



永續華航
SUSTAINABILITY WE CARE



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Preface

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About the Report

China Airlines (hereinafter referred to as "CAL") issues the corporate sustainability report and discloses related information on its CSR website on a regular basis to maintain good and smooth communication with all stakeholders. CAL introduces the "Sustainability Logo" in 2019 to reaffirm its commitment to sustainable development. The Sustainability logo in the corporate logo features a plum blossom. Two red petals in the middle connect to form an infinity symbol signifying "sustainable", and three blue petals represent "economic", "environment", and "social", the three main aspects of "Sustainability We Care".



Cover Story

The new visual element "Journey Curve" indicates that CAL strives to offer passengers a journey full of pleasant amazement and take them home safe and sound (Show You the World, Take You Home). The Journey Curve connects to the Sustainability Logo and drives the five sustainable values of CAL, namely "trust", "human resources", "cooperation", "environment", and "society" to enhance the stakeholders' perception of the values.

Reporting Principles & Standard Disclosures (GRI 102-54)

The Report is prepared in accordance with the GRI standards Core Option published by the Global Sustainability Standards Board and the United Nations (UN) Global Compact. [The Report and the GRI](#) and [UN Global Compact content index](#) are described in the appendix.

Report Period & Boundary (GRI 102-45, 102-50)

• Report Period

The Report discloses CAL's information from January 1, 2018 to December 31, 2018; some material information up to April 30, 2019 is also reported.

• Report Boundary

The Report discloses all information on CAL. Considering commercial correlation between CAL and its subsidiaries and the financial materiality_(Note), Mandarin Airlines and Tigerair Taiwan are also disclosed in some index in the Report.

Note: China Airlines, Mandarin Airlines, and Tigerair Taiwan account for 96%% of the consolidated revenue.

Guarantee of Truthful Reporting (GRI 102-56)

• Internal Audit

All data and information disclosed in the Report are provided by the responsible departments of CAL, proofread and examined by the Executive Secretary (Corporate Development Office), Corporate

Sustainability Committee, submitted to the Chairman for review and approval, and then reported to the Board of Directors according to CAL Corporate Social Responsibility and Sustainable Development Best Practice Principles.

• External Assurance

The Report has been verified by KPMG Taiwan in accordance with the GRI standards and the limited assurance of ISAE 3000. The truthfulness of the Report is guaranteed. Please refer to the appendix for the [Independent Limited Assurance Report](#).

• Data Quality Management

Financial data in the Report and data relating to ISO quality, information safety, environmental and energy management, and greenhouse gas emissions have been certified or verified by independent third parties.

Financial Data	Deloitte
Quality Management ISO 9001	DNV GL
Information Safety Management ISO 27001	DNV GL
Environmental Management ISO 14001	DNV GL
Energy Management ISO 50001	DNV GL
Greenhouse Gas Emission ISO 14064-1	DNV GL

Publication History (GRI 102-51, 102-52)

The Report is published in both Chinese and English every year and available on the CAL's CSR website. The dates of release are as follows:

First edition release date	August 2014
Previous edition release date	June 2018
Current edition release date	June 2019
Next edition release date	June 2020

Feedback (GRI 102-1, 102-53)

If you have any suggestions or questions about the Report, please contact:

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CSR Website

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Letter from Management (GRI 102-14)



Chairman and President
Su-chien Hsieh

In the face of the global economic turmoil, including the financial crisis in Asia, SARS, and the 911 attack, CAL has demonstrated the proactive and fearless spirit. Moving toward the 60th year of operation, CAL will continue to create milestones and fulfill its commitment to sustainability. CAL offers heartfelt thanks to those who have persistently provided support and care that allow CAL to face the challenges and risks while pursuing the sustainable growth more steadily.

Looking back at 2018, the global economy recovered steadily, but many challenges remained in the business environment, including the increasing tension of the China-US trade war, volatility in global financial markets, rises in global oil prices, climate anomalies, reduced revenue due to market competition, clouded cross-strait relations, limited capacity of Taiwan Taoyuan International Airport, and increasing awareness of labor rights. Facing these challenges, CAL continued to strengthen the operation of 4 pillars (passenger transport, freight transport, maintenance, and e-commerce), optimize the passenger / cargo service network, and develop the customer base with the group resources; in addition, A350 long-range airliners were all in place to improve the overall quality and profitability of CAL.

