

## REDISCOVERING THE Magic OF TRAVEL

As the world rekindles its desire for travel adventure, Changi Airport continues to welcome visitors with a symphony of awe-inspiring marvels and boundless experiences.

Innovation took centre stage, with immersive wonders like Dreamscape and The Wonderfall that blend nature with technology. ChangiVerse on Roblox extends the passenger experience into a virtual world to explore the airport's enchanting realms from anywhere across the globe.

Changi Airport's passenger numbers soared along with the return of full four-terminal operations and the grand reopening of Terminal 2. In the January to March 2024 quarter, Changi crossed a significant milestone as passenger movements surpassed pre-pandemic levels for the first time, marking a triumphant return to the skies.

New airlines joined the Changi family, city links sprouted, and existing routes saw a surge. Retail became an adventure in itself, with passengers rediscovering familiar favourites and encountering delightful new arrivals. Jewel Changi Airport also shimmered with new tenants.

Throughout this journey, the spirit of the ONE Changi community stayed strong. Staff, airlines and airport partners united to uphold the world-renowned service excellence that defines Changi. This unwavering dedication was celebrated with several awards throughout the year, reaffirming Changi's status as the pinnacle of enchantment worldwide.

As we reflect on the journey behind us and look ahead to the horizons beyond, one thing remains certain – the magic of travel endures. So, join us as we rediscover that magic, one destination at a time.





# EMBRACING INFINITE TRAVEL

possibilities

Changi Airport embarked on an extraordinary journey of recovery, echoing the boundless possibilities of global travel. With traffic numbers surpassing pre-pandemic levels for the first time, Changi solidified its status as a premier gateway to the world. Wherever one dreams of going, Changi Airport is ready to transform this wanderlust into realities.

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## CREATING A WORLD OF

wonden

As the world's most awarded airport, Changi Airport sets the stage for unparalleled airport experiences. Terminal 2's grand reopening dazzled with digital magic and enchanting gardens, earning acclaim for its innovation, creative charm and emphasis on sustainability. The resumption of full four-terminal airport operations bolstered Changi's capacity to 90 million passengers annually. With a focus on safety, innovation and sustainability, CAG navigates the challenges of a burgeoning air travel industry with unwavering dedication. Meanwhile, Seletar Airport embraces advancements such as Single Runway Frequency and drone inspections to enhance operational efficiency and passenger satisfaction.







# TURNING MOMENTS INTO NEW WORKPLACE

discoveries

CAG has woven a sense of wonder into its workplace culture by restructuring work schedules to foster creativity. 'i-Fridays' were introduced to encourage employees to set aside time to upskill and explore innovation projects that transcend their current portfolio. Beyond work, the flag of volunteerism flies ever higher as CAG continues to give back to society through numerous Changi Foundation programmes.

During the year, CAG launched a new employer brand 'Come Make MAGIC With Us' to attract top talent. It is bolstered by the hashtag #IMCAG, an anagram of MAGIC.









# CORPORATE

Changi Airport Group (Singapore)
Pte Ltd (CAG) was formed on 16
June 2009 and the corporatisation of
Singapore Changi Airport (IATA: SIN,
ICAO: WSSS) followed on 1 July 2009.

As the company managing Changi
Airport, CAG undertakes key
functions focusing on airport
operations and management, air
hub development, commercial
activities and airport emergency
services. CAG also manages Seletar
Airport (IATA: XSP, ICAO: WSSL) and
through its subsidiary Changi Airports
International, invests in and manages
airports around the world.

## VISION, MISSION AND VALUES

## Our Vision

To be a first-in-class, leading global aviation hub run by exceptional people, connecting lives and businesses, contributing to the economic growth of Singapore.

## Our Mission

To be a global leading airport company, anchored in the heart of Asia, pioneering safe, secure, sustainable and vibrant air hubs, ready for our future.

## Our Values

Our values and culture guide us in everything we do. They are the foundation for our decisions and the heart of our organisation. CAG is about world-class service, delivered through our passion and culture of excellence.

We value
OUR PEOPLE

We succeed with OUR PARTNERS



Integrity and
Service are at
the Heart of
everything we do

We lead in OUR BUSINESS

We are committed to OUR CUSTOMERS

## MESSAGE FROM THE CHAIRMAN

Financial year 2023/24 was a remarkable journey for Changi Airport Group (CAG) as we transitioned from the challenges of Covid-19 to a recovery period marked by volatile economic conditions, high interest rates, and evolving consumer behaviour. Despite these headwinds, I am proud to report that CAG has emerged stronger and more resilient, charting a course of recovery that has exceeded our expectations.

### Changi as a leading air hub

The Changi air hub has been at the heart of this resurgence. 2023/24 marked a significant milestone, with 62.5 million passenger movements, reflecting a remarkable 46% growth from the previous year. I am happy to report that we surpassed pre-Covid levels in the final quarter of the financial year, emerging as the fifth busiest international airport globally by seat capacity<sup>1</sup>. This recovery underscores our resilience and reaffirms our pivotal role as a global aviation hub.

Our commitment to enhancing Changi's connectivity to the world remained unwavering. We welcomed two new passenger airlines, Aero Dili from Timor Leste and TransNusa from Indonesia, and established new links to India's Bhubaneswar and China's Beijing Daxing Airport. These additions expanded our network and reinforced our status as a key gateway to the Asia-Pacific region.

In a concerted effort to restore connectivity, we reinstated links to many destinations, expanding Changi Airport's network to over 150 cities, served by more than 90 airlines operating over 6,700 weekly flights. To promote Singapore as a stopover destination, the Free Singapore Tour was relaunched with a new Changi Precinct Tour to showcase the vibrancy of our island's east.

In cargo operations, we handled 1.8 million tonnes of airfreight throughput during the year, placing 12<sup>th</sup> globally for international cargo traffic and cementing our position as the busiest cargo airport in

Southeast Asia. The addition of four new freighter airlines and several strategic partnerships underscored our commitment to bolstering air logistics. This included a Memorandum of Understanding with Brussels Airport Company to improve pharmaceutical air logistics and set new industry standards for excellence.

## Improved financial and commercial performance

CAG's financial results for 2023/24 reflect continued recovery and growth. Total revenue rose 45% to \$\$2,727 million, driven by the strong return in air travel demand. Revenue from the airport's concessions recovered more slowly due to lower spending amid inflationary pressures and global economic uncertainty. Nonetheless, EBITDA increased 60% to \$\$1,205 million, and net profit after tax grew to \$\$\$431 million.

With increased passenger movements, CAG also seized





The refreshed T2 includes several new experiences, including 'Flap Pix', an installation which features the iconic mechanical split-flap flight information board.

the opportunity to elevate customer experience with new innovative retail concepts such as an interactive sommelier, robot barista, and unmanned convenience store. Our e-commerce platform, iShopChangi, expanded to incorporate over 2,000 brands, enriching the shopping experience for discerning travellers and residents. This expansion included off-airport merchants, allowing us to offer diverse and more high-quality shopping options.

### A rejuvenated Terminal 2

On 1 November 2023, CAG celebrated the reopening of Terminal 2 (T2), marking a key milestone in our infrastructure development. Inspired by nature, T2's design incorporates natural materials and lush greenery to create a serene environment. The expansion added over 21,000 square metres, increasing Changi Airport's capacity to 90 million passengers per annum. Enhancements included nearly

doubling the number of automated check-in kiosks and bag drop machines, introducing automated Special Assistance Lanes, and constructing a new mega Early Baggage Storage facility. Our efforts were recognised with the Building and Construction Authority's Universal Design Excellence Award and the BCA Green Mark Platinum award.

The engineering works undertaken for T2 also involved significant upgrades to critical systems and building equipment, ensuring that the terminal remains at the forefront of efficiency and sustainability. The introduction of 27 new-to-Changi brands has diversified the tenant mix, enhancing passenger experience. These new offerings provide a blend of local and international brands, catering to a wide range of tastes and preferences.

## Innovations and operational enhancements

Elsewhere in Changi Airport's terminals, there were enhancements, emphasising



The debut of Jones the Grocer, Changi Airport's first landside duplex cafe, has brought much excitement to the departure hall in T2.

### MESSAGE FROM THE CHAIRMAN



Jewel enthralled visitors with several large-scale activations, including its first flower festival 'Jewel Blooms' in September 2023.



Collaborations
with the Singapore
Tourism Board
have elevated
Jewel into a
destination in
its own right,
offering carefully
curated products
and dining
experiences that
highlight the best
of Singaporean
culture.

safety, innovation, and efficiency. The deployment of autonomous cleaning robots and a new Enterprise Data Platform Plus to collect and analyse data in near real-time are examples of our efforts to raise operational efficiency while maintaining a high standard of service. Key milestones also included operationalising Runway 2 with upgraded safety systems and pioneering technologies like the Casualty Evacuation Bot for emergency passenger evacuations.

To accommodate the increasing volume of air traffic, new aircraft parking stands were constructed, and we commenced trials for fully automated aerobridges, which will improve the disembarkation process and reduce manpower requirements. At Seletar Airport, the introduction of the Single Runway Frequency system has

streamlined runway operations and significantly improved safety. Additionally, integrating drones for inspection and maintenance has increased precision and reduced costs.

#### CAG's subsidiaries

CAG's subsidiaries Jewel Changi Airport (Jewel) and Changi Airports International (CAI) have been instrumental in amplifying our global footprint. Jewel continued to attract much attention in news and social media during the year, enjoying a 26% year-on-year increase in footfall. Collaborations with the Singapore Tourism Board have elevated Jewel into a destination in its own right, offering carefully curated products and dining experiences that highlight the best of Singaporean culture.

CAI's recent story has been one of transformative partnerships and impactful initiatives. Leveraging our expertise in airport management, we inked strategic agreements with airports in Angola, Egypt and Vietnam. These partnerships aim to enhance airport performance, grow non-aeronautical revenue, and foster international route development. CAI will continue to explore opportunities to share CAG's expertise and standards of excellence with airports around the world.

#### The way forward

Even as we build on the recovery of air traffic at Changi Airport, CAG today faces unique conditions in our operating environment. Innovation remains the cornerstone of our future success



Our commitment to sustainability remains unwavering. We actively explore ways to improve energy efficiency in our terminals as well as increase the share of renewables in our energy mix.

and it is being pursued across all our business and operations. These cross-disciplinary efforts are focused on developing bold solutions to enhance the capacity of Changi's existing terminals, as well as to meet the major challenges facing our air hub, such as climate change, manpower constraints, and evolving customer expectations.

Looking ahead, the construction of Terminal 5 (T5) is set to commence in 2025, following the launch of the first construction tender in March 2024 for the T5 substructure. Initiatives like the T2 Connection (linking T5 to T2) and new ways of baggage handling will ensure seamless passenger and baggage transfers between terminals. We are testing robotic solutions such as the Auto-Dolly and Auto-DollyTug, as well as implementing autonomous loading and unloading of Unit Load Devices at aircraft stands. When fully developed, these innovations will ensure that Changi Airport remains ready to meet the growing demands of global air travel and ensure that Changi Airport continues to set the standard for operational excellence and passenger service.

Our commitment to sustainability remains unwavering. This year, we raised our carbon emissions target from the previous Zero Carbon Growth to a 20% reduction in Scope 1 and 2 emissions by 2030, against a 2019 baseline. This is in line with the target set by the authorities for domestic aviation emissions under the Singapore Sustainable Air Hub Blueprint. The installation of a solar photovoltaic (PV) system on Changi Airport's rooftops, set to be the largest single-site rooftop solar PV system in Singapore when completed in 2025, marks a significant step in our commitment to sustainable operations. Alongside this, we are proud to introduce 'Changi Carbon Offsets'-our very own carbonoffset programme for travellers. These initiatives are pivotal in our ongoing efforts to utilise renewable energy extensively and to reduce the aviation industry's carbon footprint.

### **Appreciation**

Mr Lee Seow Hiang, who has been Chief Executive Officer since CAG's corporatisation in 2009, steps down on 1 July 2024. I would like to extend my heartfelt thanks to Seow Hiang for his remarkable

15 years of leadership. His vision and dedication have been instrumental in positioning Changi Airport as a world leader among air hubs. Under his stewardship, we saw the construction of Terminal 4, upgrades to Terminals 1 and 2. and the realisation of Jewel. These significant developments, coupled with efforts to expand Changi's network of airlines and destinations, have garnered global acclaim, earning Changi numerous Best Airport awards. Seow Hiang also led CAG through the unprecedented challenges of Covid-19, ensuring we emerged stronger and more resilient. The Board and I wish him the very best in his future endeavours.

The Board would also like to thank Brigadier-General Kelvin Fan who stepped down as a Director in March 2024. We are grateful for his valuable contributions and counsel during his tenure.

With air travel expected to continue growing in the future, we remain mindful that the industry is still volatile and fast-changing. Nonetheless, we look forward to achieving full recovery in Changi Airport's passenger traffic before long. This confidence stems from the strong foundation and resilience demonstrated by our team and all our partners who have worked closely with CAG to drive Changi's long-term growth.

Together, we will continue to navigate challenges, seize opportunities, and elevate Changi Airport to even greater heights.

## TAN GEE PAW Chairman

## FINANCIAL REVIEW

### **Financial Highlights**

	FY19/20 <sup>1</sup>	FY20/21	FY21/22	FY22/23	FY23/24
Profit or Loss (S\$'mil)					
Total revenue	3,119	697	944	1,883	2,727
Total expenses	2,252	1,433	1,526	1,856	2,233
EBITDA	1,637	178	232	751	1,205
Profit /(Loss) attributable to shareholder of the Company	438	(954)	(838)	33	431
Financial Position (S\$'mil)					
Assets	15,948	15,301	12,750	13,313	14,347
Liabilities	7,818	8,469	6,628	7,170	7,842
Cash and cash equivalents	2,422	1,632	1,351	1,595	2,115
Loans and borrowings	1,803	1,837	2,016	1,972	1,925
Equity attributable to shareholder of the Company	7,887	6,916	6,218	6,259	6,637
Financial Ratios					
EBITDA margin	52.5%	25.5%	24.6%	39.9%	44.2%
NPAT margin	4.8%	n.m.	n.m.	0.5%	15.3%
Return on equity	5.6%	-12.9%	-12.8%	0.5%	6.7%

<sup>1</sup> The Group has adopted Singapore Financial Reporting Standards (International) ("SFRS(I)") with effect from 1 April 2019. In accordance with the transition requirements, FY19/20 comparatives and balances as at 31 March 2020 have been restated.

n.m.: Not meaningful

#### **Year In Review**

Financial year 2023/24 was a significant milestone for Changi Airport's recovery. For the first time since the onset of the pandemic, Changi Airport saw its passenger numbers surpass pre-Covid levels during the last quarter of the financial year. The robust demand for air travel during the year was led by the rebound in Northeast and Southeast Asia traffic. Boosted by the recovery in passenger traffic at Changi Airport, the Group's revenue rose 45% to \$\$2,727 million.

Over the last two years as passenger traffic continued to recover, Changi Airport progressively reopened terminals as part of a measured approach to meet capacity demands as well as manage terminal operating costs. With full recovery in sight, Changi Airport celebrated the reopening of the expanded Terminal 2 (T2), marking the full restoration of Changi's four-terminal operations. The Group's operating expenses rose by 20% to \$\$2,233 million with the increased level of business activities.

Overall, the Group saw an improvement in its financial performance as EBITDA and net profit attributable to the shareholder of the Company increased to \$\$1,205 million and \$\$431 million respectively.

### **Group Operating Revenue**

With the recovery in travel demand, passenger traffic at Changi Airport continued to grow steadily during 2023/24, gaining momentum in the last quarter to surpass pre-Covid levels. The strong traffic performance in the last quarter was boosted by the hosting of major events in Singapore and liberalisation of visa requirements between China and Singapore. Changi Airport also collaborated closely with airline partners to drive air traffic and connectivity, restoring almost 90% of pre-Covid city links. For the whole of 2023/24, passenger movements reached 62.5 million or 91% of pre-Covid levels, with air traffic movements totalling 344,000 or 90% of pre-Covid levels.

Revenue from the Group's airport service fees increased by 53% to \$\$1,344 million, driven by the growth in passenger traffic and phased increase in chargeable rates that helped to support Changi's operations, development plans and upgrading of existing infrastructure that continued throughout the pandemic.

Airport concession and rental income improved by 48% in 2023/24 to reach S\$1,042 million, but recovery was slower due to lower passenger spending amid inflationary pressures and global

economic uncertainty. Despite the challenges, Changi continued to enhance its retail shopping experience and added more than 40 new brands at Changi.

At Jewel Changi Airport, large-scale marketing activations in partnership with popular brands like Marvel and Nintendo were launched. These efforts, combined with a refreshed tenant mix, contributed to increased footfall and sales compared to the previous year. As a result, Jewel's revenue increased 14% year-on-year (yoy).

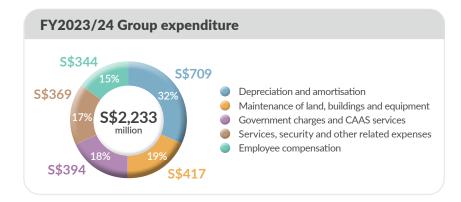
On the back of travel recovery, Changi Travel Services, which offers travel-related products and services through its consumer-facing brand, Changi Recommends, experienced steady increase in its sales of travel essentials such as local SIM cards, Wi-Fi routers and transport cards, as well as sales of local attractions' tickets to international travellers.

Changi Airports International, the consultancy and investment arm of the Group, also saw an increase in its revenue as it continued to forge new partnerships and signed several consultancy agreements during the year with overseas airports such as Cairo International Airport and regional airports in Angola.

Overall, Group revenue grew 45% to \$\$2,727 million.



## FINANCIAL REVIEW



### **Group Expenditure**

In tandem with the recovery in passenger traffic and restoration of full four-terminal operations at Changi Airport, the Group's operating expenses increased by 20% yoy to \$\$2,233 million in 2023/24.

T2 was fully reopened in November 2023 after three and a half years of extensive engineering and expansion works, boosting the airport's total handling capacity to 90 million passengers per annum. With the recovery of air traffic at Changi Airport, services and licence fees charged by the Civil Aviation Authority of Singapore were also fully reinstated.

To navigate the headwinds of escalating cost pressures from inflation and labour shortages, the Group continued its focus on innovation initiatives, leveraging automation and technology to boost operational productivity and efficiency. For instance, T2 was reconfigured to provide greater convenience to passengers with increased automated check-in kiosks and bag drop machines. The Group also experimented with various innovative solutions such as the fully automated passenger loading bridges

and the use of artificial intelligence and machine learning to enhance the speed and accuracy for the security screening of hand-carry baggage. These technological advancements automate labour-intensive tasks and augment the workforce to increase manpower productivity.

To improve energy efficiency and shift towards renewable and cleaner energy sources, the Group upgraded airport buildings and systems with best-in-class energy-efficient models and expanded support for the airport community to switch to cleaner energy vehicles. The Group also continued to advance its solar efforts with the commencement of the installation of Singapore's largest rooftop solar photovoltaic system in one location.

#### **EBITDA and Net Profit**

The Group's EBITDA grew by 60% to reach S\$1,205 million and net profit attributable to the shareholder of the Company grew to S\$431 million in 2023/24.

#### **Financial Position**

As at 31 March 2024, the Group's asset base grew to \$\$14,347 million, with more than two-thirds

comprising capital asset investments in property, plant and equipment as well as investment property. During the year, the Group invested over \$\$800 million to upkeep and upgrade the airport's facilities, as well as to fund the expansion of T2 and the development of Changi East.

With significant capital investment outlay for the Changi East development underway, the Group continued to stay prudent and focussed on rebuilding its financial resilience and cash reserves. As at 31 March 2024, cash and cash equivalents for the Group totalled \$\$2,115 million, while loans and borrowings amounted to \$\$1,925 million.

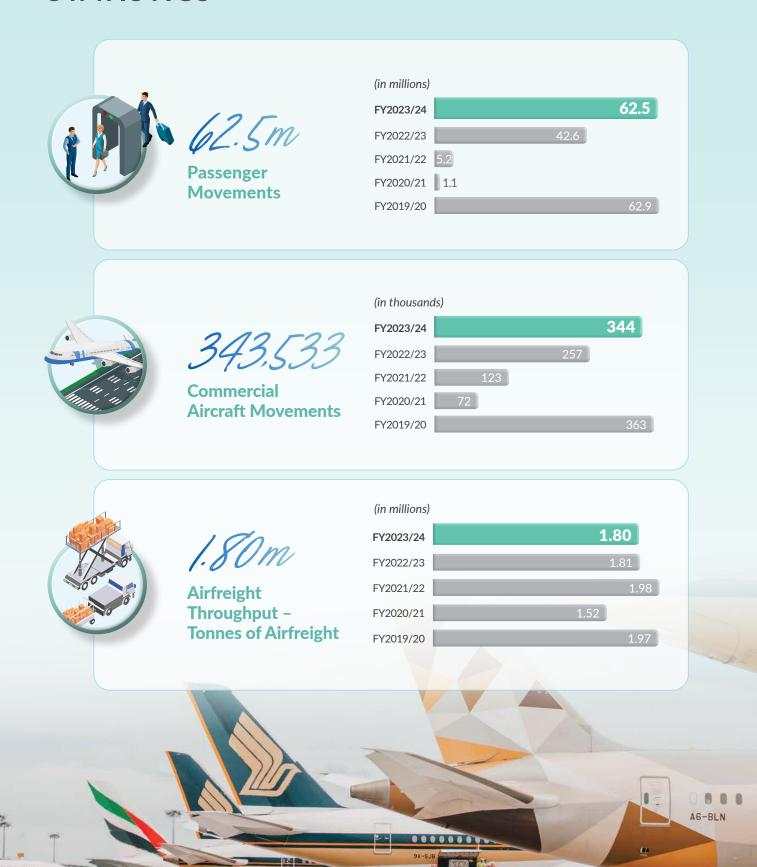
Total equity attributable to the shareholder of the Company grew by \$\$378 million to reach \$\$6,637 million.

### **Outlook**

Looking ahead, the Group remains cautiously optimistic that Changi Airport will be able to achieve 100% recovery of pre-Covid traffic in 2024/25. While the outlook for aviation is promising as demand for air travel continues to be healthy in the first quarter of 2024/25, the Group remains mindful that the industry operates in a highly volatile and fast-changing environment. To stay ahead, the Group will continue to invest in its infrastructure as well as innovative solutions.

The Group remains committed to exercising financial prudence even as it continues to face cost pressures from inflation and escalating manpower costs. The Group will also continue to work closely with the aviation community and government agencies to strengthen Singapore's position as a leading air hub as it forges ahead to achieve long-term sustainable growth.

