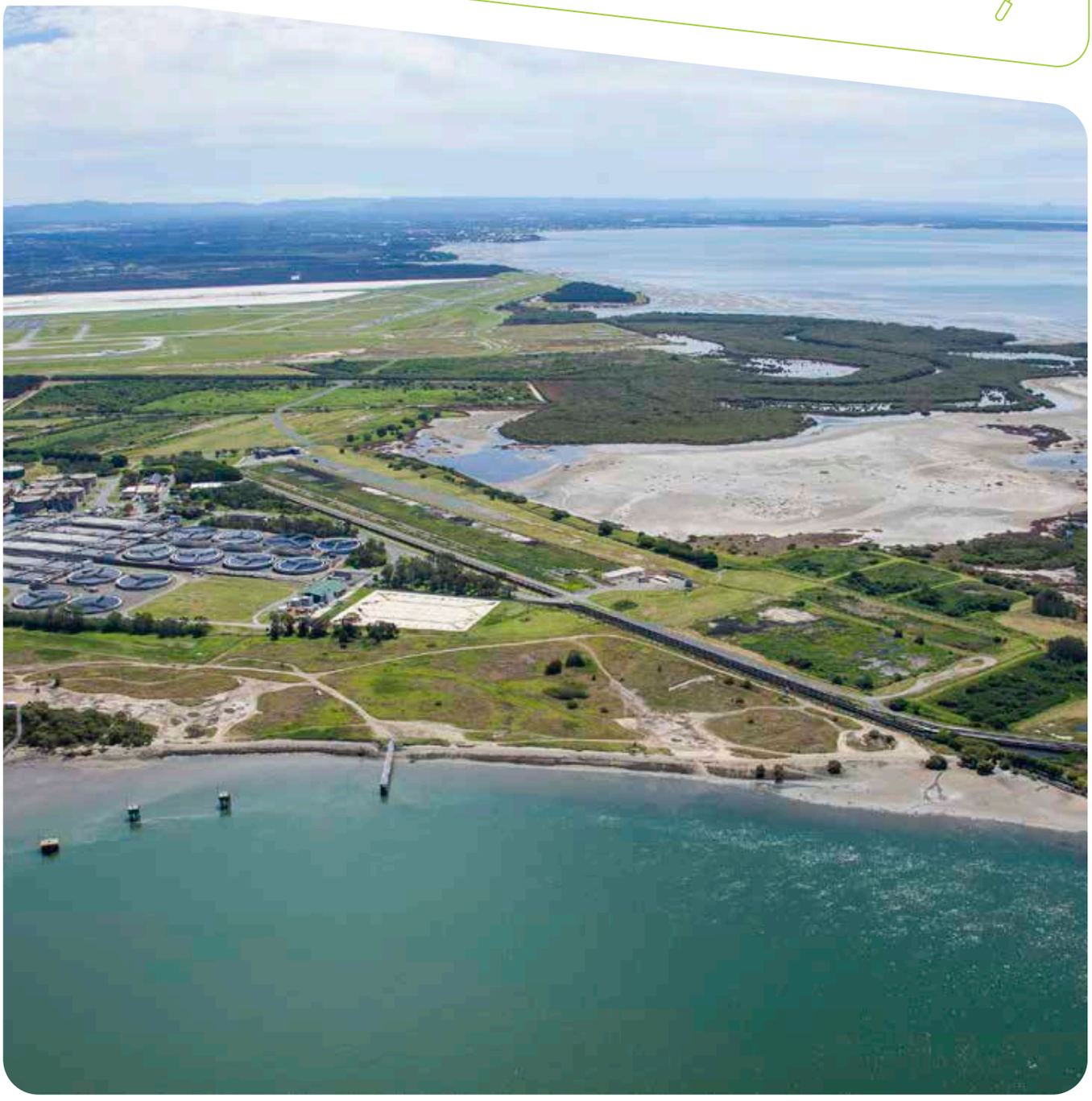
Hydrogen Flight Alliance

Collaborating with leading aviation and energy partners to explore and facilitate the adoption of hydrogen-powered flight technologies. Hydrogen has the potential to revolutionise aviation by providing a zero-emission alternative to conventional jet fuel. The Hydrogen Flight Alliance focuses on addressing the technical, regulatory, and economic challenges associated with hydrogen-fuelled aviation.

The Aviation Plan included in Chapter 11 of this Master Plan considers emerging trends like sustainable and alternate aviation fuel.

Climate Change

As the operator of Brisbane Airport, it is BAC's responsibility to ensure climate-related risks and opportunities are identified, managed, and mitigated. We recognise that both the risks and opportunities arising from climate change will inform future strategic and business decision making and presents risks both in terms of daily operations and long-term planning.