Facing the increasing awareness of corporate social responsibility, CAL incorporates sustainability into its corporate culture and value by adopting the sustainable development strategies covering safety, governance, fleet and network, product and service, group business, and brand awareness. To show its resolution to fulfill sustainability as a global citizen and a corporate citizen in Taiwan, CAL echoes with 9 of the UN's Sustainable Development Goals (SDGs) and sets the short-term, medium-term, and long-term sustainable development goals of the six task forces, namely Trust, Human Resources, Cooperation, Environment, Society, and Corporate Governance according to the SDGs Compass.

Compliance and integrity are the cornerstones of CAL's sustainable development. The Company is active in overseeing and managing the operation of the Board of Directors. In 2018, three female directors were recruited to enhance the diversification and decision-making quality of the Board of Directors; in addition, CAL ranked in the top 5% of TWSE / TPEX listed companies in the fifth Corporate Governance Evaluation.

Providing the best flight quality is what CAL strives and stands for. In 2018, CAL organized the first flight safety education fair to demonstrate its determination to fulfill flight safety; in addition, CAL was selected as one of the IATA Nominating Committee on behalf of Taiwan's aviation industry, showing that its contribution to the aviation industry was widely recognized. With professional service and outstanding flight quality, CAL was also selected as the presidential aircraft. To improve customer experience, CAL renovated and reopened the VIP lounge at Terminal 2 in 2018. Featuring oriental aesthetics, the VIP lounge is expected to promote the international visibility of Chinese culture.

The Company has taken specific action to fulfill environmental sustainability for many years. In 2018, CAL reduced carbon of 144,000 tons of CO₂e. The electricity consumption and carbon emissions in the offices in Taiwan have been reduced gradually for 9 consecutive years; in addition, the Crew Training Building was awarded the Green Building Label; passengers were invited to participate in the carbon offsetting program – ECO Travel to achieve net zero emission. CAL also organized the first seminar on sustainable aviation fuels (ASF), where experts from the industry, government, and academia cooperated to discuss the countermeasure for ASF. As the aviation industry plays an important role in climate change, the Company became the first in Taiwan's aviation industry to sign the Task Force on Climate-related Financial Disclosures (TCFD) in 2018.

The nearly 60 years of operation are built on the contribution of all employees. Therefore, it is the Company's responsibility to offer a quality work environment with sound employee benefits. CAL has been awarded the Top 20 Youngsters' Favorite Brands by Cheers magazine for 3 consecutive years and ranked the

6th in 2018; in addition, CAL was selected in Taiwan High Compensation 100 Index for the second time. This year, we continued to participate in charitable activities based on the spirit of contributing to society, including disaster relief, care for the economically disadvantaged students and the elderly, and sponsorship for Taiwanese athletes, and once again won Taiwan Corporate Sustainability Awards (TCSA) - Social Inclusion Award, which reinforced our confidence and resolution to promote social prosperity.

Having implemented corporate sustainable responsibility for more than 5 years, CAL has achieved outstanding results, such as being selected in TCSA 5 times, in FTSE4Good TIP Taiwan ESG Index for the first time, and in Dow Jones Sustainability Index (DJSI) and FTSE4Good thrice, and being rated A-/Leadership by the Carbon Disclosure Project (CDP) twice. These milestones indicate the recognition of CAL's efforts, and more importantly, firm up our belief that promoting sustainability is the right way to create our own value and the value of our stakeholders.

Looking ahead, CAL will continue to fulfill its commitment to all stakeholders by believing that we can always do better and creating more wonderful moments through flying. Upholding the belief and expectations of stakeholders and the corporate heritage, CAL will continue to enhance Chinese culture around the world and achieve the sustainable development with its partners and stakeholders, ultimately becoming the preferred airlines in Taiwan.



2018 Key Performance and External Affirmation



3rd Time selected for DJSI Emerging Markets

The only Taiwanese airline selected for DJSI Emerging Markets for three consecutive years and ranked in 3rd place among the world's airlines.



3rd Time selected for FTSE4Good Emerging Index

Selected for the FTSE4Good Emerging Index for three consecutive years.



1st Year selected for FTSE4Good TIP Taiwan ESG Index

Selected for FTSE4Good TIP Taiwan ESG Index for the first year.