## AIR TRAFFIC STATISTICS



## GLOBAL CONNECTIVITY

As at 31 March 2024

Abu Dhabi
Addis Ababa
Adelaide
Ahmedabad
Amritsar
Amsterdam
Anchorage

Angeles/Mabalacat

Athens Auckland Bahrain Baku Balikpapan

Bandar Seri Begawan

Bangalore Bangkok Barcelona Beijing Berlin

Bhubaneswar

Brisbane

**Brussels** Busan **Cairns Cape Town** Cebu Changsha Chengdu Chennai **Chiang Mai** Chongqing Christchurch Cincinnati Coimbatore Colombo Copenhagen Da Nang **Dallas Darwin** Davao

Delhi

Denpasar Dhaka Dili Doha Dubai Frankfurt Fukuoka **Fuzhou** Guangzhou Guwahati Haikou Hangzhou Hanoi Hat Yai Hefei Helsinki Ho Chi Minh City

**Hong Kong** 

Honolulu

Houston Hyderabad **Indianapolis Ipoh** Istanbul Jakarta Jeddah Jeju **Jinan Johannesburg** Kaohsiung Kathmandu Kochi **Koh Samui** Kolkata Kota Kinabalu Krabi

**Kuala Lumpur** 

CONNECTING

Kuantan **Kuching Kunming** Langkawi Leipzig Lombok London Los Angeles Louisville Luxembourg Macau Madurai Makassar Malé Manado Manchester Manila Medan

Melbourne Memphis Milan Miri Mumbai Munich Nadi Nagoya Nairobi **Nanchang Nanjing Nanning New York** Ningbo Nouméa Okinawa Osaka **Paris** 

Paro Pekanbaru **Penang Perth Phnom Penh** Phuket **Port Moresby Pune** Qingdao Rome San Francisco Sanya Sapporo Seattle Semarang Seoul Shanghai Sharjah **Shenyang** 

Shenzhen Siem Reap Surabaya **Sydney Taipei** Tianjin Tiruchirapalli Tokyo Trivandrum Vientiane Visakhapatnam Wuhan Wuxi Xi'an Xiamen **Yangon** Yantai Yogyakarta

Zhengzhou Zurich





Financial year 2023/24 was a year of remarkable recovery for Changi Airport. Fuelled by a surge in travel demand that was evident across the globe, there was an upswing in both outbound and inbound travel. 62.5 million passenger movements were registered in 2023/24, a 46% growth from the previous year. Changi emerged stronger with the highest international passenger traffic recovery in 2023 for the Asia-Pacific region. It also secured its position as the fifth busiest airport in the world by seat capacity, according to global travel data provider, OAG.

### Strengthening Changi's global network

CAG stayed focused on enhancing Changi's connectivity to bolster its position as a premier air hub. Two new passenger airlines joined the Changi family – Aero Dili from Timor Leste and TransNusa from Indonesia. Changi also established a new city link to Bhubaneswar in India, and a new service link to China's Beijing Daxing Airport.

Several airlines added new city links to their network. Notably, Thai AirAsia launched its Hat Yai service, previously operated solely by Scoot, offering passengers a wider range of choices. Additionally, Air India and IndiGo started new daily services to Bangalore and Hyderabad, respectively. With the addition of Bhubaneswar, Changi is the most connected hub to India across Southeast Asia with 17 city links, surpassing pre-Covid levels.

Changi also actively engaged its airline partners to encourage them to fully reinstate their pre-Covid flight frequencies and seat capacities. This led to capacity surpassing pre-pandemic levels for some routes.

As of March 2024, Changi restored its connectivity to over 150 city links, served by more than 90 airlines, with over 6,700 weekly flights.

## Strategic partnerships and campaigns to promote travel

Recognising the importance of the China market, a tripartite partnership between CAG, Sentosa Development Corporation and the Singapore Tourism Board (STB) was inked to promote Singapore's iconic attractions in Sentosa and the seamless travel experience at Changi Airport to Chinese travellers. CAG also strengthened its relationship with leading online travel agencies like Trip.com, Traveloka and Tiket through several Memoranda of Understanding to collaborate on inbound campaigns

to attract Chinese and Indonesian tourists.

Additionally, CAG stirred up wanderlust with its 'Shall We Just Go?' travel campaign that promoted the thrill of spontaneous travel. Working with Trip.com, the 12-week initiative saw over 85,000 participants vying for a chance to win an impromptu adventure to one of six destinations – Cebu, Ho Chi Minh City, Jeju, Penang, Phnom Penh, or Surabaya. Besides stimulating travel demand, it helped to raise the profile of Southeast Asian airlines that operated in Changi.

### Boosting Changi's attractiveness as a transit hub

The much anticipated Free Singapore Tour programme returned, as Changi positioned itself as a destination beyond just a transit point. Existing tour itineraries, including the City Sights Tour and Heritage Tour, were revitalised to include new points of interest. A brand-new Changi Precinct Tour was added to unveil the vibrant cultural and historical side of Singapore's eastern region surrounding Changi Airport. This tripartite collaboration with Singapore Airlines and STB aimed to entice transit passengers to discover the unique charm of

Singapore, in hope of converting them into potential future visitors and contribute to Singapore's overall tourism efforts.

CAG also anticipated the return of the fly-cruise passengers post-Covid. Under a three-year partnership between Marella Cruises, STB and TUI Airways, the airline will operate thrice-weekly services from Birmingham, London-Gatwick and Manchester to Singapore between December to April each season, for three years from 2024 to 2026.

## Deepening relationships with industry stakeholders

To build top-of-mind awareness in the aviation sector, CAG resumed participation in trade shows held abroad and locally to meet up with airline and aviation community partners.

As global travel rebounded, CAG also recognised the concerted efforts and resilience of the aviation industry at the annual Changi Airline Awards. The event brought together more than 150 representatives from about 70 airlines for a night of celebration and appreciation. Twenty-four awards in six categories were presented to airlines which made the most significant contribution to passenger and airfreight traffic at Changi Airport in 2022.

CAG remains committed to fostering deeper engagements with its trade partners. Changi Travel Circle 2.0, CAG's B2B community platform for its travel trade partners, was launched with new features. The enhancements helped to facilitate more seamless interactions between members, provided insider resources that equipped partners with valuable market insights and industry updates and gave partners early access to exclusive experiences and deals.



CAG's booth at trade shows allowed Air Hub Division and their Changi aviation partners to have deeper discussions with overseas contacts.

## **Enhancing cargo connectivity** and capacity

In 2023/24, Changi handled 1.8 million tonnes of airfreight throughput. Based on international cargo traffic, Changi ranked 12<sup>th</sup> globally in 2023 and the busiest in Southeast Asia.

During the year, Changi welcomed four new freighter airlines - Air Incheon, Shandong Airlines Cargo, Sichuan Airlines Cargo, and Myanmar National Airlines - to its growing network. It added new freighter city links to Haikou, Nanning, and Yangon. The ongoing collaboration between DHL Express and Singapore Airlines deepened with the successful induction of all five B777 freighters. These freighters operate 12 weekly flights to key destinations such as Cincinnati, Honolulu, Los Angeles and Sydney, further augmenting Changi's freighter connectivity.

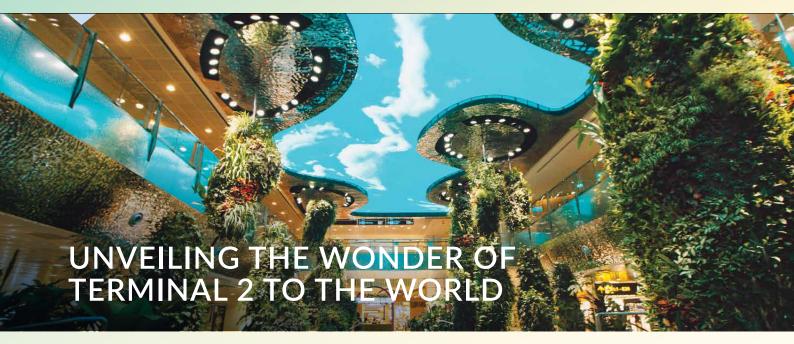
## Strengthening air cargo industry partnerships

Europe was Changi's second largest region by air trade in 2022, and Belgium-Singapore was a key air trade lane for high-value cargo such as biopharmaceuticals. In March 2023, CAG signed a Memorandum of Understanding with Brussels Airport Company to collaborate on initiatives

to improve pharma air logistics and share best practices in driving air cargo operations excellence through digitalisation and innovations.

CAG is the founding and strategic member of Pharma. Aero, another international partnership where it played an active role in spearheading projects to improve air pharma transportation. One notable project was the Green Air Pharma Logistics, where Changi and its project partners developed the building blocks of a Lane Sustainability Readiness Index. These collaborative initiatives showcased Changi's commitment towards the pursuit of greener air logistics.

Changi air cargo hub's dedication to excellence was acknowledged on the international stage through several awards. These included World Air Cargo Awards 2023 for Airport of the Year, the Asian Freight Logistics & Supply Chain Awards 2023 (AFLAS) for Best Airport - Asia (over 1 million tonnes), the Air Cargo News Awards 2023 for Cargo Hub of the Year, the Payload Asia Awards 2023 for Global Hub of the Year. and the STAT Trade Times Award for Excellence in Air Cargo 2023 -International Cargo Airport of the Year. The recognitions attested to Changi's exceptional network, robust connectivity, and best-in-class cargo handling capabilities.



Pushing the boundaries of airport experience and innovation continues to be the hallmark of CAG. On 1 November 2023, CAG announced the full reopening of Terminal 2 (T2) ahead of schedule after completing three and a half years of engineering and expansion works.

T2's expansion added more than 21,000 square metres to the terminal building to support additional infrastructure, new systems and expanded retail options. Its reopening marked the return of full four-terminal operations at Changi Airport and

boosted capacity to 90 million passengers per annum, a timely move in view of the strong air traffic recovery.

### Fortifying passenger service

Prior to T2's full reopening, CAG conducted numerous operational readiness trials with airport partners and workers. T2's North wing was opened on 28 September 2023, following the operationalisation of the South wing in 2022. Test flights were carried out to ensure airport staff at all touch points across T2's

North wing were familiar with the operations.

CAG worked with nine airlines
– Air Japan, All Nippon Airways,
Ethiopian Airlines, Etihad Airways,
FireFly, IndiGo, Lufthansa,
Singapore Airlines (selected flights)
and SWISS – for a smooth crossterminal relocation to T2 North.
Sixteen airlines now operate at T2.

To provide greater convenience to passengers, T2 reconfigured its departure hall layout and nearly doubled the number of automated check-in kiosks and bag drop machines in its new central common-use Fast and Seamless Travel (FAST) zone. Immigration halls were also expanded to accommodate more automated immigration lanes to facilitate quicker processing of passengers. To make the travel journey more inclusive, T2 rolled out automated Special Assistance Lanes for individuals with disabilities and families with young children at both arrival and departure immigration, a first at Changi Airport.

The baggage claim hall was enhanced with the extension of two existing baggage belts to



Senior Minister and Coordinating Minister for National Security, Teo Chee Hean (centre), graced the T2 Expansion Opening Ceremony alongside the launch of new attractions.

accommodate higher bag volumes, particularly from wide-body aircraft. A state-of-the-art Early Baggage Storage (EBS) facility was also built. This fully automated EBS system increased the storage capacity of bags from 2,200 to 2,400 bags at any given time. It is powered by automated cranes which can store and retrieve bags in designated storage slots, greatly reducing manpower needs while improving efficiency and productivity.

T2's critical systems and building equipment at the end of their operational lives were also upgraded to more efficient models. A new chiller plant was installed to reduce energy consumption for cooling by 30%, while still maintaining passenger comfort.

### New magical attractions at T2

As a world-class airport operator, CAG broke new ground in airport experience with the T2 expansion project. T2's design concept is heavily inspired by nature. Natural materials are used in wall cladding and flooring to create a soothing ambience. Large green columns with a myriad of plants traversing the departure and arrival halls create a lush garden experience.

At the heart of T2's departure hall is one of Changi's latest landside attractions, 'The Wonderfall'. Set amid a vertical garden, this fourstorey-high digital display features a majestic waterfall cascading over megalithic boulders in melodic rhythms of nature. It is truly a feast for the senses, transporting visitors to an immersive world of wonder.

Inside the departure transit hall, another breathtaking attraction awaits. A brand-new garden, 'Dreamscape', harmoniously



Pushing the boundaries of airport experience and innovation continues to be the hallmark of CAG.

combined digital content, horticulture and fish in the same space. With its meticulously landscaped backdrop, seamlessly joining a 'digital sky' which changes its hues depending on the time and weather of the day, travellers are set to be mesmerised.

The immersive experience continues at 'Flap Pix', an installation which features the iconic mechanical split-flap flight information board, previously used in T2. Using 1,080 split-flaps, visitors can capture selfies and watch the images come to life on the board.

A brand-new children's playground, '2 Bears Hideout', can also be found in T2's transit area. Children can snuggle up in a beehive, bounce on a honeycomb, or let their imagination run wild in this natural play space.

## Rejuvenating concession spaces

New retail offerings with freshly designed spaces were introduced at T2 to captivate visitors and passengers, including 27 new-to-Changi brands.

The debut of Jones the Grocer, Changi's first landside duplex cafe, brought excitement to the departure hall. This renowned artisanal cafe featured a grab-andgo deli-style food counter on the ground floor, while the upper level housed a bar and restaurant with a scenic view of the departure hall.

Several local homegrown brands, such as Lynk Fragrances and Baker's Well, also made their debuts in T2. These uniquely Singaporean brands showcased Singapore's rich heritage and creations to an international audience.



Diners can enjoy their meals under natural light and flora at the new Gourmet Garden.

### UNVEILING THE WONDER OF TERMINAL 2 TO THE WORLD

Other notable F&B brands included popular ramen chain, Keisuke Ramen, which set up its outlet for the very first time in Changi. Newto-Changi concepts included A-Roy Thai, JINJJA Kitchen, Kenangan Coffee, Cafe O, Swensen's Unlimited and XW Western Grill, which provided fresh dining options such as buffets.

For passengers looking to dine in natural settings, the new Gourmet Garden in T2's transit area offers a unique experience with an expansive view of the apron and verdant foliage cascading overhead. The dining area showcases Singapore's distinctive flavours, including The Satay Club by Harry's, Wee Nam Kee Chicken Rice, The Hainan Story Bakery, CRAVE Nasi Lemak, Old Chang Kee and Hard Rock Café.

To delight passengers with a penchant for wines and spirits,



Travellers can sample new whiskey selections while relaxing at the Forest of Li Bai.

Lotte Duty Free Wines & Spirits renovated the double-storey store and infused it with several new features, including a robot bartender, Toni. The store features a unique 30-metre LED ring above the bar, displaying scenes inspired by the work of Tang dynasty poet, Li Bai – 'Drinking Alone Under the Moon'. The 'Forest of Li Bai' located at Lotte's upper level allows passengers to experience 18 whiskey varieties from a dispenser wall and bask in the vibrant hues of the LED video ceiling. In addition,

they can also snap selfies with images of renowned K-pop artists using an intelligent selfie mirror.

### T2 recognised for its excellence

T2 expansion project won the Building and Construction Authority's (BCA) Universal Design Excellence Award for its design and user-friendliness, a strong recognition to its intuitive and inclusive design features that strives to provide comfort for all passengers and visitors. Additionally, it was awarded the BCA Green Mark Platinum for its sustainability features, attesting to the highest level of environmental performance.





Amid robust resurgence in travel in financial year 2023/24, CAG continued to deliver exceptional service to its passengers. In recognition of its relentless commitment to service excellence, Changi Airport won four Airport Service Quality (ASQ) awards from Airports Council International in 2023. In the Asia-Pacific region, Changi was named Best Airport (over 40 million passengers), Airport with the Most Dedicated Staff, Easiest Airport Journey, and Cleanest Airport. These awards attest to Changi's dedication to delivering a top-class airport experience.

## Strengthening partnerships for smoother journeys

CAG collaborated with the Immigration & Checkpoints Authority (ICA) to enhance the Automated Clearance Initiative. Automated lane eligibility was expanded to 60 foreign nationalities, and 16 more automated lanes were deployed across Terminals 1 and 3's arrival halls. In August 2023, autoclearance for non-biometric passport holders was also rolled out. These efforts resulted in faster immigration clearance and

fewer bottlenecks, with arrival automated lane usage among arriving passengers soaring to a high of 75%.

In preparation for the New Clearance Concept (NCC), which will allow departing passengers to clear immigration using biometric data without the need to show their passport, CAG embarked on an immigration hall revamp across Terminals 1, 3 and 4 to install ICA's new automated gates. The NCC pilot was launched in Terminal 2 (T2) in April 2024 and will be rolled out progressively to all terminals in 2024.

To rebalance traffic demand and optimise capacity across the four terminals, CAG conducted multiple intra-terminal and inter-terminal airline relocations. A series of tests and flight trials with airlines such as Etihad Airways, United Airlines and Vietnam Airlines was implemented to ensure a smooth cutover to the new operating terminals.

## Leveraging technology for efficiency

As a company focused on innovation, CAG constantly looks for new ways to make its

operations more efficient. It introduced autonomous cleaning robots in Terminals 2 and 4 to enhance its cleaning processes. These robots can automatically follow a programmed path to effectively sweep and vacuum assigned locations without the need for human intervention, generating up to 30% in manpower savings. CAG plans to scale up the deployment of such robots in Terminals 1 and 3.

As CAG moves towards more dynamic, time-critical, responsive and data-driven airport operations, it also rolled out its new Enterprise Data Platform Plus (EDP+) to transform data collection, processing and analysis from the traditional post-event mode, to near real-time. This enables CAG to achieve a much higher level of operational excellence in areas such as situation awareness, realtime monitoring and alerts, and systems and service recovery. The availability of time-critical, processed data in this new integrated platform presented new opportunities for innovations to enhance manpower productivity and user experience. As a result of these achievements, CAG was named the 'Team of the Year -

### ENHANCING THE CHANGI EXPERIENCE



Free bicycle rides allowed layover passengers to explore Changi's vicinity, such as the Changi Jurassic Mile.

Innovation' by CIO ASEAN at its CIO100 Award ceremony held in October 2023.

### Refreshing traveller and visitor experiences

In 2023/24, CAG continued to enhance the traveller experience beyond traditional airport boundaries. The Free Bicycle Rides campaign, launched in November 2023, was well-received and saw nearly 1,500 bookings over a five-month period. The year-long campaign offered a free two-hour bicycle rental service to passengers

with layovers of at least 5.5 hours, allowing them to explore nearby attractions such as the Changi Jurassic Mile and East Coast Park.

For the fourth consecutive year, CAG hosted the Changi Festive Village as part of the year-end festivities to engage airport visitors. The latest instalment in November 2023 attracted over 350,000 visitors. The departure hall at Terminal 3 (T3) was transformed into an insta-worthy Candy Wonderland, featuring a cupcake Ferris Wheel, a Christmas bear,

and a gingerbread house. Daily multisensory snowfalls and live entertainment delighted visitors and passengers alike.

Visitors to Candy Carnival were also treated to over 50 confectionary-themed game booths and 18 themed rides. Crowd favourites like the bouncy castle, go-karting attraction and the snow house made their return, sweetening visitors' experiences. The Candy Snow House provided a sub-zero winter getaway for visitors, inviting them to make merry with snow slides, ice sculptures and sports games. Carnival goers also filled their bellies with tasty carnival fare from more than 10 food trucks and stalls.

A notable addition to 2023's festivities was the virtual extension of the Changi Festive Village on Roblox. CandyVerse, a replica of T3's real-world Candy Wonderland, delighted 'airport visitors' in the virtual world. Over 384,000 global participants explored the virtual land of sweets and competed to win special edition prizes, including a 1.2-metre-tall toy bear plushie.

Shoppers could also purchase candy-themed premiums with a



 $Innovative\ horticulture\ displays\ often\ adorn\ Changi's\ terminals\ during\ festivals,\ such\ as\ Deepavali.$ 

minimum spend during the festive period. These Changi-exclusive items ranged from travel accessories to an adorable plush bear.

Throughout the year, CAG created memorable experiences for visitors with thematic horticulture displays during festivals such as Eid al-Fitr, Lunar New Year, and Mid-Autumn Festival. The Deepavali and Christmas displays garnered social media traction, with over 732,000 and 430,000 engagements respectively.

## Strengthening the ONE Changi community

CAG continued to strengthen its partnership with the airport community. In February 2024, Changi's Annual Airport Celebration returned full-scale for the first time since Covid-19. The event honoured outstanding individuals in the airport community for their exceptional contributions and unwavering dedication to deliver the Changi Experience. Twenty-one awards were given across five categories. Transport Minister Chee Hong Tat graced the ceremony and

presented the top two awards: Service Personality of the Year and Service Partner of the Year. The latter was awarded to P-Serv for the organisation's dedication to cultivating a multiskilled workforce, and leveraging technology to elevate passenger service standards throughout the pandemic.

The ONE Gracious & Green Changi campaign was also launched in May 2023 to nurture a caring airport environment and promote sustainability among staff. Over 800 airport staff attended the special carnival featuring games and learning stations. To support the special needs youth from Metta Welfare Association, sustainable products made by them were put on sale during this special occasion. Representatives from Smarte Carte, one of CAG's ONE Changi partners, also came onboard as green ambassadors during the carnival.

CAG constantly seeks new avenues to make a difference to the community, with its airport partners. It hosted the inaugural Changi Airport Community Charity



cag honoured outstanding individuals in the airport community for their exceptional contributions and unwavering dedication to delivering the Changi Experience.

Golf event to support the building of Maitri School, a new Special Education School for students with moderate to severe autism. The event raised S\$500,000 with the overwhelming support of over 70 airport partners, a true testament to the collective impact the ONE Changi community can make.



Changi's Annual Airport Celebration recognises exceptional acts of service from the ONE Changi community.



As air traffic continues to grow and passenger expectations increase, CAG doubled down on innovation and investments in technology to keep safety standards high, while strengthening its overall operational resilience.

## Safety and security as key priorities

Safety and security remain paramount at both Changi and Seletar airports. To continue promoting a strong safety culture within the airport community, CAG held the 7<sup>th</sup> Airport Safety Awards programme to recognise notable safety acts and safety innovation. The programme saw over 600 airport staff being appreciated for their contributions. It was well-received by the airport community because of the strong focus on safety amid the rapid recovery of air travel post-Covid.

Compliance with aviation regulations was another key focus for CAG throughout the year. CAG began the renewal process for the aerodrome certificates of both Changi and Seletar that takes place every five years. Guided by the Aerodrome Recertification Steering Committee, the team worked closely with the Civil

Aviation Authority of Singapore (CAAS) for a series of audits to be conducted to assess that regulatory requirements across documentation, operations, facilities and infrastructure were well met, and that CAG's Safety Management System was robust.

On 1 December 2023, CAG successfully reopened Runway 2, which had undergone a significant improvement, including the construction of connecting taxiways. This process was stringently managed to ensure that the proceedings were compliant with strict regulatory standards. Particular focus was placed on design and construction considerations, safety controls, and system readiness. An upgraded iFerret 2.0 system, with improved automated runway surface Foreign Object Debris detection capabilities, was also commissioned as part of the runway's reopening. These initiatives improved aviation safety and operational efficiency at Changi Airport.