Scenario Analysis

Brisbane Airport undertook a climate change risk assessment (encompassing both physical and transitional risks) and developed a Climate Change Adaptation Plan based on the findings of the physical risk assessment. Climate change risks are referred to as:

a. ***Physical risks*** which relate to the impacts of climate change and can be event driven (e.g., floods, cyclones etc.) or longer-term shifts in climate patterns (e.g., sea level rise, increased temperatures etc.); and

b. ***Transitional risks*** which relate to risks and opportunities associated with transitioning to a lower-carbon economy.

The latest physical climate assessment for Brisbane Airport is based on the findings detailed in the United Nations Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) and Sixth Assessment Report (AR6).

The IPCC have developed four climate scenarios referred to as Representative Concentration Pathways (RCP). The RCPs outline various climate futures based on the amount of greenhouse gas concentrations within the atmosphere. RCP8.5 represents the highest global emission scenario where globally, there is little to no effort to reduce emissions. This scenario was applied to ensure Brisbane Airport's assets and infrastructure have the highest resilience to known climate change impacts.

The IPCC Sixth Assessment Report (AR6) included new scenarios referred to as Shared Social Economic Pathways (SSPs). These scenarios consider socioeconomic global changes.

The recent update to the transitional risk assessment was undertaken using the Sixth Assessment Report (AR6). The transitional risk assessment was undertaken using the IPCC RCP 1.9 (Acceleration transition) and SSPs 1 (Accelerated transition) scenario, as it represents strong mitigation efforts with early participation from all emitters followed by active removal of atmospheric carbon dioxide. The scenario summaries are detailed below.

BUSINESS AS USUAL (RCP 8.5)	ACCELERATED TRANSITION (SSPS1 – 1.9)
• High emissions scenario, continuing current carbon emissions to 2100 and beyond • Increased economic and social development coupled with exploitation of fossil fuels and resources • Physical impacts of climate change increase • No international policy, support or behavioural changes made • Considered worst case scenario	• Low emissions pathway, strong emissions reduction where global greenhouse gas emissions are cut to net zero by 2050 • Supportive international and national policies • Transition to renewable energy and less energy intensive activities • Considers most optimistic scenario

Physical Risks

Understanding the exposure to physical climate change-related risks is critical to increase resilience in Brisbane Airport's operations and infrastructure and to inform planning decisions. Physical risks resulting from climate change can be acute (event driven e.g., floods, cyclones etc.) or chronic (longer term shifts in climate patterns e.g., increased temperatures, sea level rise etc.) and lead to impacts such as direct damage to assets and services and operational disruptions.

The key physical climate change-related risks for Brisbane Airport include:

CLIMATE HAZARD	IDENTIFIED RISK
EXTREME HEAT	• Increasing temperatures and frequency of hot days resulting in degradation of hardstand assets (i.e. taxiways, aprons, pavements, roads and carparks) leading to increased maintenance expenses and shortened lifespans.
EXTREME RAINFALL AND FLOODING	• Extreme rainfall events resulting in damage or failure of road or rail infrastructure leading to staff, customers and suppliers not being able to access Brisbane Airport.
STORMS	• Storm events resulting in damage to power distribution system requiring immediate action leading to operational disruptions • Extreme storm events resulting in dangerous conditions and flight delays, leading to increased volumes of passengers within the terminal buildings and business disruption.
SEA LEVEL RISE	• Sea level rise impacts resulting in damage to or failure of infrastructure leading to operational disruptions and disruptions to the major capital works programme • Sea level rise resulting in inundation of drainage outfalls leading to increased incidence of flooding, interruptions to access and service disruption • Storm surge exacerbating the impacts of sea level rise reducing drainage immunity.

Transitional Risks

Transitioning to a lower-carbon economy may entail extensive changes to address mitigation and adaptation requirements related to climate change.

These changes are informed by an analysis of policy and market trends, both nationally and internationally. Transition drivers are external forces that facilitate these risks and opportunities. Depending on the nature, speed, and focus of these changes, transitional risks may pose varying levels of financial and reputational risk to Brisbane Airport.

Transitional risks for Brisbane Airport include:

TRANSITION DRIVER	IDENTIFIED RISK
ESTABLISHMENT OF COMPULSORY ZERO CARBON DESIGN AND BUILDING STANDARDS	• Increased exposure to future construction and expansion projects to face regulatory approval delays, non-approval, increased material costs, or costly design and planning amendments to comply with changing approval requirements or sustainable design regulations.
INCREASING SHAREHOLDER AND EMPLOYEE EXPECTATIONS ON CORPORATE CLIMATE CHANGE RESPONSE	• Increased efforts to reduce emissions will lead to increased expenditures to meet compliance or targets, reducing profit margin • Climate-related risks and opportunities across BAC's supply chain are not well understood, resulting in unforeseen disruptions and increased costs • Failure to disclose material climate-related risks may reduce shareholder confidence in BAC's risk management, leading to reputational loss, decreased confidence in senior management, and potential impacts on company valuation.
LEGAL LIABILITIES AND REGULATORY REQUIREMENTS	• Increased exposure to legal liability and potential penalties for failing to disclose material physical and transition risks, not meeting BAC's sustainability commitments, or misrepresenting climate change and sustainability performance.
UPTAKE OF ALTERNATIVE AVIATION FUELS	• Increased energy demands for electric or hydrogen-powered aircraft, leading to higher upfront and operational costs • New infrastructure or modification of existing infrastructure is required to support refuelling for hydrogen technology, resulting in increased expenditures, safety constraints, changes to operational procedures and training required for employees, contractors and airside operators • Supply shortages or delays to imported sustainable aviation fuel and/or a lack of domestic market fuel availability resulting in an inability to contribute to global sustainable aviation fuels (SAF) targets.
SHIFT IN ENERGY CONSUMPTION TO ELECTRIFICATION AND EFFICIENCY	• Increased volatility in energy pricing and reliability, leading to higher costs, potentially reducing revenues and causing operational impacts from brownouts or blackouts • Late adoption of technology resulting in lost opportunity to lower operational expenditures over the life of the asset/equipment.

Transitional Opportunities

Efforts to mitigate and adapt to climate change have potential opportunities for Brisbane Airport through resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain.

Transition opportunities for Brisbane Airport include:

TRANSITION SECTOR	IDENTIFIED OPPORTUNITY
ESTABLISHMENT OF COMPULSORY ZERO CARBON DESIGN AND BUILDING STANDARDS	• Use design and energy management tools to meet energy and emissions standards for buildings and infrastructure, resulting in reduced operational costs and improved asset valuation and performance.
SHIFT IN ENERGY CONSUMPTION TO ELECTRIFICATION AND EFFICIENCY	• Utilise new technologies to reduce energy use, emissions and associated operational expenditures • Engage tenants in investing in onsite solar power and precinct-wide sustainability initiatives, supporting their emissions reduction goals and promoting long-term leases and retention • Commercial opportunity to respond to higher electric charging requirements for electric vehicles travelling to and from Brisbane Airport.
INCREASING SHAREHOLDER AND EMPLOYEE EXPECTATIONS ON CORPORATE CLIMATE CHANGE RESPONSE	• Access new finance for technology research, development, and deployment, diversifying and growing finance stream.
UPTAKE OF ALTERNATIVE AVIATION FUEL	• Actively engage with airlines to support SAF uptake and mitigate the financial burden of SAF adoption by developing incentives for airlines, for example reducing landing fees for planes fuelled by SAF.
SHIFT IN ENERGY CONSUMPTION TO ELECTRIFICATION AND EFFICIENCY	• Increase renewable energy generation onsite through improved access to renewable technologies and declining technology costs, resulting in improved resource efficiency, reduced emissions and operational expenditure, and reputational benefits • Market Brisbane Airport as a renewable leader and increase absorption rates by providing renewable power to tenants, resulting in reputational benefits • Investigate pooling scheme mechanism for ground storage equipment to reduce volume of equipment, reducing apron traffic, optimising maintenance regimes and reducing emissions through more efficient use.
ADOPTION OF CLIMATE-RELATED POLICIES AND TARGETS	• Consider developing an internal shadow carbon price to measure the financial impact of greenhouse gas emissions, in anticipation of future prices being set, or as a way to allocate funds from the shadow price to support BAC furthering its emissions reduction efforts.

Adaptation Planning

Climate change adaptation planning at Brisbane Airport commenced in the early 2000s, largely addressing sea level rise informed by an airport-wide drainage model. This model continues to be updated and minimum development levels applied to new developments.

Integrating climate adaptation into planning and operations has continued and evolved from the basis of sea level rise and now Brisbane Airport monitors and continues to increase its adaptive capacity aligned to its risk assessment approach which is reviewed as new climate science becomes available.

BAC's Adaptation Plan outlines a comprehensive set of 14 actions to respond to physical climate risks at Brisbane Airport. The actions are categorised under five themes, which are:

Theme 1:

Building the baseline on climate data

Theme 2:

Incorporating climate data into strategic and operational decisions

Theme 3:

Implementing climate actions in design and planning

Theme 4:

Implementing climate actions in operations and maintenance

Theme 5:

Engaging with key external partners

This 2026 Master Plan incorporates several initiatives relating to Theme 3 particularly within the Development Objectives and Design Framework, the Ground Transport Plan and the Services and Utilities Plan. Continued implementation of the initiatives under all themes will contribute to BAC's climate resilience. The Adaptation Plan has been designed to be revised and updated regularly in line with new climate science as it is released by the IPCC.