Top 5% of TWSE / TPEx listed companies

Ranked in the top 5% of TESE / TPEx listed companies in the fifth Corporate Governance Evaluation.

ECONOMIC



The Only Taiwanese Airline in IATA Nominating Committee

The only Taiwanese airline in the International Aviation Transport Association (IATA)'s Nominating Committee.



8th Time certified by IATA Operational Safety Audit (IOSA)

Passing IOSA certification for an eighth consecutive time.



Selected as Presidential Aircraft

Selected as presidential aircraft for the several times.



2nd Time selected for Taiwan EMP 99 Index and Taiwan HC100 Index

Selected in the Taiwan Employment Creation 99 Index and the Taiwan High Compensation 100 Index for two consecutive years.

SOCIAL

ENVIRONMENTAL



3rd Time selected in DJSI and got highest score in Environmental Reporting and Climate Strategy

Three consecutive times selected in DJSI emerging markets index and got highest score in Environmental Reporting and Climate Strategy of DJSI in 2018.



2nd Time A- / Leadership CDP

Ranked A- in 2016 and 2018 CDP, the global transportation industry benchmark and the best in the global aviation industry in 2018.



5th Time TCSA Climate Leadership Award

Awarded TCSA Climate Leadership Award for five consecutive years since 2014.



2nd Diamond-Level green building

Crew Training Building certified as a diamond-level green building in 2018.



1st Taiwanese Airline to organize seminar on sustainable aviation fuels

CAL organized the first seminar on sustainable aviation fuels to share experiences in using aviation fuel in the delivery of A350.



One and Only Taiwanese airline to recognize TCFD for public support

One and only airline in Taiwan to support the Task Force on Climate-related Financial Disclosures (TCFD).



Voluntary carbon offset program

CAL initiated ECO Travel, a carbon offset program, in 2018 to help customers achieve the idea of zero carbon travel.



99.20% participation

99.20% of employees participating in labor unions.



35.9 Million

Invested TWD 35,904,946 in charity activities throughout 2018.



Over 2,700 students

CAL's Love All Around team visited 12 cities / counties in Taiwan and helped more than 2,700 students.



40,000 students

Textbook programs sponsored for 90 schools throughout Taiwan to help approximately 40,000 students.



2nd Time Social Inclusion Award

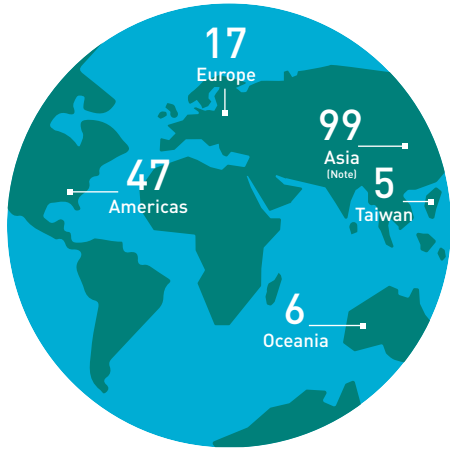
Granted the Social Inclusion Award in 2018 TCSA (Taiwan Corporate Sustainability Awards).



0-3

About China Airlines

Number of Destinations



Note: Excluding Taiwan

Destinations (including the CAL Group and code-shared routes)

Country	29	Destination	174
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Passenger (including the CAL Group)

China	81.4%	Oceania	65.7%
Hong Kong	77.5%	Americas	82.2%
Northeast Asia	83.7%	Europe	82.5%
Southeast Asia	79.3%		

0-3-1 Business Overview (GRI 102-2, 102-3, 102-4, 102-6, 102-7)

China Airlines (2610) is the largest airline in Taiwan. Based in Taiwan Taoyuan International Airport, CAL mainly provides international passenger and freight air transport services. CAL also has two subsidiary airlines: Mandarin Airlines and Tigerair Taiwan. Mandarin Airlines serves domestic and regional markets, while Tigerair Taiwan offers a low-cost business model. With a multi-brand strategy, members of the CAL Group share resources and complement one another's strengths and weaknesses to provide a variety of options for our customers based on an established network. Through codeshare agreements with other airlines, the CAL Group offered flights to / from 29 countries and 174 destinations worldwide as of the end of December 2018.