On the security front, CAG commenced trials for the Automated Prohibited Items Detection System (APIDS) to lift Changi Airport's security screening technology to the next level. APIDS uses artificial intelligence (AI) and machine learning to enhance the speed and accuracy of security screening for hand-carry baggage. The system also improves the speed of security clearance, and allows for optimised deployment of manpower resources.

## Remaining ever-ready for emergencies

Being able to respond quickly to an emergency is key to airport business continuity at both Changi and Seletar airports. To this end, CAG continued to explore new ways to improve its capabilities and protocols, and to be ready to respond to unexpected situations at a moment's notice.

During Exercise Bobcat – the annual full-scale aircraft crash exercise at Changi Airport – teams took the opportunity to evaluate the effectiveness of their crisis protocols under realistic conditions. Involving more than 20 agencies and over 200 role-players, Exercise Bobcat 2023 marked the first time where CAG was able to simulate the actual steps in deploying field teams from the Immigration & Checkpoints Authority to facilitate immigration clearance of hospitalised passengers and

reuniting these passengers with their next-of-kin at Changi General Hospital.

The exercise also served as a testbed for new technologies that could better assist the Airport Emergency Service (AES) Division in their response efforts. For example, the CASEVAC (casualty evacuation) Bot, which can autonomously convey injured passengers to a safety zone, was upgraded to assist firefighters in the physically demanding work of laying close to 150 metres of water lines. The robots free up precious AES capacity to focus on the lifesaving rescue efforts, addressing limitations around manpower and endurance.

Similar enhancements were trialled during Seletar Airport's full-scale crisis exercise, Exercise Bear, where uninjured passengers were processed at a new off-site location. The reconciliation of these uninjured passengers with their loved ones was shortened through an enhanced online incident reporting platform, AES E-Net, that enabled real-time sharing of information between the Casualty

Clearance Station and the Private Matching Area. Following the success of the trial, the full system was also deployed during Exercise Bobcat at Changi Airport.

### **Engineering solutions for** the future

CAG continued to ensure the resilience of infrastructure and facilities to future-proof Changi Airport in anticipation of increasing travel demand.

Airfield infrastructure expansion works were completed in the year in tandem with strong traffic recovery post-Covid. To handle growing aircraft movements at Changi, CAG brought forward the completion of four new aircraft parking stands strategically located in front of Terminal 1 and the Changi Airfreight Centre. The completed stands augment Changi's capacity to handle layover parking, cargo operations, and remote passenger flight operations.

Separately, a project to revitalise the structural bearings of four key aircraft and vehicular bridges across the roads that lead to Changi Airport was also undertaken – the first since
Changi started operations in 1981.
Careful planning was required
for this project as the bearing
replacement works had to be
completed during off-peak periods
to minimise disruptions to daily
airport operations and 24/7 traffic
flow along Airport Boulevard.
With the support and input from
multiple stakeholders, works were
successfully completed, extending
the serviceability life span of the
bridges by another three to
four decades.

Besides infrastructure improvements, innovative solutions were trialled to improve productivity. The fully-automated passenger loading bridge, which leveraged technology to dock the aircraft safely at the touch of a button, would help to free up airside staff from the current manual process. It enables airside staff to focus on other critical tasks, and deliver faster and consistent docking operations through simultaneous automatic aircraft door detection.

Many underground services, such as airfield lighting and high-tension electrical cables, run hundreds of kilometres under the airfield. To facilitate upkeeping layout plans for underground services, CAG's Engineering and Development Cluster created the Augmented Reality Underground Service Visualiser (AUSV), a mobile app that digitally captures and presents the coordinates and routes of underground cables in augmented reality. This enables on-site maintenance staff to easily identify their position in real time and examine below-ground with 'X-ray eyes'. In turn, this has made maintenance and repair work more efficient.



AES firefighters practised their emergency response as part of Exercise Bobcat 2023.

## TRANSFORMING AIRPORT OPERATIONS



CAG's management, advisors, employees and Seletar Airport's partners gathered at Seletar's Old Passenger Building.

These in-house innovations were huge steps towards making the airfield operations and maintenance regime future-ready, safer and more productive.

Over in the public area, the increased demand for accommodation at Changi prompted CAG to explore the idea of developing a new hotel above the existing coach stand at Terminal 2 (T2). The hotel would serve the modern traveller's market segment and complement the existing Crowne Plaza airport hotel facility located at Terminal 3 (T3) as well as other parallel developments at the Changi Precinct. To this end, a technical feasibility study was commissioned while CAG's business development team simultaneously assessed the commercial viability of this project. With these prerequisites met, CAG launched the hotel development tender to invite interested investors, with a working goal of having the hotel operationally ready by 2027.

### **Supporting national initiatives**

In line with the national push to strengthen Singapore's air border surveillance of both cargo and air travellers, Home Team Science and Technology Agency appointed CAG as a project manager to construct a laboratory facility in Changi Airfreight Centre. The lab allows for requisite biological and chemical tests to be carried out on demand, and is expected to be completed by the first quarter of 2025.

CAG is also among the pioneer batch of private entities in the construction industry to adopt a collaborative form of contract for the refurbishment of Express Courier Centre 2. This collaborative contract focuses on fairer risk allocation and helps to foster a partnership approach with CAG's business partners. The collaborative contracting initiative also supports Singapore's Building and Construction Authority's drive to build a more harmonious

work environment in the Built-Environment sector, which is in line with CAG's existing practice.

### **Seletar Airport**

Over at Seletar Airport, the Single Runway Frequency was implemented in July 2023 to improve runway safety. Rigorous training and tests were conducted for drivers operating runway vehicles for a smooth transition to this new system. Pilots were also briefed on the updated procedures to operate under this new arrangement.

As part of trials to enhance safety and maintenance efficiency, Seletar Airport employed tethered drones to inspect and detect visual abnormalities on high masts. These checks were conducted during both day and night conditions. In addition, grass cutting robots were deployed across six areas at the airside, with accompanying studies on potential time and manpower savings. To boost the passenger experience, the Seletar team also collaborated with the Shopping Concierge and iShopChangi teams to launch e-commerce services.

All in all, these trials reflected Seletar Airport's drive to continuously improve its operational efficiency and customer satisfaction.

In financial year 2023/24, the former Seletar Airport Passenger Terminal Building was reinstated and refurbished to prepare the facility to be handed over from CAAS, to the Singapore Land Authority. As Singapore's first civilian airport, a commemoration event was held in April 2023 to mark its significance in Singapore's aviation history. CAG's management, advisors, employees and Seletar Airport's partners gathered for a final visit to this historic site before its closure to the public.



In financial year 2023/24, CAG continued to develop the Terminal 5 (T5) design and started preparations for its construction, which is expected to start in early 2025. Concurrently, CAG continued to work on T5's dedicated airside road tunnel and inter-terminal tunnels.

### Integrating T5 with existing terminals

When T5 opens in the mid-2030s, passengers will be connected to the other terminals in Changi Airport and baggage will be transferred across terminals. To facilitate these connections, CAG has started the construction of an annex building at T2. known as the T2 Connection. It will house the future interchange for the baggage handling system, as well as a station and depot for the automated people mover system. The T2 Connection will also be linked with the interterminal tunnels, ensuring efficient baggage movement and a seamless passenger transfer experience between T5 and other terminals in the future.

#### **Reopening of Runway 2**

Following the closure of Runway 2 in December 2020, CAG carried

out an extensive upgrade to the existing runway, including the construction of new taxiways, improvements to the airfield lighting control systems, as well as additional navigational aids. The drainage system was also redesigned to cope with climate change.

In December 2023, Runway 2 reopened, allowing aircraft to reduce the taxiing distance to the terminal buildings. When the 3-runway system becomes operational, it will significantly increase Changi Airport's aircraft handling capacity.

### Transforming future airport operations

CAG will need robotics and solutions to automate the handling processes in airport operations where possible. In collaboration with Aurrigo, a leading international provider of airport transport technology, CAG has been trialling the use of the Auto-DollyTug®, the latest version of its electric-powered autonomous individual baggage trailer, at Changi Airport.

Combining the utility of a baggage tractor and capability of an airport

dolly to carry unit load devices (ULD), the latest Auto-DollyTug® can rotate on its own and use its groundbreaking sideways drive system to move sideways into tight spaces. This enables the swift delivery of a single ULD even with other ground support equipment close to the aircraft. This automates the task of driving baggage tractors and transporters, aimed at alleviating manpower shortages faced by ground handling agents. Automating airside processes can also create opportunities to improve baggage delivery efficiency and enhance passenger service levels.



Changi Airport is the first in the world to test the Auto-DollyTug's ability to autonomously load and unload ULDs at the aircraft stand.



With Changi's passenger traffic picking up pace steadily over the past year, there was an improvement in retail growth with concession sales reaching over \$\$2 billion in 2023.

Changi's exciting retail mix also continued to grow swiftly, with over 150 leases awarded, including more than 40 being new-to-Changi brands in the past financial year. CAG worked closely with tenants to bring vibrancy and footfall to Changi Airport's shopping and dining landscape through a curation of campaigns, activations, new stores and innovative experiences.

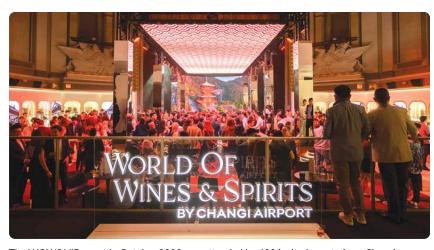
## Injecting excitement into the everyday with airport-wide initiatives

In June 2023, 'Be A Changi Millionaire' made its long-awaited return after a three-year hiatus. For the first time, shoppers did not have to meet a minimum spend to take part in this yearlong airport-wide retail campaign. This broadened participation and allowed even more shoppers across Changi Airport, Jewel and iShopChangi a chance to win daily instant prizes, such as \$\$1,000 cash, air tickets and staycations. Shoppers who spend above \$\$50

qualify for a chance at S\$1 million in cash or a Porsche Macan in the Grand Draw event to be held in the second half of 2024.

From September 2023 to February 2024, the 'World of Wines and Spirits (WOWS) returned for its second edition after a successful run the year before. The event boasted a collection of over 100 premium and rare liquor products from nearly 60 globally acclaimed brands, available for purchase on the WOWS online portal. Both the masterclasses and VIP event at Capitol Theatre in October 2023 featured immersive culinary experiences, with brand ambassadors sharing exclusive insights into the appreciation of spirits and Michelin-starred chefs uniting their culinary prowess to specially craft exquisite menus for attendees.

To grow the in-airport advertising business, new digital assets were launched in prominent sites, such as the high-definition LED displays in Terminal 2's (T2) departure hall, the 360 digital gateway at Terminal 3 (T3), and screens at T2 and T3 Jewel link bridges. These displays allow advertisers to maximise brand exposure using high impact visuals.



The WOWS VIP event in October 2023 was attended by 420 invited guests from Changi Rewards, Lotte, and other Changi partners.

### Tailoring unforgettable retail experiences for travellers

Targeted campaigns were tailored to recapture the interest of Chinese travellers, especially with the reopening of China's borders in early 2023. Campaigns were rolled out during key travel seasons, including Lunar New Year and Golden Week, in partnership with major payment providers preferred by the Chinese, resulting in an encouraging uplift in sales.

Changi 1st activations continued to delight travellers with exclusive launches of the latest limitededition products and exceptional shopping experiences. Over the past year, there were 15 Changi 1st collaborations with brands like KILIAN Paris, House of Suntory, and Jo Malone London, creating overall increased demand especially in the liquor and beauty categories.

A myriad of new shops and concepts have also been introduced in transit to rejuvenate the passenger experience, ranging from top luxury labels like Bulgari, Cartier, Qeelin and TODS, to beloved lifestyle brands like LEGO and MLB Korea. Local offerings also made their debut to showcase the specialties of Singapore, including jeweller Asian Artistry and wellness service Natureland Spa.

Innovative man-less concepts continue to debut in the transit areas, bringing convenience to passengers, and increasing manpower productivity. These include ELLA, a fully automated robotic barista at T2 and T3, as well as the Al-powered, unmanned Hydrate convenience store at T3 which allows customers to purchase hot drinks, snacks, souvenirs and more with one tap of their credit card at the entrance. Like Lotte Duty Free's flagship store in T2, the

equally impressive T3 equivalent also features their state-of-the-art robotic bartender. Unique to the T3 store is an interactive sommelier which helps visitors select the wine most suited for their palate.

Changi continued to wow customers beyond Singapore's shores with retail innovations such as the Changi Pay digital wallet's new overseas payment feature. Launched in September 2023, Singapore residents can now pay like a local at tens of millions of Alipay merchants. First rolled out for use in China, it allows Changi's customers to take advantage of the local preference for QR payments. The service has since been expanded to other Asian countries, such as Japan and Malaysia, and will be expanded to even more countries in 2024.

## Diversifying Changi's e-commerce business to anticipate customer needs

Changi Airport's e-commerce platform, iShopChangi, made strides in growing the business in the last year, doubling its offered brands to over 2,000, including more



Innovative manless concepts
continue to debut
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than 100 off-airport merchants across categories, such as beauty, electronics, wellness and more.

Campaigns, such as the inaugural 'Tax AbsorbMania', where participants could exchange the Goods and Service Tax (GST) in their receipts for iShopChangi credits, as well as partnerships with local brands, propelled iShopChangi into



## CURATING MAGICAL SHOPPING AND DINING MOMENTS



The highly anticipated '2XGST' campaign allows Changi Rewards members to enjoy additional discounts on top of tax-absorbed purchases with a minimum spend.

the top three of YouGov's 'October 2023 Biggest Brand Movers' for the first time and contributed to more than 20% of iShopChangi's new customers.

To further widen its customer base, sales channels were expanded to serve passengers travelling through Seletar Airport and airlines. A special partnership with ZIPAIR made iShopChangi the airline's in-flight tax and duty-free sales retailer, allowing passengers to make purchases six hours, or earlier, online or in-air, before their arrival flight landing time and collect their purchases upon arrival at Changi Airport or have purchases delivered to their residence.

New non-traveller services like ondemand, same-day delivery and giftwrapping were launched to cater to last-minute and special occasion needs, offering convenience, personalisation, and reliability to customers.

Through iShopChangi, non-airport retail merchants have also been able

to curate a selection of over 1,000 products to be sold to travellers, allowing them to successfully traverse both segments while providing more variety to travelling shoppers.

## Revitalising public areas to make Changi a go-to lifestyle destination

A regular cadence of exciting events and promotions helped to position Changi Airport's public areas as a must-visit location for local visitors and travellers.

During the 2023 June school holidays, CAG collaborated with Hasbro Gaming to turn T3's departure hall into a wonderland of larger-than-life board games, such as 'Monopoly', 'Connect 4', and 'Game of Life'. A 'Hungry Hungry Hippos'-themed inflatable playground, photo spots, and exclusive premiums also added to the fun. Similarly, the 2024 March school holiday's 'Explore and Play at Changi' enticed visitors to T3 with a whimsical tropical forest

playground and playful otterthemed photo spots.

A plethora of shopping and dining campaigns keep Changi's landside constantly abuzz with activity. 'Feast at Changi' coincided with the opening of new dining options at T2, incentivising visitors to spend S\$60 via Mastercard on Changi Pay at Changi's F&B outlets to receive a S\$10 Changi Pay return e-voucher. The highly anticipated '2XGST' campaign made its return in August 2023 and again in January 2024, providing shoppers some reprieve from the hike in GST. On top of GST-absorbed prices, Changi Rewards members also enjoyed an additional 9% off their purchases with a minimum spend. For the 2024 Lunar New Year celebrations, Changi introduced more retail excitement with its red packet giftwith-purchase promotion, festive feasting campaign and two-hour free parking promotions.

ST3PS, T3's public auditorium, was a hive of activity over the course of the year. Daily movie screenings and live football matches kept both first-time visitors and regulars coming back for more. Weekly yoga lessons, exhibitions, National Day and Christmas celebrations add life to the space, also bringing in footfall to the surrounding shops.

To meet the varied needs of Changi's visitors and travellers, the JustCo co-working space was opened at T3 in October 2023. As Asia's first pay-per-minute co-working centre in an airport with traveller-friendly amenities, the space includes a mixture of 70 private offices, 45 pay-per-use workstations, an event space and napping pods. To date, all private offices have been leased out, and the meeting rooms and event spaces also serve as alternative venues for airport staff to host corporate activities.



In financial year 2023/24, CAG launched several initiatives to personalise and enhance different digital journeys for customers. These initiatives underscore CAG's commitment to delivering exceptional customer experiences, enriching engagements, and setting new benchmarks in digital innovation on the world stage.

### App-solutely magical: Changi App upgrade takes flight

The Changi App went through a milestone transformation, reflecting its pivotal role in CAG's digital ecosystem. CAG introduced a new brand interface, enhancing the app's user-friendliness and making it even easier to navigate. This upgrade enables customers to use the app more seamlessly for travel, shopping and dining.

Previously known as iChangi, the revamped app offers customers a host of new and enhanced features to provide a seamless and stress-free journey through Changi Airport. For example, when customers save their flight details on the app, they now receive personalised travel information, recommendations for relevant facilities and services, travel checklists, advisories and helpful

push notifications on their flight and baggage status.

To encourage even more travellers to explore this new feature, CAG launched a 12-month campaign, 'The Great Changi Appscapade', in November 2023. Customers who save their flights using the Changi App stand a chance to win four business class tickets to a destination revealed at the start of each month, along with instant-win prizes such as Changi Rewards points and Changi Pay vouchers.

Changi App users are also able to make restaurant reservations

at participating venues across Changi Airport's terminals and Jewel. They can also pre-book tickets to various airport events and attractions, as well as redeem benefits with Changi Rewards points earned from spending across the terminals, Jewel and iShopChangi.

Following the upgrade, the app's monthly active user base increased by nearly 30%. Leveraging modern modular technical architecture, the app's new build will enable CAG to scale the app, and drive productivity and efficiency by delivering more features and updates faster and more flexibly.



The revamped Changi App seeks to deliver the magic of Changi to customers' fingertips.

## ENHANCING DIGITAL ENCHANTMENT

## Personalised communications with My Travel Journey

CAG enhanced its 'My Travel Journey' programme with the vision of providing personalised information to customers who would be travelling soon, to help them in their journey to and through Changi Airport. The programme was the outcome of a strategic review of Changi Airport's customer engagement journey that involved 14 cross-functional teams within the organisation. The goal was to unify individual digital touchpoints to create a more cohesive and holistic experience for our customers.

The results were positive, with the net promoter score for the programme showing a 17% improvement from the previous year. Looking ahead, there are plans to expand the programme to cover non-travel customer journeys, and to use marketing technology to drive more personalisation based

on customers' preferences and their interactions with Changi Airport.

### Reinventing the Changi Experience

To enhance engagement with its customers and strengthen Changi Airport's position as more than a transport node, CAG launched ChangiVerse on Roblox, becoming one of the first airports to officially launch a virtual world on the platform. Developed in partnership with Accenture, ChangiVerse revolutionised the online airport experience by giving fans of Changi, or those who have not had the chance to travel through the airport, the opportunity to explore, interact, and engage with Changi Airport in the digital space.

ChangiVerse complements the on-ground experience at Changi Airport by playfully reimagining notable sights such as the Changi control tower, Terminals 2 and 3, Jewel, Jurassic Mile, among others. The virtual world also features mini-games that simulate airport experiences like flight check-in and baggage claim, with players accumulating experience points to level up and gain access to

exclusive items or areas. Anchor games such as the Changi Kart racing game and Gardentopia gardening game were also designed to put a whimsical twist on the Changi Experience. Other activities players can enjoy include bouncing on clouds, customising planes, chilling in glamping tents that celebrate festive seasons, or relaxing a bustling café.

Since its launch, ChangiVerse has seen more than nine million visits and over three million digital wearable redemptions.

#### Transforming search: enabling a seamless and efficient digital experience

Customers experienced a smoother and more efficient search function on the Changi App over the past year. The implementation of a unified search engine in February 2024 ensured consistent, reliable and relevant search results. Similar enhancements for changiairport.com are planned for the coming year.

This effort set the groundwork for further improvements, with the second phase focusing on Alpowered algorithms to drive search capabilities as Generative Al and chat capabilities are concurrently explored. These enhancements aim to provide customers with an intuitive and precise search experience across these key digital platforms.

Working through challenges such as evolving user search behaviours and the need for ongoing algorithm optimisation, CAG aims to provide customers with a consistent, flexible, and user-friendly search experience, allowing customers to find easily find the information that they seek.



CAG launched the 12-month 'The Great Appscapade' campaign to encourage customers to use the Changi App to save their flights.



Established in 2012, Changi Travel Services (CTS), a whollyowned subsidiary of CAG with the mission to enhance travel services, has continually evolved to meet the dynamic needs of travellers. Through its consumerfacing brand, Changi Recommends, CTS has positioned itself as a one-stop shop for all things travel, committed to delivering exceptional travel solutions aimed at simplifying travel and enhancing connectivity for customers worldwide. Over the year, as global air travel continued on its uptrend, CTS has seen a steady recovery in its business to pre-Covid levels.

Staying ahead of the latest industry trends, Changi Recommends introduced the Changi Travel eSIM and Changi i-SIM as more travellers took to the skies, establishing it as one of Singapore's leading travel eSIM providers. These versatile global travel SIM cards give customers the flexibility of topping up onthe-go and as needed, eliminating the hassle of buying multiple SIM cards. Within the first few months of the launch of these SIM options, Changi Recommends emerged as one of the top travel eSIM providers in Singapore.

In the past year, Changi Mobile, the Mobile Virtual Network Operator business arm of CTS, has made significant progress in expanding its telecommunications services to new market segments. Changi Mobile has not only refined its existing plans to cater to the diverse needs and profiles of the Singapore market, but has also expanded its offerings to attract tourists with new travel plans, upsized data options of up to 100 GB and roaming options. The business has seen a significant growth in its subscriber base, with a notable 17% increase compared to the previous year.



Over the year, as global air travel continued on its uptrend, CTS has seen a steady recovery in its business to pre-Covid levels.



The Changi Travel eSIM is among the new products introduced by Changi Recommends this year.



As global air travel continues to rebound, Jewel Changi Airport (Jewel) is gleaming with many growth possibilities. Jewel registered a 26% uptick in footfall in financial year 2023/24 compared to the previous year. Overall sales also grew by 20%, and even surpassed pre-Covid levels. Of the total footfall registered, 30% were overseas travellers, with the top five nationalities being tourists from China, Malaysia, Taiwan, The United States of America and Indonesia.

More than 70 new brands spanning various categories also opened in Jewel in 2023/24. This included brands like Nesuto and PS Café, Agnes B, Goelia and Polo Ralph Lauren, Grand Seiko, Tudor, Tag Heuer and Watches of Switzerland. as well as Minmed Wellness Collective and Natureland. Of the new entrants to Jewel in 2023/24, 16 were new-to-market brands.

Riding the wave of air travel



of both local and international brands, leading to a significant boost in sales.

#### **Exclusive events build** brand love

Fans and enthusiasts of comic superheroes The Avengers flocked to Jewel at a large-scale Marvel-themed activation from May to August 2023. Avengers Assemble at Shiseido Forest Valley showcased some of the most popular action characters, including a 5-metre tall Iron Man display, and kept visitors enthralled with 3D installations and interactive displays. The fanfare did not end at the Shiseido Forest Valley. Those who wanted a more comprehensive history of The Avengers continued their Marvel adventure at the 'Avengers Forever' exhibition held at the Canopy Park. The exhibition paid homage to 60 years of The Avengers by featuring key milestones of the action series from comic books to television, toys and movies.

With Jewel's attractiveness as a global travel and retail destination, it was selected by century-old Japanese company, Nintendo, to host a short-term pop-up store. Building on this significant leasing

milestone, Jewel worked with Nintendo to curate a first-of-itskind event 'Pipe Around the World at Jewel' during the travel and holiday season.

Tapping the global popularity of the iconic video game franchise, this Super Mario-themed activation brought much excitement to legions of loyal fans in Singapore and international travellers alike. Its cross-generational appeal not only attracted visitors seeking festive entertainment, but also created a sense of anticipation and curiosity among both locals and tourists. The meet-and-greet sessions featuring beloved Super Mario characters, Mario and Luigi, proved to be crowd pullers, with enthusiastic fans forming snaking queues for that Instagram-worthy photo from their memorable visit to Jewel.

Visitors also soaked up the festive mood in the captivating Christmasthemed light and sound show, snowfall experience and festive light-up at Canopy Park. The iconic 16-metre Christmas tree at the entrance of the Shiseido Forest Valley, sponsored by Alipay+, had a unique feature that allowed visitors to select their favourite lighting display and see it projected onto the tree via interactive kiosks.

Online buzz for this event continued throughout the entire campaign period, reinforcing Jewel as a global destination for innovative and captivating experiences.

Prior to the December holiday activation, Jewel also launched its first flower festival in September 2023 – 'Jewel Blooms: Splendours of Singapore'. It showcased an exquisite collection of 10 floral displays by Singapore's renowned floristry talents, each measuring 1.5metre in width and height.

Besides having the chance to admire captivating blooms, botany lovers also engaged in a series of floral-themed activities. Jewel also held the Youth Floral Cup – a floral design competition for budding florists between the ages seven and 12.

#### **Strategic partnerships**

Jewel, in collaboration with the Singapore Tourism Board, unveiled an exciting retail cluster in December. The 'Discovering the Best of Singapore Brands' hub offers a curated selection of top Singaporean brands, showcasing products ranging from spirits and snacks to pastries and confectionery. Some brands, like **Anthology of Compendium Spirits** and Keong Saik Bakery, offer exclusive items available only at Jewel. Spanning 370 square metres, the cluster is strategically located near the early check-in lounge for travellers' easy access.

The cluster's open-concept layout creates a visually appealing shopping environment and visitors can enjoy novel dine-in experiences from brands like Ya Kun Kaya Toast and Anthology of Compendium Spirits, offering a blend of traditional and modern culinary delights. This unique retail experience mixes local craftsmanship with diverse offerings to enhance Jewel's vision of 'where the world meets Singapore and Singapore meets the world'. It also further entrenches Jewel as the Singapore mall with the largest representation of homegrown brands.

#### A touch of royalty

Jewel's fame as a lifestyle mall nestled amid lush greenery also attracted attention from royalty. A Kensington Palace representative reached out to arrange for British Prince William to visit Jewel alongside an event he was due to attend in Singapore. Jewel worked closely with the palace's team, from security matters to media coordination, culminating in a successful visit to Jewel where Prince William met local residents who had gathered early at the Shiseido Forest Valley in eager anticipation of his arrival. A Tembusu tree, a native species of Singapore, was planted in his honour to commemorate his visit to Jewel.



Visitors flocked to Jewel to catch a glimpse of royalty when Prince William visited last year.



Changi Airports International (CAI) has investments and consultancy projects in several countries.

In Brazil, CAI has a 51% stake in the concessionaire which operates Tom Jobim International Airport in Rio de Janeiro. The airport continues to work closely with business partners to provide a high level of service for passengers. Tom Jobim International Airport remained as the top three concession airports in Brazil in terms of service quality in a 2023 survey conducted by the regulator, a record held by the airport for the last eight years.

In China, CAI holds a 49% stake in Sino-Singapore Chongqing Airport Commercial Management Co., Ltd., a joint venture with Chongqing Airport Group, which manages the non-aeronautical business of Chongqing Jiangbei International Airport. In financial year 2023/24, the joint venture successfully launched Starry Galleria, a first-of-its-kind airport commercial management brand, to strengthen its brand offering. It continued to elevate the airport retail experience, unveiling a new commercial street at Terminal 3A which houses over 130 stores including luxury labels such as Bulgari, Cartier, and Gucci.

In India, CAI holds a 30% stake in Bengal Aerotropolis Projects Limited, which develops Durgapur Aerotropolis, India's first privately managed airport city. Kazi Nazrul Islam Airport connects Durgapur directly to five metro cities (Bangalore, Chennai, Delhi, Hyderabad and Mumbai) with daily flights. In 2023, Kazi Nazrul Islam Airport saw the completion of its new cargo terminal. Demand for land continues to be strong as the aerotropolis' development progresses.

In the Philippines, CAI holds a 15% stake in Luzon International Premiere Airport Development Corp. (LIPAD), which operates and maintains Clark International Airport (CRK), CAI worked closely with LIPAD, where active airline engagement and passenger development schemes resulted in significant traffic recovery post-Covid. CRK added five new airlines and 13 new destinations in the year. Passenger traffic grew 160% year-on-year, led by recovery in key markets such as South Korea, the Middle East and Singapore. CRK was recognised with the Routes Asia Marketing Award in the under 5 million passengers category in 2024. Beyond traffic, LIPAD secured new revenue streams through land leases for cargo and maintenance, repair and operations (MRO) facilities.

During the year, CAI continued to forge new partnerships. In August 2023, CAI inked two agreements with Cairo Airport Company (CAC) to jointly develop Cairo International Airport, one of the busiest airports in Africa and the largest airport in Egypt by passenger and cargo traffic. In December 2023, CAI completed a six-month consultancy agreement in Uzbekistan to improve operation and management of Tashkent International Airport.

In February 2024, CAI sealed a technical partnership agreement with Sociedade Gestora de Aeroportos to strengthen the performance of 16 regional airports in the Republic of Angola through new corporate and traffic strategies.

In the same month, CAI inked agreements with Vietnam's Cam Ranh International Joint Stock Company to manage Cam Ranh International Terminal's non-aeronautical businesses and to support the growth of Cam Ranh International Airport's international route development. CAI also completed the master plan review for Velana International Airport in Maldives in February 2024.

# ENGAGING A GLOBAL AUDIENCE

CAG continued to captivate social media users worldwide with engaging and diverse content on Changi Airport. It connected with 960 million users on social media throughout the year, solidifying Changi as the world's most followed airport and a global brand synonymous with exceptional service and a gateway to endless possibilities.

### Igniting excitement for the rejuvenated Terminal 2

CAG got the world talking on social media with the full reopening of Terminal 2 (T2). The use of visual storytelling and dynamic content showcased T2 as a unique destination. Mentions of T2 soared by 400% in the opening month of November. Organic content reached 15.6 million users, with over 875,000 engagements. Visuals of 'The Wonderfall' were a hit, gathering 4 million organic views on Instagram and TikTok.

The fascinating journey of revitalising T2, showcased in a three-part series, 'Transforming Terminal 2: Behind the Scenes', was also published on Facebook and YouTube. The series racked up nearly half a million views alongside positive audience comments. Its success led to Singapore Airlines picking it up as content for their in-flight entertainment system.

#### Taking flight on Changi Airport's social media

CAG's social media channels, namely Facebook, Instagram, LinkedIn, Telegram, TikTok, X (previously known as Twitter), YouTube as well as WeChat, Weibo and Xiaohongshu (also known as Red), continued to serve as important platforms to grow brand love and sustain interest in Changi's offerings.

Creative social media content garnered over 30 mainstream and online media pick-ups. This included unique aircraft liveries like Finnair's Moomin characters and Korean Air's K-pop-inspired Blackpink design. With a strong curation strategy, CAG's social channels gained influence, hitting over a million organic views on YouTube and surpassing 400,000 Instagram followers.

### Leveraging megatrends to connect with fans

American singer-songwriter Taylor Swift's concerts in Singapore sparked a regional craze, prompting CAG to engage fans on social media. A user-generated campaign was launched to invite Taylor Swift to #SeeTheNewForest in Jewel's Forest Valley. The campaign culminated in the 'beJEWELed' sing-along event in Jewel. Alongside local and international media coverage, the event garnered 37,000 social media mentions and a reach of over 825 million in the region. Over a thousand 'Swifties' attended, making it Jewel's largest sing-along event yet.

### Reaching travellers in key markets

CAG expanded its reach to strategic markets including Australia, China, India and Indonesia through targeted social media content and innovative campaigns in collaboration with travel and airline partners. The Changi

story was brought to life through engaging activations, interesting documentaries, and interactive livestreaming events with influencers. CAG's activities in these key markets reached over 320 million users, more than double the number compared to the previous year.

In anticipation of China's reopening in March 2023, CAG launched a series of campaigns to help Chinese tourists travel better. WeChat became the main hub for travellers from China to access important information, discover shopping and entertainment options, and redeem promotions at Changi. The success of CAG's WeChat strategy led to its recognition as the WeChat Users' Favourite WeChat Ecosystem at the Tencent Global Annual Sharing event in 2023.



CAG's China Recovery Campaign, which included a curation of guides on Red to assist travellers, achieved almost 600,000 engagements in China.



At the heart of CAG is its biggest asset – its people. During the year, CAG strengthened its innovation culture and equipped employees with new skills to reimagine the future of aviation. It also refreshed its employer brand and fortified the employee experience to attract and retain talents.

Nurturing a culture of innovation

To nurture a culture of innovation. CAG continued to ride on the momentum created by the launch of the '4D+i' initiative in January 2023. The 'i' refers to Innovation Fridays which are dedicated days for employees to take part in activities that unlock new skills and explore new products, while '4D' refers to streamlining regular work into four days. Results from an internal survey conducted in January 2024 were encouraging. Three in five employees pointed out that they could commit at least one-fifth of their time to innovate. At the same time, two in three employees viewed setbacks and failures positively as learning opportunities. Brown bags,

CAG employees proudly wearing their #IMCAG T-shirts, as part of the launch of the 'Come Make MAGIC with Us' employer brand

experiential tours and activities organised on i-Fridays were also highly rated by employees as an effective way to learn about CAG's innovation ambition.

To unlock bandwidth, CAG also reviewed work processes and explored productivity tools, such as chatbots, to simplify work and give employees more time for innovation. It proactively scanned the market for new technologies, such as Generative AI, and trained employees to use these transformative tools to discover new ways of working and service delivery.

To enhance the skills and knowledge of CAG employees for the future, CAG's People Team partnered with dedicated in-house Centres of Excellence to curate structured learning pathways towards three skill pillars - Data/ Digital, Innovation and Leadership, which are core to CAG's business aspirations. It nurtured a growth mindset among employees with a refreshed Growth Friend Network, which saw handpicked employees actively championing the spirit of exploration and learning within their departments.



### Building a magical employer brand

To attract the best and brightest talents to the company, CAG unveiled a new face to its employer brand during the year. With the tagline 'Come Make MAGIC with Us', CAG invited prospective hires to transform its airport business through innovation and create a magical experience for its customers together.

CAG launched a series of videos with this campaign to highlight the strong spirit of collaboration and innovation. Playing on the anagram of 'MAGIC' to form the #IMCAG ('I AM CAG') identity, the videos demonstrated how innovation is embodied by CAG's employees, alongside new technologies being rolled out across the airport, all of which come together to create the iconic, magical Changi Experience for passengers and visitors. The video series was launched on CAG's 14th anniversary in July 2023 across platforms such as LinkedIn and YouTube. They were well-received by employees and the public, resulting in more than 9,000 page views on CAG's corporate career page and an increase in job applications.

### Valuing the employee experience

During the year, CAG continued with a hybrid work arrangement to provide flexibility for its employees. Employee events, like wellness activities and celebrations, were held regularly to provide opportunities for colleagues to have fun and bond. These events served as invaluable platforms to promote employee well-being.

CAG's People Team also set up a new Employee Experience programme management office to focus on the important task of transforming the CAG employee experience. Several teams were set up, including one to create the 'Magic of Onboarding' for new hires. Key changes, such as improved preboarding processes and a revamped orientation programme, were implemented, ultimately leading to significantly increased satisfaction scores from new hires.

#### CAG as an employer of choice

CAG's longstanding reputation of being an employer of choice was reflected through strong showings at HR awards throughout the year. For the 11th year in a row, CAG claimed one of the top spots in the Randstad Employer Brand Awards, coming in third in the overall list of the Most Attractive Employers in Singapore for 2023. This was accompanied by a double win in the Singapore's 100 (S100) Leading Graduate Employers ranking, as CAG secured top spots in both the Aviation, Transport & Supply Chain and Hospitality, Leisure & Tourism categories for the second year in a row.

CAG also clinched two golds and a silver at the HR Excellence Awards 2023, demonstrating its excellence across Employee Branding, Recovery & Rebound Strategy, and HR Innovation domains. It also received the Fair and Progressive

Employment Practices award at the Tripartite Alliance Awards 2023, in recognition of its efforts in building an effective workplace and inclusive people practices.

#### Giving back to society

CAG employees continued to actively volunteer for charitable and social causes, with volunteers clocking over 3,700 hours of their time in the year. Through the company's charitable arm, Changi Foundation, CAG maintained its long-term partnership with NorthLight School, Metta School and Arts@Metta. The annual CAG Art Fair returned for its third year, welcoming participants from three additional special needs communities. More than S\$16,000 was raised through the monthlong sale of artworks, with all proceeds going to the participating beneficiaries.

CAG's efforts were further bolstered by airport partners who supported multiple initiatives around career awareness and work exposure for youths. To date, two youths with special needs have been hired into jobs based at Changi Airport. CAG continued to support their assimilation into the work environment.



CAG regularly organises employee wellness events aimed at supporting physical, mental and financial health under its Healthy Habits, Happy Life initiative.

# Sustainability Highlights

#### **ENVIRONMENTAL**



20% reduction in Scope 1 and 2 emissions by 2030, against a 2019 baseline



100% of airside vehicle fleet to run on cleaner energy by 2040



**-15%**FY2023/24
electricity
consumption
(vs FY2018/19)

#### SOCIAL



Top 10 most attractive employers in Singapore by Randstad for the 11<sup>th</sup> consecutive year



6-time
winner of the
Community
Chest Volunteer
Partner Award



Leading Graduate
Employers
Award winner in
'Hospitality, Leisure
& Tourism' and
'Aviation, Transport
& Supply Chain'
categories

#### **CORPORATE GOVERNANCE**



**Zero** significant fines for noncompliance with applicable laws and regulations



Zero employee work-related



# ADVANCING ENVIRONMENTAL SUSTAINABILITY

CAG's commitment to environmental sustainability is centred across six environmental pillars, which guide its efforts to reduce carbon emissions, manage waste effectively, conserve water, adapt its airport operations to climate change, implement sustainable processes, and adhere strictly to environmental regulations. Each pillar represents a specific area of focus, reflecting its comprehensive approach to tackle environmental challenges.

CAG's environmental efforts are supported by a governance framework that promotes accountability, transparency, and continual improvement. An Environmental Steering Committee, led by CAG's senior leaders, sets the organisation's environmental goals, tracks progress, and aligns its efforts with sustainability benchmarks. Specialised working groups such as the Climate Working Group coordinate actions across internal and external stakeholders on matters such as mitigating climate change impact, reducing emissions, and enhancing resilience against environmental risks.



cag actively pursues
environmental sustainability
through a structured approach,
focusing on reducing emissions,
managing waste, conserving
water, adapting to climate
change, implementing sustainable
practices, and adhering to
environmental regulations.

MAT	ERIAL MATTER(S)	TARGETS	PERFORMANCE FY2023/24
(4)	Energy and Emissions Management	20% reduction in Scope 1 and 2 emissions by 2030, against a 2019 baseline	On track
		Achieve Airport Carbon Accreditation Level 3 certification	Achieved
(4)	Energy and Emissions Management	Maintain ISO 14001:2015 certification	Achieved
<b>4</b>	Water Management		
	Waste Management		
	People Development	All employees to attend at least 1 training programme, yearly	94%
2	Community Investment	Achieve 25% volunteerism by financial year 2025/26	27%
		Achieve 3,000 volunteer hours yearly by 2025/26	3,767
		Engage 35 Airport Partners to join Changi Foundation programme by 2025/26	13
		Offer a minimum of 80 annual job attachments to youth beneficiaries from 2025/26 onwards	36
<b>9</b>	Airport Safety	Zero employee work-related fatalities, yearly	Achieved
		Deficiency-free rating from the International Federation of Air Line Pilots' Associations, yearly	Achieved
*	Good Corporate Governance	Maintain ISO 37001:2016 certification	Achieved
		Zero significant fines for non-compliance with applicable laws and regulations	Achieved
	Contribution to the Economic Development of Singapore	Build capacity ahead of growth with Terminal 5 planning and development	Ongoing effort



## Aligning carbon reduction efforts with aviation sector targets

CAG is committed to growing its business in a responsible and sustainable manner. This year, CAG raised its carbon emissions target from "Zero Carbon Growth" to a 20% reduction in Scope 1 and 2 emissions by 2030, against a 2019 baseline. This is in line with the target set by the Civil Aviation Authority of Singapore (CAAS) for domestic aviation emissions under the Singapore Sustainable Air Hub Blueprint. CAG will achieve this reduction in absolute carbon emissions even as Changi Airport continues to serve more passengers every year. To achieve this mediumterm target, CAG will raise building energy efficiency and increase its adoption of renewable energy.

In the longer term, CAG strives towards Net Zero by 2050, enabled by advancements in technologies for energy efficiency in buildings, availability of off-site renewable energy and national grid decarbonisation.

Beyond its terminal buildings, CAG works with airport partners to reduce Changi Airport's Scope 3 emissions. Plans are underway to

expand CAG's network of electric vehicle chargers to support the airport community's target of transitioning all airside vehicles to cleaner energy vehicles by 2040. The Singapore Government has also announced the introduction of a sustainable aviation fuel (SAF) levy from 2026 onwards, which aims to accelerate SAF adoption at Changi Airport. The SAF levy will be based on a 1% target for a start, with a forward-looking goal of raising it to 3-5% by 2050, subject to global development and the wider availability and adoption of SAF.

## Home to Singapore's largest single-site rooftop solar PV system

### Expanding on-site renewable energy deployment

In January 2024, CAG commenced the installation of a large-scale solar photovoltaic (PV) system on the rooftop areas of Changi Airport, encompassing its passenger and cargo terminal buildings as well as auxiliary structures. When completed in 2025, this system will have an installed capacity of 38 megawatt-peak (MWp) and will be Singapore's largest single-site rooftop solar PV system.

This project marks an important milestone in Changi Airport's decarbonisation journey – the new solar PV system is expected to reduce annual carbon emissions by nearly 20,000 tonnes per annum, or about 10% of CAG's carbon footprint in 2018/19. This is equivalent to the energy required to power 10,000 four-room HDB residential flats in Singapore each year.

Deploying solar PV systems at airports present unique challenges as compared to conventional installations at commercial, industrial. or residential sites. For example. robust simulations have to be carried out to ensure that the solar panels do not pose glare and glint effects to the air traffic control tower and pilots, nor interfere with signals from communications, navigation & surveillance (CNS) and meteorological facilities. In addition, the installation and operation of solar PV systems must comply with international aviation safety and security requirements, including higher fire safety precautions, beyond those required under the Singapore Civil Defence Force's Fire Code.

#### **Pursuing new innovations**

Given inherent space constraints at Changi Airport, CAG is pushing

the envelope beyond conventional rooftop areas to meet longer-term decarbonisation goals.

Part of the project will also explore installing a ground-mounted solar PV system at a grass turf within Changi Airport's airfield. This will be the first time in Singapore that a solar PV system is installed in the airfield - demonstrating CAG's commitment towards realising Changi Airport's full solar potential.

Looking ahead, CAG and CAAS will be carrying out a joint study to assess the technical and commercial viability of installing solar PV systems at more areas of the airfield. An early estimate suggests that wider deployment of solar installations on the airfield could enable CAG to reduce its absolute carbon emissions by a further 5%. Through this study, CAG hopes to unlock greater on-site renewable energy potential, without compromising International Civil Aviation Organisation (ICAO) and local requirements for safety and efficiency of airport operations. The study will examine critical factors such as the risks of visual disturbance to pilots and air traffic controllers, radar signal interference, foreign object hazards, as well as potential impact on aircraft rescue and firefighting emergency response. The study will also explore innovative engineering solutioning to overcome height restrictions at sensitive areas of the airfield, such as the non-graded areas of runway and taxiway strips. The study is expected to complete in mid-2025.

#### **Electricity consumption**

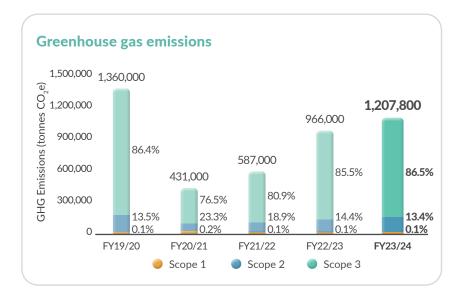
CAG's electricity consumption constitutes 99.5% of CAG's Scope 1 and 2 emissions. In 2023/24, CAG consumed 389,000 megawatt hours (MWh) of electricity, a 14% increase over 2022/23 due to the full re-opening of Terminal 2 in November 2023. Nonetheless, this was 15% lower than its pre-Covid consumption of 456,100 MWh in 2018/19.

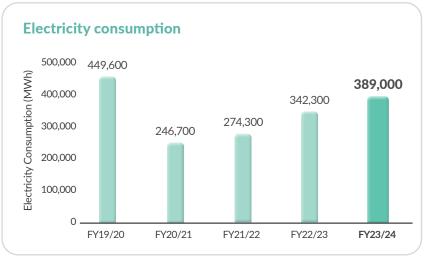
#### Greenhouse gas emissions

A total of 1,207,800 tonnes carbon dioxide equivalent of greenhouse gas emissions was recorded in 2023/24, with Scope 1 and 2 accounting for 0.1% and 13.4% respectively. Scope 3 emissions formed the largest proportion of our footprint at 86.5%.



be carrying out a joint study to assess the technical and commercial viability of installing solar PV systems at more areas of the airfield.