China Airlines



Mandarin Airlines

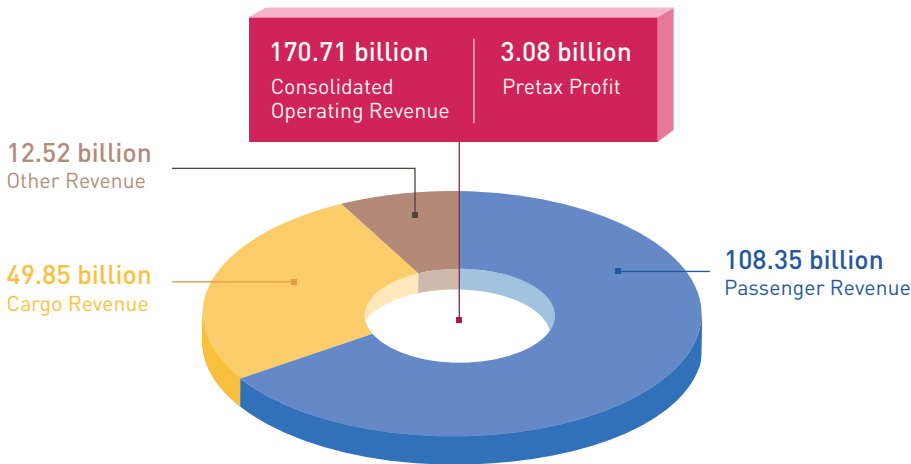


Tigerair Taiwan

Capital (Unit: TWD billion)	54.2	2	2
Employees	12,409	1,007	641
Fleet Size	94	11	11
Headquarters	Taoyuan (No.1, Hangzhan S. Rd., Dayuan Dist., Taoyuan City)	Taipei (No.3, Alley 123, Ln. 405, Dunhua N. Rd., Songshan Dist., Taipei City)	Taipei (No.3, Alley 123, Ln. 405, Dunhua N. Rd., Songshan Dist., Taipei City)

CAL Group's Operational Achievements (GRI 201-1)

CAL's management and employees continuously apply themselves to strengthening its operating structure through a variety of improvement strategies and integration of Group business. Despite rising global oil prices in 2018, joint efforts in passenger and freight transport on the part of CAL, Mandarin Airlines, and Tigerair Taiwan allowed consolidated operating revenue to hit a nearly four-year high at TWD 170.71 billion. This comprised TWD 108.35 billion from passenger transport, TWD 49.85 billion from freight transport, and TWD 12.52 billion from other segments. Consolidated net profit before tax was TWD 3.08 billion. CAL has thus shown a positive pre-tax profit for four consecutive years.



Consolidated Financial Statement

(Unit: TWD billion)

Item	2015	2016	2017	2018
Passenger Revenue	94.96	95.28	102.22	108.35
Cargo Revenue	40.29	35.72	43.33	49.85
Other Revenue	9.80	10.08	10.57	12.52
Consolidated operating Revenue	145.06	141.08	156.12	170.71
Pretax Profit	7.13	1.88	3.52	3.08

Individual Financial Statement

(Unit: TWD billion)

Item	2015	2016	2017	2018
Operating Revenue	133.44	127.52	139.82	150.26
Operating Cost	115.82	112.25	121.85	137.62
Operating Expense	9.74	10.80	10.61	10.80
Income Tax Expense (Interest)	1.07	0.97	0.88	0.53
Salary Expenses	14.19	14.18	15.18	15.01
An Analysis of Employee Benefits Expense by Function	19.12	19.72	21.22	21.55
Post-employment Benefits	0.72	1.05	1.24	1.69

2018 Performance of International Passenger and Freight Transport

Airlines	Flights	Passenger Transport		Freight Transport	
		Passengers	Market Share	Tonnage [Metric Ton]	Market Share
China Airlines	78,409	13,760,385	24.2%	932,120	38.6%
Mandarin Airlines	10,664	1,326,234	2.3%	17,029	0.7%
Tigerair Taiwan	17,727	2,565,819	4.5%	1,161	0.1%
Total	106,800	17,652,438	31.1%	950,309	39.4%

Source: Civil Air Transportation Statistics, "Table 16: Market Share of International and Cross-Strait Passenger and Freight Transport of National Airlines." Civil Aeronautics Administration, M.O.T.C.