#### CLIMATE ACTION

# Infrastructure and facility upgrades





## Enhancing heat resilience for airside personnel

Airside personnel such as ramp assistants, aircraft maintenance engineers and inflight catering drivers, are crucial to Changi Airport's operations. Given the increased risks associated with higher temperatures, CAG has implemented a heat stress management strategy to better support outdoor workers in managing heatrelated challenges.

Installation of critical amenities such as additional toilets and water coolers across the airside to improve comfort and accessibility.



Introduction of "Refresh Pods" at airside staff lounges, that blow cool air to reduce body heat and for workers to keep dry.

Distribution of protective sun wear, including ultraviolet resistant arm sleeves and portable neck fans.

Deployment of water trucks throughout the hotter months to provide chilled drinks for on-demand hydration and relief.





Changi Airport Heat Resilience Working Group in front of the Refresh Pod and the Recharge Staff Lounge – (Left to right) Farhana Karim (dnata), Lee Syh Bao (CHIPS), Mohd. Zaini Bin Zainoldin (SATS), Eddie Poh (JAZ), Lynette Koay (CAG), Cathay Teo (SIAEC).



Collaboration with airside partners to supply protective sun wear and adopt heat acclimatisation protocols, such as the flexibility to have more rest breaks during high heat stress days.

Enhance awareness on the importance of prevention and management of heat-related illnesses.

Partnership with Raffles Medical Group to facilitate seminars aimed at educating airside supervisors on recognising symptoms of heat stroke and administering first aid for heat stress.

The airside community also set up a working group to incorporate heat management protocols into work processes and heat acclimatisation programmes for new joiners. CAG continues to proactively work with its airside partners to create a culture of heat resilience and safety for airside personnel amidst an evolving climate.

#### Changi carbon offsets

Singapore's aviation sector has been adopting technological advancements and implementing new policies to accelerate the transformation to sustainable air travel. These efforts include:

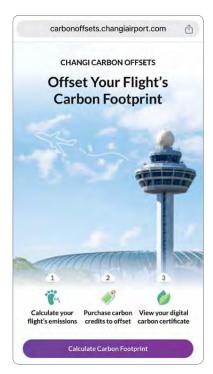
- Aircraft manufacturers improving aircraft fuel efficiency.
- Changi Airport, airlines and ground handlers optimising aircraft taxiing times, reducing taxi fuel burn.
- Progressive adoption of Sustainable Aviation Fuels.

As the aviation industry works together for greener travel, travellers also have avenues to offset their air travel carbon emissions.

Changi Carbon Offsets was launched in November 2023 to give passengers a convenient means to offset air travel emissions. The public can access the Changi carbon calculator through the Changi Airport website, Changi App and Changi Wi-Fi landing page to calculate the carbon emissions from their upcoming flights based on the origin, destination and class of travel.

CAG has selected high-quality carbon offset projects, which have beneficial impacts on the environment and communities.

CAG has also fully offset flight emissions from staff corporate travel since the launch of Changi Carbon Offsets.



https://carbonoffsets.changiairport.com



#### CAG'S CARBON FOOTPRINT

1,207,800 tCO<sub>2</sub>e

TOTAL GHG EMISSIONS<sup>1</sup>

Aircraft emissions up to 3000ft are included in Changi Airport's carbon footprint.











800 tCO<sub>2</sub>e

SCOPE 1 (0.1%)

**CAG** vehicles and emergency power generators





162,000 tCO2e

SCOPE 2 (13.4%)

Electricity consumption for terminal buildings





1,045,000 tCO<sub>2</sub>e

SCOPE 3 (86.5%)

**Airline Emissions** 

(ground and flight operations <3000ft)





**Ground Support Equipment Emissions** 

(fossil-powered ground support equipment)





**Partner Emissions** 

(electricity consumed by tenants and private developers at the airport)





**User Emissions** CAG's overall carbon footprint

(passengers and airport users' surface access)





with ISO 14064, GHG Protocol and ACI's Airport Carbon Accreditation (ACA) guidelines, verified by an independent, thirdparty accredited verifier. The full methodological approach can be found in Annex: GHG Emissions Quantification Methodology.

FY23/24 GHG emissions are

subject to third-party verification.

has been prepared in accordance

**Emissions** (vehicular emissions from trucking of waste to treatment

facilities)

**Waste Trucking** 





handina dan adam dan



#### Waste management

CAG manages material resources, invests in efficient waste technologies, and partners airport stakeholders to both avoid waste generation and recycle more effectively. This minimises waste sent to Singapore's incineration plants and improves recycling rates.

In 2023, CAG established a comprehensive waste baseline to monitor and measure its waste management initiatives effectively. Waste generated and recycled at external buildings and sites managed by CAG, including the Changi Airfreight Centre and the plant nursery were measured, which contributed to an increased recycling rate in 2023/24.

To enhance understanding of recycling potential within passenger terminal buildings, CAG completed a waste assessment study to collect and analyse the various types of waste being disposed. In collaboration with airport tenants and with support from a local waste recycling company, CAG identified key challenges and opportunities in waste reduction and recycling processes. These insights will support ongoing efforts to develop a robust waste management strategy and set long-term targets.

#### **Self-service waste sortation**

To promote waste segregation and recycling, CAG designed a sortation bin that was implemented at the tray and crockery return stations across the airport.

These tray return stations feature recycling graphics and signages to guide users on proper recycling practices and reduce cross-contamination. Users can self-sort their waste into five waste streams: liquid waste, food waste, plastic bottles, metal cans and non-recyclables. Since the installation of the first system at Terminal 1 in January 2024, an average of 90kg of recyclables has been collected each month. This initiative has also resulted in the on-site treatment of 600kg of food waste per month.

There are plans to expand this system airport-wide to encourage airport employees and passengers to participate in recycling efforts.

#### Circularity at the workplace

CAG collaborated with the office coffee kiosk partner to transition towards zero-waste. Employees are encouraged to bring their own cups instead of using single-use disposable cups, and all used milk cartons are recycled.

Used coffee grounds at the kiosk are sent to CAG's horticulture plant nursery to be converted to compost. The compost is then used to grow the plants around the airport. Every month, up to 80kg of coffee grounds are recycled through this arrangement.



Zero-waste coffee kiosk in the workplace.

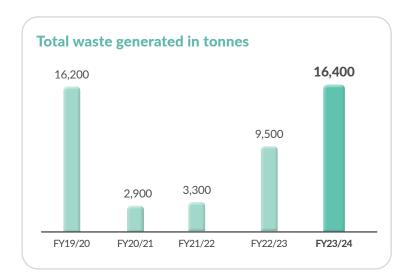
#### RESOURCE SUSTAINABILITY

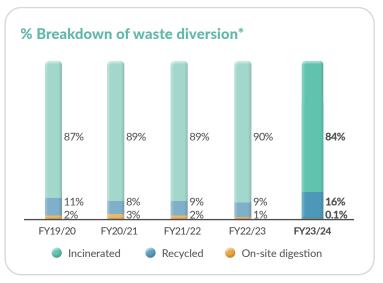
### Community engagement on recycling awareness

Changi Airport's first Sustainability Recycling Corner was launched in February 2024, featuring information on the importance of recycling and how different materials can be recycled. The installation was curated to be dynamic, timeless and interactive with a gamification function to engage users in learning what it means to practice responsible recycling.

In collaboration with local and international partners, including SGRecycle, ALBA and TOMRA, airport visitors are able to recycle up to four waste types-e-waste, paper, plastic bottles and metal cans-within a single location.

The Sustainability Recycling Corner tracks the number of games played to monitor user uptake and effectiveness of the initiative. Every month, an average of 1,000 beverage containers, 300kg of paper and 100kg of electronic waste is recycled. Through regular education and engagement, CAG aims to foster a culture of sustainability across the airport community.





 $^*$ Does not include waste generated from construction and aircraft cabin activities





The innovative water management approach at Terminal 4 has led to an estimated annual savings of \$\$70,000 and a 16% reduction in cooling tower water consumption.



CAG team comprising (Left to Right): Kenny Lim, Leow Peng Boon, Li Jian Cheng, Ahmad Fadhli Bin Mohamed.

## Upgrading cooling tower water treatment systems

Traditional cooling tower water treatment is reliant on the use of chemicals to mitigate bacteria growth, scaling, and other water quality issues. While these chemical treatment methods are effective in maintaining water cleanliness, they necessitate regular dilution and disposal to manage chemical concentration, often resulting in significant water wastage.

In pursuit of a more sustainable alternative, the Terminal 4 (T4) integrated Facilities Management (iFM) team embraced an innovative treatment system which utilises ElectroChemical Activation (ECA). This advanced technology mirrors the beneficial effects of traditional treatment, but in an eco-friendlier manner. It functions by producing oxidising chemicals through the electrolysis of water,

effectively managing water quality and controlling bacteria and other contaminants without the use of harsh chemicals. Additionally, the system incorporates an electrolytic water softening process that extracts calcium and magnesium ions from the water. This reduces the need for dilution and disposal to manage chemical concentration, thereby avoiding excessive water usage.

A crucial benefit of this system is its impact on cycles of concentration (COC) — a measure that indicates how many times water can be re-used before it needs to be replaced. By enhancing the COC, the system reduces the frequency of water flush-outs, enabling the cooling tower to operate more efficiently and use less water. This water management approach has led to estimated annual water savings of S\$70,000 and a 16% reduction in cooling tower water consumption in T4.

By implementing the ECA system, CAG has enhanced operational efficiencies and reduced environmental impact, aligning with its sustainability goals. Importantly, these advancements have been achieved while fully complying with regulatory water quality standards, ensuring that its operations remain sustainable and compliant.



Chemical-free water treatment system for cooling towers.

## SUSTAINABLE PROCUREMENT





#### **Raw Material**

Are toxic/hazardous materials used? Are there non-toxic equivalents? Are materials used easily recyclable?



#### **Disposal**

Can the "waste" product be reused/recycled? Does it emit pollutants upon incineration?

Is there **pollution** to air/water/land?



#### Desig

How does the **design** of the good create **savings** in materials, energy, water and waste generated?

Preference for suppliers who can demonstrate how their product/ service is sustainable throughout its life cycle



#### **Manufacturing**

How efficient is the production of the good in the usage of materials, energy, water and waste generated?



#### **Packaging**

Can the packaging be minimised or made from recyclable material?



#### Use

Does the use of the good/service result in increased energy/water efficiency and chemical/ waste reduction?



#### Distribution

Can the product be made lighter/ locally/regionally to reduce transport footprint?

1

For new procurements, suppliers will need to show how they have fulfilled the environmental criteria.

2

Suppliers will be evaluated according to Price, Quality, Safety and Environment, with a minimum weightage given to the environment criteria.

3

To be awarded new procurements, the supplier will need to meet a minimum environment score.

CAG employs a life-cycle perspective in its procurement decision-making, prioritising environmental stewardship in the initial design phase through to downstream processes to avoid environmental impact. This commitment to sustainable procurement has been integrated into CAG's procurement systems and practices.

In 2022, CAG mandated a minimum environment weightage in the evaluation of new procurements for selected procurement categories. In 2023, CAG expanded this environment evaluation criteria to all procurement categories.

All bidders of new CAG procurements will need to:

- demonstrate how their product or service fulfils the environment evaluation criteria that the CAG project team specifies for each procurement, and
- meet a minimum environment score to be awarded the project.

The Price:Quality:Environment evaluation framework, along with the requisite minimum environmental score for suppliers, enables CAG to assess and show preference for suppliers who are environmentally responsible and can join CAG in achieving its environmental goals. In increasing the demand for sustainable products and services, CAG is working with our internal and external stakeholders to decarbonise and increase the sustainability of its supply chain.



CAG initiated the "ONE Gracious and Green Changi" campaign aimed at cultivating a more caring and positive airport environment and inculcating a sustainability mindset in airport staff. The campaign was launched successfully through a carnival held in May 2023 where participants engaged in various games and interactive learning stations, one of which featured the Reverse Vending Machine by TOMRA, a recycling initiative by the Facilities Management Team. Metta Welfare Association also came on board to sell sustainable products that were lovingly crafted by special needs youths, receiving a positive response from the airport community.

Continuing the momentum, the ONE Changi Learning Fiesta in August and September 2023 drew over 450 attendees, offering workshops, exploratory journeys, and a carnival, themed around Service Excellence, Sustainability, and Innovation.

The Sustainable September campaign, specifically tailored for CAG employees, delved into vital environmental stewardship themes through a series of lunch time talks and covered topics such as reducing carbon emissions, sustainable events planning, green procurement, and optimising waste management. In conjunction with the campaign, like-minded



CAG cultivates
a sustainable
workplace by actively
engaging staff in
environmental
stewardship and
community support.



Airport staff playing games while learning about sustainability at ONE Changi Learning Fiesta 2023.

colleagues came together to conceptualise and run a 'Swaptacular September Event', where employees could donate and swap their children's pre-loved items. It aimed to raise awareness and encourage employees to take action in reducing their environmental footprint, and to instil a renewed purpose for preloved children's clothes and books. The event led to the collection of up to 26kg of clothes and 425 books, which were donated to Metta Welfare Association in support of their community programmes and the National Library Board, in support of their book exchange programmes.

# BOARD OF DIRECTORS

(As at 6 June 2024)



#### 1. TAN GEE PAW

Chairman

Mr Tan Gee Paw is the non-executive chairman of CAG. He was appointed to the Board on 1 May 2017 and was subsequently appointed the non-executive chairman of the Board on 23 October 2020.

Mr Tan is currently the Special Advisor to the Chairman of PUB, Singapore's National Water Agency. He is also a member of the Centre for Liveable Cities (CLC) Panel of Distinguished Advisors, and the Adjunct Professor at the College of Design and Engineering, National University of Singapore.

Mr Tan was the previous Chairman of PUB from 1 April 2001 until his retirement on 31 March 2017. His previous appointments include being a member on a number of government committees, the Principal of Ngee Ann Polytechnic, Permanent Secretary of the then Ministry of the Environment, Advisor on Rail Transformation, Ministry of Transport and Special Advisor to Land Transport Authority.

Mr Tan received the Public Administration Medal (Silver) in 1978 and a Special Award (Gold Medal) for Clean River Commemoration in 1987. He also received the Medal of Commendation at the NTUC May Day Award in 2005, the President's Award for the Environment in 2007 and the President's Science and Technology Medal in 2015. Mr Tan was conferred the Meritorious Service Medal in 2001 for his work as Permanent Secretary of the then Ministry of the Environment and the Distinguished Service Order in 2010 for his work as Chairman of PUB. In 2011, Mr Tan was conferred the Distinguished Engineering Alumni Award by the National University of Singapore; the Distinguished Member Award by National University of Singapore Society in 2014; and the Distinguished Professional Engineer Award in 2018 by the Professional Engineers Board. He was elected an Honorary Fellow of the Institution of Engineers, Singapore and awarded the Lifetime Engineering Achievement Award in 2015. Mr Tan was also elected as a Fellow of the Academy of Engineering, Singapore in 2012.

Mr Tan graduated with First Class Honours in Bachelor of Engineering (Civil) from the University of Malaya in 1967, and a Master of Science in Systems Engineering from the University of Singapore in 1971. He was conferred an Honorary Degree of Doctor of Science from the University of Westminster, UK in 1993; and an Honorary Doctorate in Engineering from Sheffield University, UK, in 1995. In 2013, he was conferred an Honorary Degree of Doctor of Engineering by the Nanyang Technological University.



#### 2. LEE SEOW HIANG

**Executive Director and CEO** 

Mr Lee is the CEO of CAG. He was appointed to the Board on 16 June 2009.

Mr Lee is concurrently Chairman of Changi Airports International Pte Ltd, Changi Foundation Limited and Jewel Changi Airport companies. He also chairs the National Library Board and sits on the board of NTUC FairPrice Co-operative Ltd, E-Concierge Private Limited and Singapore Tourism Board. He holds the appointment of Immediate Past President on the Airports Council International (ACI) Asia-Pacific Regional Board and is a Director on the ACI World Governing Board.

From 1989 to 2005, Mr Lee held various appointments in the Republic of Singapore Air Force (RSAF) and the Ministry of Defence, with his last appointment being Deputy Head of Air Operations in HQ RSAF. From 2005 to 2008, he was the Principal Private Secretary to the late Minister Mentor Lee Kuan Yew in the Prime Minister's Office.

Mr Lee was awarded the Singapore Armed Forces (SAF) Overseas Scholarship and President's Scholarship in 1989. He was also awarded the SAF Postgraduate Scholarship (General Development) in 2002. He holds a Bachelor of Arts (Honours) from the University of Cambridge, UK, and a Master of Business Administration from the Massachusetts Institute of Technology, USA.

#### 3. TAN CHING YEE

Mrs Tan Ching Yee is a Non-Executive Director of CAG. She was appointed to the Board on 1 May 2017.

Mrs Tan is the Permanent Secretary of the Ministry of Finance, Singapore. She also holds the appointment of Permanent Secretary (Special Duties), Prime Minister's Office. She assumed these posts on 1 May 2016. She is Chairman of the Inland Revenue Authority of Singapore, and a board member of the Lee Kuan Yew School of Public Policy.

Mrs Tan was previously Permanent Secretary at the Ministry of Health and the Ministry of Education. Before that, she was the Chief Executive of the then Infocomm Development Authority of Singapore, and also Deputy Secretary (Infocomm and Media Development) at the former Ministry of Information, Communications and the Arts. Prior to these roles, she had worked at the Ministry of Education and Ministry of Trade and Industry.

## BOARD OF DIRECTORS

Mrs Tan read Economics at Cambridge University and obtained her Master of Science in Management from the Graduate School of Business, Stanford University.

#### 4. TITUS LEE

Mr Titus Lee is the Alternate Director to Mrs Tan Ching Yee. He was appointed to the Board on 15 January 2022.

Mr Lee is Director (Reserves and Investment) at the Ministry of Finance. Prior to joining the Ministry of Finance in November 2021, he held appointments at the Ministry of Health, the former Workforce Development Agency and the National Population and Talent Division. At the Ministry of Health, Mr Lee held the positions of Director, Aged Care Services, and Deputy Director of the Healthcare Finance Division. At the Workforce Development Agency, he was the Deputy Director overseeing workforce measures for low-wage workers. At the National Population and Talent Division, he was the Assistant Director involved in strengthening Marriage and Parenthood policies. Mr Lee started his career in the public service as an Economist with the Ministry of Trade and Industry.

Mr Lee was awarded the Public Service Commission Overseas Merit Scholarship and graduated from Northwestern University, majoring in Mathematical Methods in the Social Sciences and Economics. He also holds a Master of International and Development Economics from Yale University.

#### 5. PROFESSOR TAN KONG YAM

Professor Tan Kong Yam is a Non-Executive Director of CAG. He was appointed to the Board on 30 January 2015.

Professor Tan is presently Emeritus Professor of Economics at the Nanyang Technological University. He is also Deputy Chairman of APS Asset Management (China).

From 1984 to 1988, Professor Tan was the Assistant Director on exchange rate policy at the Monetary

Authority of Singapore and assistant to the late Dr Goh Keng Swee, the former Deputy Prime Minister of Singapore, who had been invited by Mr Deng Xiaoping to advise China on economic development strategy. From June 2002 to June 2005, he was a senior economist at the World Bank office in Beijing. In 2004, he was a member of the World Bank expert group on the 11th five-year plan (2006 to 2010) for the State Council in China. The expert group provided analysis and policy recommendations to the Chinese government. Prior to that, he was the chief economist of the Singapore government at the Ministry of Trade and Industry (1999 to 2002) and head of the Department of Strategy and Policy at the NUS Business School. He has also worked at the Hoover Institution at Stanford University and World Bank in Washington.

Professor Tan is a graduate of Princeton University with a Bachelor of Arts (Honours) and has a PhD in Economics from Stanford University.

#### 6. NG CHEE KHERN

Mr Ng Chee Khern is a Non-Executive Director of CAG. He was appointed to the Board on 1 March 2018.

Mr Ng is Permanent Secretary for Manpower in the Ministry of Manpower, which is responsible for government policies and programmes covering the workforce and workplaces. Mr Ng was previously Permanent Secretary (Smart Nation and Digital Government) in the Prime Minister's Office from May 2017 to March 2022, where he led the government's efforts in driving the development of digital services for citizens and businesses, and applying digital and smart solutions to improve the lives of citizens in a Smart Nation.

He was Permanent Secretary (Defence Development) in Singapore's Ministry of Defence from May 2014 to April 2017 where his portfolio covered defence research and technology, capability development and acquisitions, and defence administration. He was concurrently 2nd Permanent Secretary in Singapore's Ministry of Health from August 2014 to February 2016 where he oversaw the overall operations, emergency preparedness and capacity building for the public healthcare sector in Singapore.

Mr Ng was previously the Chairman of the Government Technology Agency of Singapore (GovTech) board and served as a board member of the National Research Foundation (NRF), Civil Aviation Authority of Singapore (CAAS), Singapore Technologies Engineering Ltd, and CapitaLand Mall Trust.

#### 7. CHIA SONG HWEE

Mr Chia Song Hwee is a Non-Executive Director of CAG. He was appointed to the Board on 1 October 2018.

Mr Chia is the Deputy Chief Executive Officer at Temasek.

Mr Chia has held various leadership roles in Temasek, including President and Chief Operating Officer, as well as Head of the Investment, Credit Portfolio, and Strategy Groups. He has also led the Temasek market teams in Singapore and China.

In February 2021, Mr Chia was appointed to the board of Agency for Science, Technology and Research. He also serves as a member of Singapore's Advisory Council on the Ethical Use of Al and Data, established by the Infocomm Media Development Authority since 2018. With effect from April 2024, Mr Chia sits on the board of the National Research Foundation.

Prior to joining Temasek in 2011, Mr Chia was the Chief Operating Officer at GLOBALFOUNDRIES. Before the integration of GLOBALFOUNDRIES and Chartered Semiconductor Manufacturing Ltd (Chartered), he served as Director of the Board, and President and CEO of Chartered from 2002 to 2009. Mr Chia also held various management positions at Chartered, including Senior Vice President, Chief Financial Officer, and Chief Administrative Officer.

Prior to Chartered, Mr Chia was Regional Controller for Asia, Australia, and the Middle East for the drilling group of Schlumberger, a global oilfield services group.

Mr Chia holds a Bachelor of Business (Accountancy) degree with distinction, from Edith Cowan University, Australia, and is a member of CPA Australia. He was honoured with the EE Times Annual Creativity in Electronics Award for Executive of the Year in 2007.

#### 8. CHNG SOK HUI

Mrs Chng Sok Hui is a Non-Executive Director of CAG. She was appointed to the Board on 1 October 2019.

Mrs Chng is the Chief Financial Officer of DBS Group, and a member of the DBS Executive Committee. Prior

to this appointment in 2008, she was the Managing Director and Head of Risk Management at DBS Group and held the position for six years.

Mrs Chng is currently a Board member of DBS Bank India Limited. She serves on the board of Singapore Exchange Limited and chairs its Risk Management Committee. Additionally, she is a member of the CareShield Life Council. Mrs Chng previously served on the boards of the Bank of the Philippine Islands, Inland Revenue Authority of Singapore, Housing & Development Board, Accounting Standards Council and, for ten years, as the Supervisor of the board of DBS Bank (China) Limited.

Mrs Chng is a Chartered Financial Analyst, a Certified Financial Risk Manager, an Institute of Banking and Finance Singapore Distinguished Fellow, as well as a Fellow Chartered Accountant of Singapore. Mrs Chng was the recipient of AsiaRisk's Risk Manager of the Year Award in 2002 and The Asian Banker's Inaugural Risk Manager of the Year Award in 2012. Mrs Chng was named Best Chief Financial Officer at the Singapore Corporate Awards 2013, Accountant of the Year in the inaugural Singapore Accountancy Awards in 2014 and Best CFO in Singapore by the FinanceAsia's Best Companies Awards in 2023. She is a member of the International Women's Forum (Singapore).

#### 9. KWA KIM LI

Ms Kwa Kim Li is a Non-Executive Director of CAG. She was appointed to the Board on 1 October 2019.

Ms Kwa is the Managing Partner of Lee & Lee, Advocates and Solicitors. Ms Kwa graduated in 1979 from the National University of Singapore and was called to the Singapore Bar in 1980. She has been in active legal practice with the Firm for over 40 years, and her practice areas spans various aspects of law. Although her specialty is real estate, Ms Kwa also advises on loans, trusts, wills, probates, joint ventures and cross border transactions.

Ms Kwa also holds various positions outside her legal practice, including directorship in Wing Tai Holdings Limited. In the health sector, she is a Trustee of the Singapore Cardiac Society.

Ms Kwa was awarded the Ministry of Education "Service to Education" Award and the Ministry of Health 5 years Appreciation Service Award.

## BOARD OF DIRECTORS

### 10. ABDUL WAHAB BIN MOHAMED YUSOFF

Mr Adbul Wahab Bin Mohamed Yusoff is a Non-Executive Director of CAG. He was appointed to the Board on 1 October 2019.

With over 35 years of experience in the information technology, computer and cybersecurity fields, Mr Wahab has held various leadership roles in companies that are focused on helping multi-national corporations establish and grow their operations in the Asia Pacific region.

Mr Wahab was Vice President - APJ at Delinea Singapore Pte Ltd from 2021 to 2023, and in the same capacity at Forescout Technologies Pte Ltd from 2017 to 2021. He was Vice President and General Manager of Palo Alto Networks ASEAN from 2015 to 2017. He also held the role of Vice President, South Asia of McAfee & Intel Security from 2009 to 2015 and was EMC Computer Systems, South Asia's Vice President and General Manager from 2003 to 2009.

Mr Wahab holds the position of Founding Partner / Acting CEO at Rekanext Capital Partners Pte Ltd. He is presently a Board Director of Singapore Civil Service College and EZ-Link Pte Ltd. He is also a Board Member of the National Arts Council and Energy Market Authority.

Mr Wahab holds a Bachelor of Engineering degree from the National University of Singapore and is a graduate of INSEAD's International Executive Programme.

#### 11. KEE TECK KOON

Mr Kee Teck Koon is a Non-Executive Director of CAG. He was appointed to the Board on 1 March 2020.

He is the Chairman of NTUC FairPrice Co-operative Limited, NTUC FairPrice Foundation and Deputy Chairman of NTUC Enterprise Co-operative Limited, the holding organisation of FairPrice Group, NTUC First Campus, NTUC Health, Income Insurance Limited, NTUC LearningHub, and Mercatus.

He also holds directorships in Tangram Asia Capital LLP, Trust Bank Singapore Limited and Mandai Park Holdings Pte Ltd. He is an Advisor of Income Insurance Limited and CapitaLand Investment Limited and a member of the Angsana Fund Investment Committee of the Singapore Labour Foundation.

Mr Kee was awarded the Public Service Star (BBM) by the Singapore Government and Meritorious Service Award by the National Trades Union Congress in 2021. Mr Kee holds a Master of Arts in Engineering Science from Oxford University, UK.

#### 12. MARK YEO

Mr Mark Yeo is a Non-Executive Director of CAG. He was appointed to the Board on 1 April 2021.

Mr Yeo sits on the Boards of Keppel Infrastructure Trust as well as IREIT Global, both of which are listed on SGX. Prior to his current appointments, Mr Yeo was Director on the Board of Changi Airports International and held non-executive directorship on the Boards of Cityspring Infrastructure Trust, Singapore Cruise Centre and Singapore Expo/SingEx.

Mr Yeo has held various senior banking positions working on the infrastructure sector in Asia, Europe and Latin America mainly doing project finance advisory. He was based both in Singapore and London. Thereafter, he held several leadership positions in corporates in Asia and the Middle East. He started his career in the Singapore civil service.

Mr Yeo graduated with a Master of Arts from the University of Oxford and a Master of Laws from the National University of Singapore. He is also a Barrister of Gray's Inn and attended the Advanced Management Programme with INSEAD.

### MANAGEMENT TEAM

(As at 30 June 2024)

#### 1 Lee Seow Hiang Chief Executive Officer

# 2 Yam Kum Weng CEO-Designate Executive Vice President, Airport Development

#### 3 Lim Peck Hoon Executive Vice President, Commercial

# 4 Ng Lai Leng Chief Financial Officer Executive Vice President, Enterprise Performance & Development

## 5 Tan Lye Teck Executive Vice President, Safety & Security

## 6 Eugene Gan Chief Executive Officer, Changi Airports International

#### 7 Jayson Goh Executive Vice President, Airport Management

## 8 Lim Ching Kiat Executive Vice President, Air Hub & Cargo Development

## 9 Justina TanExecutive Vice President,Corporate, People and Culture

## **10 Koh Ming Sue**Executive Vice President, Engineering & Development

#### 11 Choy Da Wen

Deputy Chief Financial Officer & Managing Director, Enterprise Performance & Development

#### 12 Hung Jean

Managing Director, Enterprise Digital Ecosystem & Business



**13 Ong Chee Chiau**Managing Director,
Changi East

#### 14 Yeo Kia Thye

Managing Director, Airport Operations Control

# CORPORATE GOVERNANCE

The Board and Management of CAG (the "Company" and together with its subsidiaries, the "Group") are deeply committed to our Company's core value – integrity – which is at the heart of everything we do. We strive to meet and maintain the highest standards of corporate governance, professionalism and integrity, to build a company our stakeholders can be proud of. To operate a sustainable business over the long term and to uphold and protect the Company's brand and reputation, we strongly believe in being accountable to our immediate business and regulatory environment, as well as to the global community.

The Company's Code of Conduct sets out the principles and standards of conduct that it expects of all employees in their day-to-day activities and in the decisions they make. The Company also promotes a 'speak up' culture through its whistle blowing policy, which is intended to detect and deter unethical or illegal conduct, while protecting whistleblowers from retaliation.

In 2023, the Company passed the annual surveillance audit to maintain the ISO 37001 certification for its anti-bribery management system, providing continuing assurance to its stakeholders that it maintains internationally recognised anti-bribery controls and practices.

In April 2023, the Company was also awarded the Data Protection Trustmark (DPTM) certification by the Infocomm Media Development Authority. The DPTM is a voluntary enterprise-wide certification for organisations to demonstrate accountable data protection practices. This is part of the Company's efforts to increase its competitive advantage and build trust with its customers, partners, and stakeholders.

#### The Board of Directors

 The Company's Board of Directors is our highest decision-making body. It oversees the Company's long-term strategies and provides guidance to Management for the long-term performance and financial soundness of the Group, while safeguarding the interests of stakeholders.

#### **Composition and Balance**

- 2. Headed by Non-Executive Chairman, Mr Tan Gee Paw, the Board currently comprises 12 Directors (including an alternate director). Mr Lee Seow Hiang, our CEO, is the only executive member of the Board. He will be succeeded on 1 July 2024 by Mr Yam Kum Weng. The majority of our Board members are independent. Our Directors are individuals with broad and diverse expertise and experience.
- 3. The Board Directors of the Company are/were:
  - i. Mr Tan Gee Paw Chairman
  - ii. Mr Lee Seow Hiang CEO
  - iii. Mrs Tan Ching Yee Shareholder Representative (Alternate: Mr Titus Lee)
  - iv. Professor Tan Kong Yam
  - v. Mr Ng Chee Khern
  - vi. Mr Chia Song Hwee
  - vii. BG Kelvin Fan (stepped down on 21 March 2024)
  - viii.Mrs Chng Sok Hui
  - ix. Ms Kwa Kim Li
  - x. Mr Wahab Yusoff
  - xi. Mr Kee Teck Koon
  - xii. Mr Mark Andrew Yeo

The profiles of the Directors can be found on pages 60 to 64 of this annual report. Changi Airports International Pte Ltd (CAI), a wholly owned subsidiary of the Company, has a separate Board of Directors.

- 4. The roles of the Chairman and the CEO are separate and distinct. The Chairman leads the Board and facilitates effective and comprehensive Board discussions and decision-making on strategic issues, while the CEO has full executive responsibility for the management of the Company's businesses and implementation of the Group's strategies and policies.
- 5. At this time, there are nine Board sub-committees which assist the Board in more detailed consideration of various matters. These are the

Executive Committee (EXCO), Executive Resource and Compensation Committee (ERCC), Audit Committee (AC), Tenders Committee (TC), Executive Committee on Airport Development (ECAD), Operational Risk and Safety Committee (ORSC), Nominating Committee (NC), Capital Management Committee (CMC) and Technology & Systems Committee (TSC). Each committee is governed by its own terms of reference, which set out the scope of the committee's authority, duties and responsibilities. Ad-hoc committees are also formed from time to time to review specific issues.

6. The Board meets at least four times a year.

#### **Access to Information**

7. Prior to each Board Meeting and when necessary, the Board is provided with pertinent information – including updates on the Company's operating and financial key performance indicators, regulatory, industry and other significant developments relating to the Group – to enable the Board to make informed and sound decisions. The Board has full access to the Senior Management team and the Company Secretary. Should the Directors require independent professional advice on matters relating to the businesses or issues affecting their duties, the Company will, at its expense, arrange for the appointment of relevant professional advisors.

#### **Capital & Investments**

- 1. The EXCO comprises the following Directors:
  - i. Mr Tan Gee Paw Chairman
  - ii. Mrs Tan Ching Yee
  - iii. Mr Chia Song Hwee
  - iv. Professor Tan Kong Yam
  - v. Mr Lee Seow Hiang
- 2. The EXCO reviews and recommends to the Board financing and investment strategies of the Group and approves significant investments by the Company and CAI. The EXCO also approves treasury matters such as the acceptance of banking and credit facilities, granting of corporate guarantees, debt capital market issuances, opening of bank accounts as well as hedging policies. The EXCO also sets the financial limits for the operational, procurement and treasury activities of the Company.

- 3. The Company had expected to take on significant debt in the coming years to finance the development of Changi East. To that end, the CMC was established at the end of 2018 to provide specific oversight in the area of capital management. However, following the Covid-19 pandemic, a review of funding arrangements for the development of Changi East is ongoing, and a decision was taken to suspend the CMC on 21 October 2020 until further notice.
- 4. The suspended CMC comprises the following Directors:
  - i. Mr Chia Song Hwee Chairman
  - ii. Mr Titus Lee
  - iii. Mrs Chng Sok Hui
  - iv. Mr Lee Seow Hiang
- 5. It was intended that the CMC would review and recommend to the Board and/or EXCO the financing strategies and plans of the Company (debt capital market issuances and bank facilities), as well as guide and advise Management on the financing execution strategy.

#### **Executive Resource and Compensation**

- 1. The ERCC comprises the following Directors:
  - i. Mr Tan Gee Paw Chairman
  - ii. Mr Chia Song Hwee
  - iii. Mr Kee Teck Koon
- 2. The ERCC supports and advises the Board on remuneration matters, leadership succession and development. The responsibilities of the ERCC include:
- reviewing and approving the policy for determining executive remuneration, including the remuneration packages, service contract terms and benefits programme for key management executives;
- approving the appointment of key management executives, overseeing their development and reviewing succession plans to ensure a strong pipeline of talent to enable the continued success of the Company; and
- iii. recommending the remuneration framework, including fees for non-executive Directors.

#### CORPORATE GOVERNANCE

#### **Accountability and Audit**

#### **Accountability**

 Management provides all members of the Board with reports on operating and financial information and key performance indicators on a quarterly basis and as the Board may require from time to time, to enable the Board to make balanced and informed assessments of the Group's performance, position and prospects.

#### **Audit Matters**

- 2. The AC comprises the following Directors:
  - i. Mrs Chng Sok Hui Chairman
  - ii. Mrs Tan Ching Yee
  - iii. BG Kelvin Fan (stepped down on 21 March 2024)
- The main responsibilities of the AC are to assist the Board in discharging its statutory and other responsibilities relating to the Company's internal controls, financial and accounting matters, compliance, and business and financial risk management.
- 4. The AC is responsible for reviewing the effectiveness of financial, compliance and risk management frameworks, as well as the robustness of the reporting and disclosure processes. The AC also reviews the adequacy of whistleblowing arrangements implemented by the Company through which employees, partners, suppliers, contractors, and other stakeholders can raise concerns in confidence about possible improprieties in matters of financial reporting or other matters. All whistle blowing complaints are reviewed by the AC to ensure independent and thorough investigation, and adequate follow-up and resolution of the matters reported. The AC also provides oversight for the effectiveness of the Company's anti-bribery management system.
- 5. The AC performs independent review of the financial statements of the Company and reviews the key areas of management judgment applied for

- adequate disclosure, critical accounting policies and any significant changes that would have a material impact on the financial statements.
- 6. The AC reviews the adequacy and effectiveness of the internal audit function and its processes, as well as ensures it is adequately resourced to carry out its function effectively. The AC reviews the Internal Audit (IA) Division's plans, its effectiveness and audit scope, and also approves its budget. The AC receives reports from IA at the completion of each audit, and at each AC meeting, IA provides the AC with updates on the key findings from the audit reviews, the remediation actions which have been or will be taken to address these findings, and an overview of the resolution of the audit issues (including current and past-due issues) to verify the effectiveness and timeliness of actions taken by Management on the internal auditors' recommendations and observations. Any changes to the audit plan will also be tabled for AC approval at the AC meetings.
- 7. The AC reviews and approves the external audit plan, the scope and results of the external audit. The AC also reviews the external audit reports to ensure that significant findings and observations regarding control weaknesses are promptly rectified. Prior to making recommendations to the Board on the external auditor's appointment or reappointment, the AC reviews the external auditor's independence, objectivity and quality of work based on the Audit Quality Indicators Disclosure framework established by the Accounting and Corporate Regulatory Authority. In line with best practice, the external audit partner is rotated every five years. The AC also reviews the non-audit fees awarded to the external auditors to ensure that the non-audit services performed by them would not affect their independence. The aggregate amount of audit and non-audit fees paid for the external auditor of the Company and its network firms for the financial year ended 31 March 2024 (rounded to the nearest million) was \$0.6m and \$0.1m respectively.
- 8. The AC meets with the internal and/or external auditors three times during the year. At least one of these meetings is conducted without the presence of Management, where the auditors may raise issues encountered in the course of their work directly to the AC.

#### **Internal Controls**

- 1. The Board and Management of the Company are fully committed to maintaining a robust system of internal controls, procedures and risk management to safeguard our shareholder's interests and the Group's assets. The Board delegates its oversight responsibilities for internal controls, financial and strategic (business) risk management and compliance matters to the AC, which ensures the effectiveness and adequacy of the system of internal controls in the Company, while the ORSC assists the Board in reviewing the operational and safety risk management and compliance systems put in place by Management.
- 2. The internal controls established by the Company are supported by systems, processes and people. The Company's three lines of defence for risk management are as follows:
  - i. the first line of defence is the business units who are responsible for identifying and managing risks inherent in their businesses;
  - ii. the second line of defence comprises the oversight and control functions such as Enterprise Risk Management (ERM), Legal & Compliance, Aerodrome Safety, Aviation Security, Cybersecurity & Digital Governance, and Enterprise Performance; and
  - iii. the third line of defence is IA, which provides an independent assessment and assurance on the reliability, adequacy and effectiveness of the Company's system of internal controls, risk management procedures, governance framework and processes.
- 3. The Company's internal and external auditors review its key internal controls for material non-compliance or failures in internal controls and recommend areas of improvements. The AC reviews the effectiveness of the actions taken by Management in response to the recommendations made.
- 4. The AC also reviews the effectiveness of the enterprise risk management framework and the risk management processes put in place to manage financial and strategic (business) risks while meeting business objectives. Control self-assessments in key areas of the Group's businesses / operations are

- conducted by Management on a periodic basis to evaluate the adequacy and effectiveness of the risk management and internal control systems.
- 5. As part of the Company's anti-bribery management system, all employees undergo annual anti-bribery training, and divisions perform identification and assessment of bribery risk annually and put in place appropriate mitigating measures. Employees in sensitive positions are also required to submit declarations relating to anti-bribery compliance yearly.
- 6. A separate TC evaluates and approves the award of tenders for goods and services exceeding \$\$50 million in value, except for those related to new development projects and major redevelopment projects at Changi Airport which come under the purview of the ECAD. The TC comprises the following Directors:
  - i. Mr Ng Chee Khern Chairman
  - ii. Ms Kwa Kim Li
  - iii. Mr Lee Seow Hiang

#### Internal Audit

- 7. IA assists the AC to ensure that the Company maintains sound risk management and internal control systems. IA is independent of the activities it audits. It conducts regular audits of high-risk areas, and undertakes investigations as directed by the AC. It comprises suitably qualified and experienced staff, headed by the Senior Vice President, Internal Audit (SVP, IA). SVP, IA reports functionally to the Chairman of the AC, and administratively to the CEO. To ensure the independence of the IA function, the IA team has unrestricted access to the AC.
- 8. IA adopts a risk-based approach in formulating its annual audit plan that aligns its activities to the key risks across the Company's businesses, focusing on key internal controls, including financial, operational and compliance controls. The annual audit plan is developed in consultation with, but is independent of, Management and is approved by the AC. IA also works closely with Management to provide internal consulting and control advisory to promote effective risk management, robust internal control and good governance practices in the development of new services / products and the implementation of new / enhanced systems and processes. IA also

#### CORPORATE GOVERNANCE

- harnesses technology to maximise efficiencies in the way it audits, through robust use of analytics and continuous auditing.
- 9. In line with best practices, IA has a quality assurance and improvement programme (QAIP) that covers its audit activity and conforms to the International Standards for the Professional Practice of Internal Auditing. Internal Quality Assurance Reviews (QAR) are conducted half-yearly, and external QAR are carried out at least once every five years by qualified professionals from an external organisation, which in 2023, Deloitte & Touche Enterprise Risk Services Pte Ltd ("DT") was appointed to conduct the external QAR.
- 10. IA's assessments on the adequacy and effectiveness of internal controls over processes / systems across the businesses are reported to the AC, and a summary of key findings and recommendations are also discussed at the AC meetings. IA also tracks and reports to the AC on the implementation status of actions agreed by Management, so as to ensure prompt and adequate closure of audit observations.

#### **Airport Development**

- The ECAD currently comprises three Directors, and six non-voting co-opted members who provide additional advice and expertise in relation to development projects.
- 2. The three Directors are:
  - i. Mr Tan Gee Paw Chairman
  - ii. Mr Titus Lee
  - iii. Mr Lee Seow Hiang
- 3. The six non-voting co-opted members are:
  - i. Professor Lui Pao Chuen
  - ii. Mr Lai Huen Poh
  - iii. Mr Lee Chuan Seng
  - iv. Mr Lee Kut Cheung
  - v. Mr Kok King Min
  - vi. Professor Tan Thiam Soon

- 4. The ECAD oversees new development and major redevelopment projects at Changi Airport. The responsibilities of the ECAD include:
  - reviewing and approving collaborations, selection of consultants, architects and other professional advisors, design concepts, aesthetic element proposals and other proposals related to development projects at Changi Airport; and
  - ii. reviewing and approving tenders for goods and services exceeding \$\$50 million related to development projects at Changi Airport.

#### **Nominating Committee**

- 1. The NC comprises the following Directors:
  - i. Mr Tan Gee Paw Chairman
  - ii. Mrs Tan Ching Yee
  - iii. Mr Chia Song Hwee
  - iv. Ms Kwa Kim Li
- The NC assists the Board in reviewing the structure, size, composition, core competencies and skills required by the Board and its committees to support the strategic objectives and values of the Company and makes relevant recommendations to the Board.

#### **Technology & Systems Committee**

- 1. The TSC comprises five Directors and one nonvoting member who has been co-opted to provide additional advice and expertise, as follows:
  - i. Mr Ng Chee Khern Chairman
  - ii. Mr Chia Song Hwee
  - iii. Mr Titus Lee
  - iv. Mr Wahab Yusoff
  - v. Mr Lee Seow Hiang
  - vi. Professor Lui Pao Chuen (co-opted member)
- The TSC provides guidance to Management on technology-driven innovation, as well as the development of technological capabilities in support of the Company's transformation. It also guides the Company on its strategy for the co-development of solutions and investments into start-ups with promising new technologies.

### ENTERPRISE RISK MANAGEMENT

- CAG continues to strengthen its risk governance and remains steadfast to its commitment to minimise key risks as well as the impact of damage through timely risk identification and implementation of appropriate mitigation strategies.
- 2. In financial year 2023/24, CAG continued its efforts to rebuild the Changi air hub and airport business. Passenger traffic at Changi Airport returned to pre-Covid levels by the end of the year. Amidst a tight labour market, CAG embarked on trials to transform airport operations to future-proof Changi. The full reopening of Terminal 2 in November 2023 also enabled the airport to accommodate the increase in passenger traffic.
- CAG also forged ahead with its plans to transit
  to renewable energy. It navigated through
  macroeconomic headwinds, which saw subdued
  consumer spending compounded by rising operating
  costs. Despite the challenges, CAG ensured that
  Changi Airport continued to operate safely, securely
  and efficiently.

#### **Risk Governance**

- 4. The CAG Board and Management are responsible for the management of risks in Changi Airport.

  The Board, through the Operational Risk & Safety Committee (ORSC), provides oversight on operational and safety risks, while the review of the Company's financial and strategic risks is overseen by the Audit Committee (AC).
- 5. The ORSC comprises three Directors and two coopted members, who provide additional advice and expertise to the Committee.
- The three Directors are / were:
   BG Kelvin Fan Chairman
   (stepped down on 21 March 2024)
   Ms Kwa Kim Li
   Mr Abdul Wahab Bin Mohamed Yusoff

The two co-opted members are: Mr Mike Barclay Mr Wong Woon Liong

7. The Board Committees work with the Management to ensure effective allocation of resources to create and protect CAG's assets and value. At

- the Management level, the Management Risk Committee (RC) is responsible for monitoring the risk management and internal control systems and ensuring that emerging risks are managed appropriately. The RC is chaired by the CEO and comprises Senior Management members of the Company. It meets regularly to review the Company's key risks and provides strategic guidance to reinforce the implementation of enterprise risk management within the Company as needed.
- 8. The Enterprise Risk Management (ERM) unit supports the Board Committees and Management in their management of risks within CAG. The ERM unit carries out global risk scanning efforts for emerging risks to keep mitigation strategies timely and relevant. It also works closely with the programme office to monitor the Changi East project comprising the future Terminal 5, connecting tunnels, and the three-runway system to ensure that risk factors across the design and construction phases, such as safety, operations, scheduling and cost, are mitigated to achieve optimal project outcomes.