0-3-2 Business Environment in the Aviation Industry

International dealings between passengers and freight rely heavily on air transport; therefore, air transport is a derivative need, and its volume is greatly affected by the social and economic environment. According to statistics released by the International Air Transport Association (IATA), civil aviation transport operators carried 4.3 billion passengers and 63.7 million tons of freight in 2018. This in turn created an output of USD 854 billion and 70 million job opportunities, and contributed 1.0% of the global GDP. This shows that air transport promotes the development of society and the economy, and vice versa. CAL has routinely adjusted its Sustainability Strategy by reviewing the business environment of the aviation industry, as well as undertaking stakeholder engagement and materiality analysis to strengthen its long-term development.

Business Opportunities

- **Growth of Global Air Transport Remains Optimistic, with Asia Pacific Region Higher than Average**

According to IATA statistics, revenue passenger kilometers (RPK) increased by 6.8% and freight tonne kilometers (FTK) grew by 4.5% in 2018. Due to economic growth in emerging markets and the rise of the middle class, passenger and freight air transport in the Asia Pacific region maintained growth rates of 8.5% and 2.3%, respectively, with the air passenger market growing at a faster pace than other regions worldwide. Looking to 2019, and regardless of tensions arising from the China-US trade war, global air transport will continue growing at a slow pace thanks to expansionary fiscal policies and easing monetary policies. The international air passenger and freight markets are expected to grow by 6.0% and 3.7%, respectively, reflecting slowdowns of 0.5 percentage points and 0.4 percentage points from prior year growth. Meanwhile, the passenger market in the Asia Pacific region will increase by 7.5%, driving the growth of global air transport.

- **Market Liberalization Sweeps Asia-Pacific Countries**

Air rights are critical to an airline's network and destinations, as well as to aviation markets. Except for restrictions on cross-strait destinations, Taiwan has entered into open-skies agreements with the United States, Australia, Singapore, Malaysia, and Thailand. Existing airlines have offered additional flights, and new airlines have been granted air rights to provide consumers more options. In addition, ASEAN has actively entered into the ASEAN Multilateral Agreement on Air Service to create a single aviation market,

which significantly reduces restrictions on civil aviation transport operators in ASEAN and promotes the growth of aviation markets in the Asia-Pacific region.

- **Policy Supports Travel Demand in Taiwan**

Facing regional economic integration and adjustments of strategies for foreign trade, Taiwan's government has implemented the New Southbound Policy since 2016. This has focused on economic and trade cooperation, talent exchange, resource sharing, and regional connectivity to strengthen strategic partnerships with 10 countries in ASEAN as well as six countries in South Asia, Australia and New Zealand, thereby improving trade and tourism in Taiwan. According to statistics released by the Tourism Bureau of the Ministry of Transportation and Communications, the number of foreigners visiting Taiwan increased by 3% in 2018; in particular, the number of visitors from "southbound" countries increased by 14%, significantly higher than the overall number of foreigners visiting Taiwan. This shows that the implementation of the New Southbound Policy helped drive the development of the civil aviation industry.

- **E-commerce Gradually Transforming the Air Cargo Market**

In the 2000s, Internet technology gradually matured. The e-commerce models have advanced from portals and search engines to B2B, B2C, and C2C. With the popularity of Internet access, consumers start to shop via virtual channels, leading to the replacement of physical channels by fast-growing e-commerce.

Business Risks

- **Global Trade Tensions Caused by Protectionism**

After World War II ended in 1945, the post-war new order was set by liberalization, privatization, and marketization. This further led to neo-liberalism and globalization in the trade, finance, and air transport markets. Financial risks and economic inequality were the underlying causes of the Global Financial Crisis of 2008. Afterwards, protectionism rose as countries intended to protect their own benefits, including punitive tariffs in the China-US trade war and Brexit, which had an impact on the global supply chain. In the long run, protectionism could cause the shrinkage of international trade and transnational business and thus is a potential risk factor for the development of air passenger and freight transport.