#### **Risk Awareness Culture**

- 9. Risk management is an integral part of CAG's culture. Every employee is to function as a risk manager for his or her own area of work by being vigilant and reporting risks in a timely manner. The ERM unit continues to equip its network of risk management champions to promote a more robust risk-aware culture across CAG and enhance risk-considered decision making.
- 10. The ERM unit continues to meet with risk owners regularly to ensure that risks are adequately addressed. It is involved in key committees such as the Information Assurance Committee and the Safety Committee, and will continue to work alongside business units to provide risk advisory to help them meet their business objectives amid challenging headwinds.

#### **Strengthening Cybersecurity**

11. CAG has a Cybersecurity and Digital Governance division to oversee cybersecurity with an enterprise-wide vision, strategy and programme. In 2023/24, it expanded its cybersecurity awareness programme to instil a strong culture of vigilance and active threat detection among its employees. It also demonstrated its commitment to information security by obtaining both ISO 27001 certification and Cyber Trust mark for its largest online store, iShopChangi. CAG continues to strengthen its digital security and resilience to ensure a safer cyberspace for customers and passengers.

### GROUP FINANCIAL SUMMARY

The Group Financial Summary as set out on pages 72 to 87 contains only a summary of the information extracted from the Statement by Directors and the audited consolidated financial statements of Changi Airport Group (Singapore) Pte. Ltd. and its subsidiaries for the financial year ended 31 March 2024.

For a full understanding of the state of affairs of the Company and the Group as at 31 March 2024 and of the results of the Group for the financial year ended 31 March 2024, the Group Financial Summary should be read in conjunction with the audited consolidated financial statements and the audit report thereon, which can be obtained via the Company's website (http://www.changiairportgroup.com).

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### DIRECTORS' STATEMENT

For the financial year ended 31 March 2024

The directors present their statement to the member together with the audited financial statements of the Group for the financial year ended 31 March 2024 and the balance sheet of the Company as at 31 March 2024.

In the opinion of the directors,

- (a) the balance sheet of the Company and the consolidated financial statements of the Group as set out on pages 9 to 70\* are drawn up so as to give a true and fair view of the financial position of the Company and of the Group as at 31 March 2024 and the financial performance, changes in equity and cash flows of the Group for the financial year covered by the consolidated financial statements; and
- (b) at the date of this statement, there are reasonable grounds to believe that the Company will be able to pay its debts as and when they fall due.

#### **DIRECTORS**

The directors of the Company in office at the date of this statement are as follows:

Mr Tan Gee Paw

Mr Lee Seow Hiang

Chief Executive Officer

Chairman

Mr Abdul Wahab Bin Mohamed Yusoff

Mr Chia Song Hwee

Mrs Chng Sok Hui

Mr Kee Teck Koon

Ms Kwa Kim Li

Mr Mark Yeo

Mr Ng Chee Khern

Mrs Tan Ching Yee

Mr Tan Kong Yam

Mr Titus Lee Huisheng

(Alternate director to Mrs Tan Ching Yee)

#### ARRANGEMENTS TO ENABLE DIRECTORS TO ACQUIRE SHARES AND DEBENTURES

Neither at the end of nor at any time during the financial year was the Company a party to any arrangement whose object was to enable the directors of the Company to acquire benefits by means of the acquisition of shares in, or debentures of, the Company or any other body corporate.

<sup>\*</sup> These page numbers refer to the pages in the full set of consolidated financial statements.

### DIRECTORS' STATEMENT

For the financial year ended 31 March 2024

#### **DIRECTORS' INTERESTS IN SHARES OR DEBENTURES**

According to the register of directors' shareholdings, none of the directors holding office at the end of the financial year had any interest in the shares or debentures of the Company or its related corporations.

#### **SHARE OPTIONS**

There were no options granted during the financial year to subscribe for unissued shares of the Company.

No shares have been issued during the financial year by virtue of the exercise of options to take up unissued shares of the Company.

There were no unissued shares of the Company under option at the end of the financial year.

#### INDEPENDENT AUDITOR

The independent auditor, PricewaterhouseCoopers LLP, has expressed its willingness to accept re-appointment.

On behalf of the Board of Directors

**Tan Gee Paw** Chairman **Lee Seow Hiang**Chief Executive Officer

6 June 2024

To the Member of Changi Airport Group (Singapore) Pte. Ltd.

#### REPORT ON THE AUDIT OF THE FINANCIAL STATEMENTS

#### **Our Opinion**

In our opinion, the accompanying consolidated financial statements of Changi Airport Group (Singapore) Pte. Ltd. (the "Company") and its subsidiaries (the "Group") and the balance sheet of the Company are properly drawn up in accordance with the provisions of the Companies Act 1967 (the "Act") and Singapore Financial Reporting Standards (International) ("SFRS(I)s") so as to give a true and fair view of the consolidated financial position of the Group and the financial position of the Company as at 31 March 2024 and of the consolidated financial performance, consolidated changes in equity and consolidated cash flows of the Group for the financial year ended on that date.

#### What we have audited

The financial statements of the Company and the Group comprise:

- the consolidated income statement of the Group for the financial year ended 31 March 2024;
- the consolidated statement of comprehensive income of the Group for the financial year ended 31 March 2024;
- the balance sheets of the Company and the Group as at 31 March 2024;
- the consolidated statement of changes in equity of the Group for the financial year then ended;
- the consolidated statement of cash flows of the Group for the financial year then ended; and
- the notes to the financial statements, including material accounting policy information.

#### **Basis for Opinion**

We conducted our audit in accordance with Singapore Standards on Auditing ("SSAs"). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Independence

We are independent of the Group in accordance with the Accounting and Corporate Regulatory Authority Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities ("ACRA Code") together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code.

To the Member of Changi Airport Group (Singapore) Pte. Ltd.

#### **Our Audit Approach**

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the accompanying financial statements. In particular, we considered where management made subjective judgements; for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits, we also addressed the risk of management override of internal controls, including among other matters consideration of whether there was evidence of bias that represented a risk of material misstatement due to fraud.

#### Key Audit Matter

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements for the financial year ended 31 March 2024. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

#### **Key Audit Matter**

#### Property, Plant and Equipment ("PPE")

The Group invests significantly into its capital infrastructure assets to support the growth and ongoing operations of the Singapore Changi Airport and Singapore as an air hub. Whilst the development of Terminal 5 ("T5") was temporarily paused in 2020 as a result of the COVID-19 pandemic, construction of the terminal is expected to start in 2025, with completion planned in phases. Works on other areas of the Changi East ("CE") such as the Three runway system and tunnels continues during the financial year.

The Group's total additions to PPE, including those relating to CE, amounted to \$833 million during the financial year (Note 11\*). We focused our audit on the accounting for additions to PPE for the CE project as the additions are material to the financial statements of the Group.

At the end of the financial year, management estimates the progress of construction or development works that have not been billed by suppliers and contractors and accrues for the unbilled PPE under construction. Estimates of percentage of completion of construction are made based on certified progress reports from the suppliers and contractors.

#### How our audit addressed the Key Audit Matter

We performed a walkthrough of the procurement and fixed assets capitalisation cycle and evaluated the design, implementation and operating effectiveness of key internal controls over payments, accruals and capitalisation of PPE additions.

In respect of the additions to PPE arising from suppliers and contractors, we selected samples of the additions and verified that they were appropriately supported by the relevant supplier invoices. For accrued balances, we sighted the relevant certified progress reports to support the appropriateness of the accrued amounts.

We also checked that payments of invoices and progress reports used for accrual of unbilled PPE construction costs were approved by management in accordance with the Delegation of Authority set out by the Board.

For capitalised employee compensation, we selected samples to verify that only employee compensation for employees working for construction or development works directly attributable to PPE were capitalised. We also assessed management's internal cost allocation to the relevant assets for appropriateness.

We also sighted on a sampling basis, construction-inprogress assets to verify the existence of asset additions.

To the Member of Changi Airport Group (Singapore) Pte. Ltd.

**Our Audit Approach (continued)** 

Key Audit Matter (continued)

#### **Key Audit Matter**

# Employee compensation was also capitalised as PPE. Management reviews the job scopes of employees and allocation of costs to capitalise as part of PPE on a periodic basis to ensure that only employee compensation directly attributable to CE were capitalised.

Estimation of construction progress, recording of accruals, capitalisation of internal costs also involve estimation and judgement.

#### How our audit addressed the Key Audit Matter

We also reviewed the adequacy and appropriateness of disclosures in the financial statements in respect of the Group's PPE balances.

\* This reference is made in relation to the full set of consolidated financial statements.

#### Other Information

Management is responsible for the other information. The other information comprises the Directors' Statement (but does not include the financial statements and our auditor's report thereon), which we obtained prior to the date of this auditor's report, and the other sections of the annual report ("the Other Sections"), which are expected to be made available to us after that date.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and in doing so consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

When we read the Other Sections, if we conclude that there is a material misstatement therein, we are required to communicate the matter to those charged with governance and take appropriate actions in accordance with SSAs.

To the Member of Changi Airport Group (Singapore) Pte. Ltd.

Responsibilities of Management and Directors for the Financial Statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with the provisions of the Act and SFRS(I)s, and for devising and maintaining a system of internal accounting controls sufficient to provide a reasonable assurance that assets are safeguarded against loss from unauthorised use or disposition; and transactions are properly authorised and that they are recorded as necessary to permit the preparation of true and fair financial statements and to maintain accountability of assets.

In preparing the financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

The directors' responsibilities include overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are
  appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the
  Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

To the Member of Changi Airport Group (Singapore) Pte. Ltd.

Auditor's Responsibilities for the Audit of the Financial Statements (continued)

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business
  activities within the Group to express an opinion on the consolidated financial statements. We are responsible
  for the direction, supervision and performance of the group audit. We remain solely responsible for our
  audit opinion.

We communicate with the directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

#### REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

In our opinion, the accounting and other records required by the Act to be kept by the Company and by those subsidiary corporations incorporated in Singapore of which we are the auditors, have been properly kept in accordance with the provisions of the Act.

The engagement partner on the audit resulting in this independent auditor's report is Kok Moi Lre.

PricewaterhouseCoopers LLP Public Accountants and Chartered Accountants Singapore, 6 June 2024

## CONSOLIDATED INCOME STATEMENT

		Group
	2024	2023
	\$'000	\$'000
Revenue	2,726,929	1,882,523
Expenses		
- Depreciation and amortisation	(708,556)	(704,058)
- Maintenance of land, buildings and equipment	(416,990)	(395,531)
- Services and security related expenses	(264,427)	(200,811)
- Employee compensation	(344,418)	(293,809)
- CAAS services and licence fees	(327,354)	(114,984)
- Property tax	(66,677)	(47,283)
- Other operating expenses	(105,036)	(99,927)
Total expenses	(2,233,458)	(1,856,403)
Operating profit	493,471	26,120
Finance expenses	(71,469)	(72,361)
Other income and losses – net	95,959	118,064
Share of results of associated companies and joint ventures	32,969	(43,148)
Profit before tax	550,930	28,675
Income tax expense	(132,645)	(19,419)
Profit after tax	418,285	9,256
Profit/(loss) after tax attributable to:		
Equity holder of the Company	430,932	32,630
Non-controlling interests	(12,647)	(23,374)
	418,285	9,256

## CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

		Group
	2024	2023
	\$'000	\$'000
Profit after tax	418,285	9,256
Other comprehensive (loss)/income:		
Items that may be reclassified subsequently to income statement:		
Cash flow hedges		
- Fair value (losses)/gains	(26,697)	9,595
- Reclassification	(9,629)	9,227
Currency translation differences arising on consolidation		
- Losses	(169)	(977)
- Reclassification	_	(6,005)
Other comprehensive (loss)/income, net of tax	(36,495)	11,840
Total comprehensive income	381,790	21,096
Total comprehensive income/(loss) attributable to:		
Equity holder of the Company	397,066	40,968
Non-controlling interests	(15,276)	(19,872)
MOLI-COLLIONING HITCIESTS	381,790	21,096
	301,770	21,070

## BALANCE SHEETS

As at 31 March 2024

Section   Sect		Group		Company		
Sample						
Name						
Current assets         2,114,539         1,594,954         2,071,056         1,541,579           Cash and cash equivalents         350,321         275,166         334,420         261,569           Other investments         762,275         466,833         722,268         42,767           Other current assets         157,873         88,315         135,067         85,105           Inventories         8,274         8,267         5,953         5,454           Inventories         3,398,689         2,433,535         3,287,222         2,322,472           Non-current assets         1         1,600,600         8,494,751         8,646,314         8,655,047           Froperty, plant and equipment         8,675,062         8,494,751         8,646,314         8,655,199           Intangible assets         5,495         6,772         929,475         979,00           Subsidiaries         2,606         2,250         13,614         13,614           Investment property         1,160,181         1,217,843         -         -           Other investments         100,614         6,7102         94,485         5,989           Derivatives         1,722         13,592         -         -           Other investments </td <td></td> <td>•</td> <td>·</td> <td>•</td> <td>· · · · · · · · · · · · · · · · · · ·</td>		•	·	•	· · · · · · · · · · · · · · · · · · ·	
Cash and cash equivalents         2,114,539         1,544,545         2,114,577           Trade and other receivables         350,321         275,164         334,202         241,569           Other investments         762,275         466,833         722,286         428,767           Other current assets         157,873         88,315         153,507         5,454           Inventories         8,274         8,267         5,953         5,454           Inventories         3,398,688         2,433,535         3,287,222         2,922,472           Non-current assets         7         178,345         185,024           Property, plant and equipment         8,675,062         8,447,571         8,646,314         8,465,190           Intangible assets         5,495         6,772         -         -         -         18,646,314         8,465,190           Intangible assets         930,265         979,906         929,75         799,906         89,277         79,906         89,275         133,614         13,614         1,616,191         1,616,114         1,161,114         1,172,114         1,172,114         1,172,114         1,172,114         1,172,114         1,172,114         1,172,114         1,172,114         1,172,114         1,172,114	ASSETS					
Tada and other receivables						
Other current assets         762,275         466,833         722,286         428,767           Other current assets         157,873         88,15         153,507         85,105           Inventories         8,247         8,267         5,953         5,454           Inventories         3,398,689         2,433,535         3,287,222         2,322,472           Non-current assets         3,398,689         2,433,535         3,287,222         2,322,472           Property, plant and equipment         8,675,062         8,494,751         8,646,314         8,465,190           Intangible assets         5,495         6,772         -         8,790,06         333,681         333,681         333,681         333,681         333,681         333,681         333,681         333,681         333,681         333,681         1,814	•					
Other current assets         157,873         88,315         153,507         85,105           Derivatives         5,075         5,953         5,454           Inventories         8,274         8,267         5,953         5,454           Non-current assets         -         -         178,345         185,024           Property, plant and equipment         8,675,062         8,494,751         8,646,314         8,465,190           Intangible assets         5,495         6,772         979,06           Right-of-use assets         930,265         979,06         229,475         979,06           Subsidiaries         -         -         333,681         333,881           Associated companies and joint ventures         26,04         22,250         13,614         13,614           Investment property         1,160,181         1,217,843         -         -           Other investments         100,614         6,102         94,485         59,890           Derivatives         1,222         13,33,681         46,774         79,747           Other on-current assets         20,459         53,664         46,774         79,747           Deferred tax assets         1,938         1,93,783         10,242,388						
Derivatives Inventories         5,407 (a.g., p.s.)         5,55 (a.g., p.s.)         5,42 (a.g., p.s.)         2,43,535         3,287,222         2,322,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,472         2,22,475         3,22,473         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423         3,22,42,423						
Numertories			88,315	153,507	85,105	
Non-current assets			-	-	-	
Non-current assets         Interest and other receivables         1         178,345         185,024           Property, plant and equipment Intangible assets         8,675,062         8,494,751         8,646,314         8,651,109           Right-of-use assets         930,265         979,906         929,475         979,006           Subsidiaries         -         -         333,681         333,681           Associated companies and joint ventures         26,046         22,50         13,614         13,614           Investment property         1,160,181         1,217,843         -         -           Other investments         100,614         67,102         94,885         59,890           Other investments         20,459         53,664         46,474         79,747           Other on-current assets         20,459         53,664         46,474         79,747           Deferred tax assets         10,948,633         10,879,830         10,242,388         10,117,052           Total assets         1,047,302         33,31,361         13,059,252         12,23,250           Total assets         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76	Inventories		· · · · · · · · · · · · · · · · · · ·	•		
Table and other receivables	Non-assument accepts	3,398,689	2,433,535	3,287,222	2,322,472	
Property, plant and equipment Intangible assets         8,675,062         8,494,751         8,646,314         8,465,190           Intangible assets         5,495         6,772         -         -         -         797,906         929,475         979,906         Subsidiaries         -         -         333,681         333,681         333,681         13,614         11,611         11,611         1,611         11,611         1,611 <td< td=""><td></td><td></td><td></td><td>170 245</td><td>105.004</td></td<>				170 245	105.004	
Intangible assets		0 (75 0/2	- 0.404.754			
Right-of-use assets         930,265         979,906         929,475         979,906           Subsidiaries         -         4         22,250         13,614         13,1614           Associated companies and joint ventures         26,046         22,250         13,614         13,614           Investment property         1,160,181         1,217,843         -         -           Other investments         100,614         67,102         94,485         59,890           Derivatives         1,722         13,592         -         -           Other non-current assets         20,459         53,664         44,747         79,747           Deferred tax assets         10,948,633         10,879,830         10,242,388         10,117,052           Total assets         1,4347,322         13,313,365         13,529,610         12,439,524           Total assets         1,0948,633         10,879,830         10,242,388         10,117,052           LIABILITIES           Current days description         1,017,302         900,108         1,213,736         10,69,785           Trade and other payables         1,017,302         90,018         1,213,736         1,069,785           Current tax liabilities         133,788 <td></td> <td></td> <td></td> <td>0,040,314</td> <td>6,465,190</td>				0,040,314	6,465,190	
Subsidiaries         -         -         333,681         333,681           Associated companies and joint ventures         26,046         22,250         13,614         13,614           Investment property         1,160,181         1,217,843         -         -           Other investments         100,614         67,102         94,485         59,890           Derivatives         20,459         53,664         46,474         79,747           Deferred tax assets         28,789         23,950         -         -           Deferred tax assets         10,948,633         10,879,830         10,242,388         10,117,052           Total assets         1,047,302         900,108         1,213,736         12,439,524           LABILITIES         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Derivatives         -         227         227         227           Current tax liabilities         133,788         26,160         120,008         13,851           Current tax liabilities         134,802         10,78,317         150,911         122,3160           Non-current liabilities         13,842 <td><del>-</del></td> <td></td> <td>,</td> <td>020 475</td> <td>070 006</td>	<del>-</del>		,	020 475	070 006	
Associated companies and joint ventures         26,046         22,250         13,614         13,614           Investment property         1,160,181         1,217,843         -         -           Other investments         100,614         67,102         94,485         59,890           Derivatives         1,722         13,592         -         -           Other non-current assets         20,459         53,664         46,474         79,747           Deferred tax assets         28,789         23,950         -         -         -           Edition of the passets         10,948,633         10,879,830         10,242,388         10,117,052           Total assets         14,347,322         13,313,365         13,529,610         12,439,524           LIABILITIES           Turde and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Tax and other payables         122,490		730,203	777,700			
Number		26 046	22 250			
Other investments         100,614         67,102         94,485         59,890           Derivatives         1,722         13,592         -         -           Other non-current assets         20,459         53,664         46,474         79,747           Deferred tax assets         28,789         23,950         -         -           Total assets         10,948,633         10,879,830         10,242,388         10,117,052           Total assets         14,347,322         13,313,365         13,529,610         12,439,524           LIABILITIES           Current liabilities           Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         1342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities         132,490         183,146         76,710         138,842           Lease liabilities         936,048 <td></td> <td></td> <td></td> <td>15,014</td> <td>15,014</td>				15,014	15,014	
Derivatives Other non-current assets         1,722 Other non-current assets         13,592 Other non-current assets         7,747 Other non-current assets         20,459 Sta,664 Ad,474 Pta,77,747         7,747 Pta,77         7,747 Pta,747 Pta,74	,			94 485	59 890	
Other non-current assets         20,459         53,664         46,474         79,747           Deferred tax assets         28,789         23,950         -         -           10,948,633         10,879,830         10,242,388         10,117,052           Total assets         14,347,322         13,313,365         13,529,610         12,439,524           LIABILITIES           Current liabilities           Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Lease liabilities         1342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Loans and borrowings         1,924,719         1,971,824         750,000         750,000           Deferred tax liabilities				7 1, 105	-	
Pubmis   P				46,474	79.747	
Total assets         10,948,633         10,879,830         10,242,388         10,117,052           LIABILITIES           Current liabilities           Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Derivatives         2         227         227         227         227           Current income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Current tax liabilities         133,788         26,160         120,008         13,851           Trade and other payables         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         137,302         100,000         37,302         -           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities <t< td=""><td></td><td></td><td></td><td>-</td><td>-</td></t<>				-	-	
LIABILITIES           Current liabilities           Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Non-current liabilities         1,342,802         1,078,317         1,509,115         1,223,160           Noracurrent liabilities         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953				10,242,388	10,117,052	
Current liabilities           Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         75,788         75,558         76,378           Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Trade and other payables         1,342,802         1,078,317         1,509,115         1,223,160           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         1,924,719         1,971,824         750,000         750,000           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         3,761,420	Total assets	14,347,322	13,313,365	13,529,610	12,439,524	
Current liabilities           Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         75,788         75,558         76,378           Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Trade and other payables         1,342,802         1,078,317         1,509,115         1,223,160           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         1,924,719         1,971,824         750,000         750,000           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         2,774,009         3,265,383         3,761,420						
Trade and other payables         1,017,302         900,108         1,213,736         1,069,785           Lease liabilities         75,899         76,378         75,558         76,378           Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Non-current liabilities         1,342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,65,383         2,774,009           Deferred tax liabilities         133,202         100,000         37,302         -           Deferred tax liabilities         1,841,953         7,74,009         3,65,383         2,774,009           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY </td <td></td> <td></td> <td></td> <td></td> <td></td>						
Lease liabilities         75,899         76,378         75,558         76,378           Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           1,342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities           Trade and other payables         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Loans and borrowings         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -0           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421     <		4.047.000	000 400	4 040 707	4.040.705	
Derivatives         -         227         -         227           Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Non-current liabilities         1,342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Lease liabilities         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY         Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608 <td>· ·</td> <td></td> <td></td> <td></td> <td></td>	· ·					
Deferred income         115,813         75,444         99,813         62,919           Current tax liabilities         133,788         26,160         120,008         13,851           Non-current liabilities         1,342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities         8         8         71,200         1,509,115         1,223,160           Incompany         1         122,490         183,146         76,710         138,842         1,224,700         1,224,700         935,638         972,300         1,235,638         972,300         935,638         972,300         750,000		75,899		75,558		
Current tax liabilities         133,788         26,160         120,008         13,851           Non-current liabilities         1,342,802         1,078,317         1,509,115         1,223,160           Non-current liabilities         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Loans and borrowings         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY           Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (		115 012		00.012		
1,342,802       1,078,317       1,509,115       1,223,160         Non-current liabilities         Trade and other payables       122,490       183,146       76,710       138,842         Lease liabilities       936,048       972,300       935,638       972,300         Loans and borrowings       1,924,719       1,971,824       750,000       750,000         Derivatives       137,302       100,000       37,302       -         Deferred income       3,265,383       2,774,009       3,265,383       2,774,009         Deferred tax liabilities       113,209       90,792       111,997       90,792         Total liabilities       7,841,953       7,170,388       6,686,145       5,949,103         NET ASSETS       6,505,369       6,142,977       6,843,465       6,490,421         EQUITY         Share capital and reserves       3,789,666       3,820,758       3,761,420       3,789,608         Retained profits       2,846,992       2,438,232       3,082,045       2,700,813         Non-controlling interests       (131,289)       (116,013)       -       -       -			•	•		
Non-current liabilities         Trade and other payables         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Loans and borrowings         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY           Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -         -	Current tax nabilities					
Trade and other payables         122,490         183,146         76,710         138,842           Lease liabilities         936,048         972,300         935,638         972,300           Loans and borrowings         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY           Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -         -	Non-current liabilities	1,542,002	1,070,317	1,507,115	1,223,100	
Lease liabilities       936,048       972,300       935,638       972,300         Loans and borrowings       1,924,719       1,971,824       750,000       750,000         Derivatives       137,302       100,000       37,302       -         Deferred income       3,265,383       2,774,009       3,265,383       2,774,009         Deferred tax liabilities       113,209       90,792       111,997       90,792         Total liabilities       7,841,953       7,170,388       6,686,145       5,949,103         NET ASSETS       6,505,369       6,142,977       6,843,465       6,490,421         EQUITY         Share capital and reserves       3,789,666       3,820,758       3,761,420       3,789,608         Retained profits       2,846,992       2,438,232       3,082,045       2,700,813         Non-controlling interests       (131,289)       (116,013)       -       -       -		122 490	183 146	76 710	138 842	
Loans and borrowings         1,924,719         1,971,824         750,000         750,000           Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY           Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -						
Derivatives         137,302         100,000         37,302         -           Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           6,499,151         6,092,071         5,177,030         4,725,943           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY         Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -			•		·	
Deferred income         3,265,383         2,774,009         3,265,383         2,774,009           Deferred tax liabilities         113,209         90,792         111,997         90,792           6,499,151         6,092,071         5,177,030         4,725,943           NET ASSETS         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY           Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -		, ,			-	
Deferred tax liabilities         113,209         90,792         111,997         90,792           6,499,151         6,092,071         5,177,030         4,725,943           Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY           Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -					2.774.009	
Total liabilities       7,841,953       7,170,388       6,686,145       5,949,103         NET ASSETS       6,505,369       6,142,977       6,843,465       6,490,421         EQUITY       Share capital and reserves       3,789,666       3,820,758       3,761,420       3,789,608         Retained profits       2,846,992       2,438,232       3,082,045       2,700,813         Non-controlling interests       (131,289)       (116,013)       -       -       -						
Total liabilities         7,841,953         7,170,388         6,686,145         5,949,103           NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY         Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -						
NET ASSETS         6,505,369         6,142,977         6,843,465         6,490,421           EQUITY         Share capital and reserves         3,789,666         3,820,758         3,761,420         3,789,608           Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           Non-controlling interests         (131,289)         (116,013)         -         -         -					· · · · · · · · · · · · · · · · · · ·	
EQUITY         Share capital and reserves       3,789,666       3,820,758       3,761,420       3,789,608         Retained profits       2,846,992       2,438,232       3,082,045       2,700,813         Kon-controlling interests       (131,289)       (116,013)       -       -       -	Total liabilities	7,841,953	7,170,388	6,686,145	5,949,103	
Share capital and reserves       3,789,666       3,820,758       3,761,420       3,789,608         Retained profits       2,846,992       2,438,232       3,082,045       2,700,813         Kon-controlling interests       (131,289)       (116,013)       -       -       -	NET ASSETS	6,505,369	6,142,977	6,843,465	6,490,421	
Share capital and reserves       3,789,666       3,820,758       3,761,420       3,789,608         Retained profits       2,846,992       2,438,232       3,082,045       2,700,813         Kon-controlling interests       6,636,658       6,258,990       6,843,465       6,490,421         Non-controlling interests       (131,289)       (116,013)       -       -       -						
Retained profits         2,846,992         2,438,232         3,082,045         2,700,813           6,636,658         6,258,990         6,843,465         6,490,421           Non-controlling interests         (131,289)         (116,013)         -         -         -						
Kon-controlling interests         6,636,658 (131,289)         6,258,990 (16,013)         6,843,465 (490,421)	•					
Non-controlling interests (131,289) (116,013)	Retained profits					
				6,843,465	6,490,421	
Total equity 6,505,369 6,142,977 6,843,465 6,490,421				_		
	Total equity	6,505,369	6,142,977	6,843,465	6,490,421	

## CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

		Attrib	utable to own	ers of the Co	ompany			
	Share capital	Hedging and other reserves	Currency translation reserve	Sinking fund reserve	Retained profits	Total	Non- controlling interests	Total equity
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
2024 Beginning of financial	3,280,387	33,615	(2,465)	E00 221	2,438,232	4 259 000	(114.012)	4 1 12 0 7 7
<b>year</b> Profit/(loss) for the	3,200,367	33,613	(2,465)	509,221			(116,013)	
year Other comprehensive	_	_	-	-	430,932	430,932	(12,647)	418,285
loss		(33,697)	(169)	_	_	(33,866)	(2,629)	(36,495)
Total comprehensive (loss)/income		(33,697)	(169)	_	430,932	397,066	(15,276)	381,790
Transactions with equity holder recognised directly in equity – Dividend								
paid Sinking fund	_	-	-	-	(19,398)	(19,398)	-	(19,398)
contribution		_	_	2,774	(2,774)	_	_	
Total movements in equity		_	_	2,774	(22,172)	(19,398)		(19,398)
End of financial year	3,280,387	(82)	(2,634)	511,995	2,846,992	6,636,658	(131,289)	6,505,369
2023 Beginning of financial		40.005	4.547	500.077	0.407.447		(0 ( 4 44)	
<b>year</b> Profit/(loss) for the	3,280,387	18,295	4,517	508,377	2,406,446	6,218,022	(96,141)	6,121,881
year Other comprehensive	_	_	-	-	32,630	32,630	(23,374)	9,256
income		15,320	(6,982)	-	_	8,338	3,502	11,840
Total comprehensive income		15,320	(6,982)	_	32,630	40,968	(19,872)	21,096
Sinking fund				0.4.4	(0.4.4)			
contribution  Total movements in		_		844	(844)		_	
equity		_		844	(844)	_	_	
End of financial year	3,280,387	33,615	(2,465)	509,221	2,438,232	6,258,990	(116,013)	6,142,977

## CONSOLIDATED STATEMENT OF CASH FLOWS

	2024	2023
	\$'000	\$'000
Cash flows from operating activities	440.005	0.057
Profit after tax	418,285	9,256
Adjustments for:		
- Income tax expense	132,645	19,419
- Depreciation and amortisation	708,556	704,058
- Government grant	(43,637)	(46,605)
<ul> <li>Net loss on disposal of property, plant and equipment</li> </ul>	12,261	393
- Gain on disposal of an associated company	_	(46,249)
<ul> <li>Impairment/(write-back of impairment) of trade and other receivables</li> </ul>	165	(217)
<ul> <li>Share of results of associated companies and joint ventures</li> </ul>	(32,969)	43,148
<ul> <li>Unrealised currency translation differences</li> </ul>	3,947	(11,925)
<ul> <li>(Gain)/loss on financial assets held at fair value</li> </ul>	(13,565)	12,399
<ul> <li>- (Gain)/loss on fair value of derivative instrument</li> </ul>	(227)	227
- Amortisation of deferred revenue	(6,889)	(3,981)
- Finance expenses	71,469	72,361
- Interest income	(78,268)	(33,894)
- Dividend income		(553)
	1,171,773	717,837
Changes in working capital		
- Inventories	(8)	1,675
- Trade and other receivables	(50,779)	(79,889)
- Other assets	(38,888)	(47,340)
- Trade and other payables	180,022	96,654
Cash provided by operations	1,262,120	688,937
Interest received	65,209	17,421
Government grants received	41,378	124,423
Income tax refund/(paid)	84	(8,525)
Net cash provided by operating activities	1,368,791	822,256

## CONSOLIDATED STATEMENT OF CASH FLOWS

	2024	2023
	\$'000	\$'000
Cash flows from investing activities	(000 704)	(4.054.477)
Additions to property, plant and equipment and capital work-in-progress	(809,731)	(1,054,476)
Additions to investment property and investment property under development	(1,196)	(16,916)
Additions to intangible assets	(611)	(3,164)
Proceeds from disposal of property, plant and equipment and intangible assets	60	163
Proceeds from disposal of an associated company	-	10,001
Investment in associated companies and joint ventures	-	(386)
Dividends received	1,441	3,965
Placement in treasury bills	(587,068)	(30,887)
Proceeds from maturity of treasury bills	274,997	-
Purchase of financial assets at amortised cost	(35,581)	(50,000)
Purchase of financial assets at fair value through profit or loss	(55,211)	(7,966)
Redemption of financial assets at fair value through profit or loss	87,500	97,702
Net cash used in investing activities	(1,125,400)	(1,051,964)
Cash flow from financing activities		
Proceeds from loans and borrowings, net of transactions costs	5,019	-
Repayment of loans and borrowings	(53,000)	(45,000)
Interest paid	(84,946)	(82,691)
Payment of lease principal	(36,295)	(37,868)
Release of restricted bank deposits	-	960
Dividends paid	(19,398)	-
Government grants received	464,687	639,650
Net cash provided by financing activities	276,067	475,051
Not increase in each and each equivalents	510 <i>1</i> F O	245 242
Net increase in cash and cash equivalents	519,458	245,343
Cash and cash equivalents at beginning of financial year	1,594,954	1,349,895
Effects of currency translation on cash and cash equivalents	127	(284)
Cash and cash equivalents at end of financial year	2,114,539	1,594,954

## LISTING OF SIGNIFICANT COMPANIES IN THE GROUP

		Country of business/		
Name of companies	Principal activities	incorporation	Equity 2024	holding 2023
			%	%
Significant subsidiaries				
Held by the Company:				
Changi Airports International Pte. Ltd. (a)	Investment holding and provision of consultancy services in the field of civil aviation	Singapore	100	100
Changi Travel Services Pte. Ltd. (a)	Sale of travel and tour-related products and packages	Singapore	100	100
Jewel Changi Airport Holdings Pte. Ltd. (a)	Investment holding	Singapore	100	100
E-Concierge Pte Ltd <sup>(a)</sup>	E-commerce distribution	Singapore	100	100
Held by the Group:				
Changi Airport Consultants Pte. Ltd. (a)	Provision of airport-related consultancy services	Singapore	100	100
Changi Airport Planners and Engineers Pte. Ltd. <sup>(a)</sup>	Provision of professional engineering services in the field of civil aviation	Singapore	100	100
Changi Airport Philippines (I) Pte. Ltd. (a)	Investment holding	Singapore	100	100
Rio de Janeiro Aeroporto S.A (b)	Investment holding	Brazil	100	100
Jewel Changi Airport Devt Pte Ltd (a)	Provision of development, project, and real estate management services	Singapore	51	51
Jewel Changi Airport Hotel Pte Ltd (a)	Hotel and F&B operations	Singapore	51	51
Jewel Changi Airport Trust <sup>(a)</sup>	Operation and management of mixed-use development	Singapore	51	51
Jewel Changi Airport Trustee Pte Ltd (a)	Provision of trustee-management services	Singapore	51	51
CTS Southeast Asia Pte. Ltd. (a)	Investment holding	Singapore	100	100
Changi Travel International Pte. Ltd. <sup>(a)</sup>	Provision of management services and representing airlines as general sales agent	Singapore	100	100

## LISTING OF SIGNIFICANT COMPANIES IN THE GROUP

		Country of business/				
Name of companies	Principal activities	incorporation	2024	holding 2023		
			2024 %	2023 %		
Significant associated companies and joint ventures						
Held by the Company:						
Experia Events Pte Ltd <sup>(a)</sup>	Organising and management of conferences, exhibitions and other related activities	Singapore	20	20		
Held by the Group:						
Concessionária Aeroporto Rio de Janeiro S.A <sup>(b)</sup>	Airport concessionaire	Brazil	51	51		
Bengal Aerotropolis Projects Ltd (c)	Development of airport and township projects	India	30.2	30.2		
Sino-Singapore Chongqing Airport Commercial Management Co., Ltd. (b)	Provision of retail mall management services	People's Republic of China	49	49		

<sup>(</sup>a) Audited by PricewaterhouseCoopers LLP, Singapore.

<sup>(</sup>b) Audited by Pricewaterhouse Coopers firms outside of Singapore.

<sup>(</sup>c) Audited by other firms

## ANNEX: GHG EMISSIONS QUANTIFICATION METHODOLOGY

This section explains the calculation boundaries, methodologies and assumptions used in the preparation of CAG's Scope 1, 2 and 3 emissions. The carbon footprint is prepared in accordance with ISO 14064-1:2018, Greenhouse Gas (GHG) Protocol and the Airport Carbon Accreditation (ACA) guidelines.

#### Reporting scope and period

CAG uses an adaptation of the Operational Control Approach, where the company accounts for 100% of the GHG emissions from operations over which it has control. Following requirements for Level 3 "Optimisation" Airport Carbon Accreditation, this carbon footprint takes into account the sources and activities controlled by CAG, namely, Scope 1 and Scope 2 GHG emissions, as well as sources that CAG can guide or influence through effective partnership (Scope 3 GHG emissions). CAG focuses on calculating carbon dioxide (CO<sub>2</sub>) emissions for all three scopes.

Data for GHG emission calculations includes Terminals 1 to 4, as well as emissions under CAG's direct operational control (Scope 2) in Jewel Changi Airport Trustee Pte Ltd (JCAT). Electricity onsold to JCAT as a private developer is included in CAG's Scope 3 emissions.

CAG's energy and emissions data is externally verified on an annual basis. In this report, CAG's energy and emissions data for FY23/24 have been disclosed with verified FY19/20, FY20/21, FY21/22 and FY22/23 data for comparability.

#### Calculation methodologies

Our methodologies are consistent with the ACI Guidance Manual on Airport Greenhouse Gas Emissions Management and the GHG Protocol. Emissions are divided according to ownership and control of the source.

#### Scope 1

**Scope 1** emissions are direct GHG emissions which occur from sources owned or controlled by CAG. This includes emissions from both stationary sources (power generators, electrical switchgears and other stationary equipment) and mobile sources (company-owned vehicles and heavy-duty equipment). Activities and process emissions from firefighting exercises are also included.

The quantity of Scope 1 GHG emissions is calculated by multiplying activity data by their respective emission factors. Activity data was obtained from procurement invoices and operational records.

#### Scope 2

**Scope 2** emissions are indirect GHG emissions which occur from the generation of purchased electricity consumed by CAG.

The quantity of Scope 2 GHG emissions is calculated by multiplying electricity usage (in kWh) by the national grid emission factor. Data for electricity usage was obtained from receipts issued by the electricity supplier. The grid emission factor used is released by the Energy Market Authority (EMA) in accordance with the United Nations Framework Convention on Climate Change (UNFCC) guidelines.

#### Scope 3

**Scope 3** emissions are other indirect GHG emissions that are a consequence of CAG's activities but occur at sources not owned or controlled by CAG. Due to the variety of Scope 3 GHG emission sources within scope, a range of methodologies has been used.

For emissions resulting from activities involving aircraft (landing and takeoff cycle, engine test-run and aircraft auxiliary power unit), the Airports Council International (ACI), Airport Carbon and Emissions Reporting Tool is used. For emissions resulting from ground activities that are carried out by our partners (ground support equipment, surface access, electricity resold, waste management), a similar calculation approach used for quantifying Scope 1 and Scope 2 emissions is used. Emissions from the shuttle bus operations are calculated with the use of the GHG Emissions Calculation Tool. Finally, for business travel, the International Civil Aviation Organization Carbon Emissions Calculator is used. For every calculation tool/model used, CAG has applied suitable assumptions to the input data. Refer to the table below for the respective emission factors used.

#### **References for emission factors**

- 1. Airports Council International (ACI), Airport Carbon and Emissions Reporting Tool (ACERT) version 6.0
- 2. Energy Market Authority of Singapore (EMA) (2022), Singapore Energy Statistics
- 3. United States Environmental Protection Agency (US EPA) (June 2024), Emission Factors for Greenhouse Gas Inventories
- 4. UK Department for Energy Security and Net Zero Greenhouse Gas Reporting Conversion Factors 2023

	Emission Factors	Unit
Scope 1 Emissions		
Stationary Sources		
Diesel stationary	2.6594	kgCO <sub>2</sub> e/litre
Jet A-1 stationary	2.5427	kgCO <sub>2</sub> e/litre
Motor gasoline stationary	2.3450	kgCO <sub>2</sub> e/litre
Sulfur hexafluoride (SF $_{\delta}$ )	23,500	kgCO <sub>2</sub> e/litre
Mobile Sources		
Diesel mobile	2.6594	kgCO <sub>2</sub> e/litre
Gasoline mobile	2.3450	kgCO <sub>2</sub> e/litre
Scope 2 Emissions		
<b>Electricity Consumption</b>		
2022 National Grid Emission Factor	0.4168	kgCO <sub>2</sub> e/kWh
2020 National Grid Emission Factor	0.4085	kgCO <sub>2</sub> e/kWh
2018 National Grid Emission Factor	0.4192	kgCO <sub>2</sub> e/kWh
Scope 3 Emissions		
Ground Support Equipment		
Diesel mobile	2.6594	kgCO <sub>2</sub> e/litre
Gasoline mobile	2.3450	kgCO <sub>2</sub> e/litre
Surface Access		
Coach	0.0441	kgCO <sub>2</sub> e/vehicle-km
Minibus/van	0.2517	kgCO <sub>2</sub> e/vehicle-km
Motorcycle	0.2336	kgCO <sub>2</sub> e/vehicle-km
Private charter	0.1901	kgCO <sub>2</sub> e/vehicle-km
Private hire care	0.1901	kgCO <sub>2</sub> e/vehicle-km
Private hire shared ride	0.1901	kgCO <sub>2</sub> e/vehicle-km
Privately owned car	0.1901	kgCO <sub>2</sub> e/vehicle-km
Taxi (Grab taxi)	0.1901	kgCO <sub>2</sub> e/vehicle-km
Taxi (Phone booking)	0.1901	kgCO <sub>2</sub> e/vehicle-km
Taxi (Street hail)	0.1901	kgCO <sub>2</sub> e/vehicle-km
Mass Rapid Transit (MRT)	0.0578	kgCO <sub>2</sub> e/passenger-km
Public bus	0.0441	kgCO <sub>2</sub> e/passenger-km
Electricity Re-sold		
2022 National Grid Emission Factor	0.4168	kgCO <sub>2</sub> e/kWh
2020 National Grid Emission Factor	0.4085	kgCO <sub>2</sub> e/kWh
2018 National Grid Emission Factor	0.4192	kgCO <sub>2</sub> e/kWh
Waste Management		
0% load	0.6583	kgCO <sub>2</sub> e/kWh
50% load	0.7831	kgCO <sub>2</sub> e/kWh
100% load	0.9078	kgCO <sub>2</sub> e/kWh
Airport Shuttle Bus	0.0441	kgCO <sub>2</sub> e/passenger-km

## ANNEX: SOCIAL INDICATORS

#### **Community Investment**

Current Community Investment Targets	
Goal	
Achieve 25% staff volunteerism by FY25/26	26.8%
Achieve 3,000 volunteer hours yearly by FY25/26	3,767
Engage 35 Airport Partners to join our Changi Foundation programme by FY25/26	13
Offer a minimum of 80 annual job attachments to youth beneficiaries from FY25/26 onwards	36

#### **Fair Employment Practices**

Employee Numbers				
Total Employees		Age Group		Total
	< 30	30 - 50	> 50	
Male	240	852	227	1,319
Female	145	535	106	786

<b>Total Employees</b>	Employme	Total	
	Permanent	Temporary	
Male	1,319	0	1,319
Female	786	0	786

Total Employees	Employment Type		Total
	Full-time	Part-time	
Male	1,318	1	1,319
Female	785	1	786

### ANNEX: SOCIAL INDICATORS

#### Fair Employment Practices (cont'd)

Employee Numbers				
New Hires	Age Group			Total
	< 30	30 - 50	> 50	
Male	77	72	2	151
Female	65	43	1	109

Employee Turnover	Age Group			Total
(Voluntary only)	< 30	30 - 50	> 50	
Male	24	42	1	67
Female	11	16	2	29

#### **Collective Bargaining Agreements**

Percentage of total employees covered by collective bargaining agreements	55.5%
Percentage of CAG's employees that are part of SMMWU	30.8%

#### **People Development**

Total number of training events	170
Percentage of employees attending at least one training event	94%

Category of learning and development programmes <sup>1</sup>	Percentage of total programmes
Experiential	6%
Social	15%
Formal learning	79%

- 1 CAG categorises learning and development programmes into three categories Experiential, Social and Formal Learning.
  - Experiential Learning provides hands-on experiences to better connect real-world situations. Examples include i-Friday Experiential Tour: Journey to the East and Airport Emergency Trainings.
  - Social Learning aims to provide learning through behavioural observations, through brownbag talks.
  - Formal Learning refers to focused and structured learning programs identified and defined by the organisation.

#### **People Development (cont'd)**

Training Hours: Breakdown <sup>2</sup>	
	Average Training Hours
Male	7.6
Female	5.8
	Average Training Hours
Support Staff	6.6
Professional Staff	7.1

2 Higher average training hours among male employees is due to the inclusion of mandatory annual AES training, as AES is predominantly comprised of younger males owing to the nature and demands of the job. As majority of the Support Staff are from AES, and with full resumption of operations - the clocked training hours in FY23/24 were lower than FY22/23.

Performance and Career Development Reviews: Breakdown			
Employees Receiving Performance and Career Development Reviews			
	Support Staff	Professional Staff	
Male	373	946	
Female	85	701	



### CORPORATE INFORMATION

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