- **Fluctuations in Oil Prices**

The price of oil is affected by the global political and economic situation. As one of the uncontrollable costs of airlines, the price of oil is one of the five major operating costs in parallel with depreciation and rental expenses, ground and depot fees, personnel expenses, and maintenance costs. According to IATA statistics, the average price of aviation fuel in 2018 was USD 87.6 per barrel, and the cost of aviation fuel accounted for 23.5% of costs; compared to 2016, these two respective items were 68% and 3.4 percentage points higher. This indicates that oil is extremely sensitive to airline operations. IATA anticipates oversupply in the overall crude oil market in 2019 due to shale oil extraction in the US, with the average annual price of USD 81.3 down 7.2% from the previous year. However, this price is still higher than in 2016. As OPEC countries are reducing production, uncertainties remain in the aviation industry.

- **Intense Competition and Emerging Airlines**

With a trend of market liberalization in the aviation industry, countries have gradually removed their control over civil aviation transport operators and have adopted an open-sky policy. According to statistics released by IATA and the Association of Asia Pacific Airlines (AAPA), the compound annual growth rate (CAGR) of available seat kilometers (ASK) increased by 6.3% worldwide

over the past five years and by 8.4% in the Asia-Pacific region. This was due to the continuous expansion of networks by existing airlines and the rise of emerging airlines. In addition, competition in the Asia-Pacific region was intense in terms of low-cost carriers (LCCs), while routes from / to the Asia-Pacific, North America, and Europe faced the emergence of airlines from the Middle East, China, and Southeast Asia. While this innovative business model created cost advantages and drove new demand, it also battled for the market share of the existing airlines.

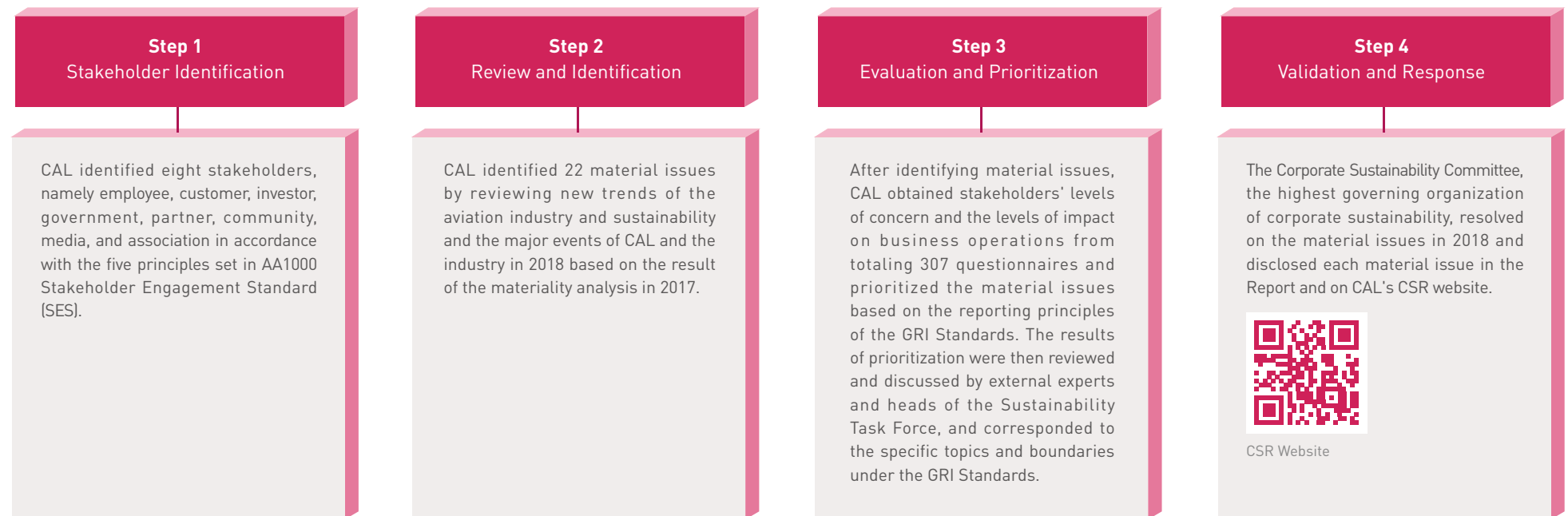
- **Congested Airport Capacity**

Infrastructure is important for the development of the air transport industry. If airport capacity cannot catch up with the development of the air transport industry, it will keep civil aviation transport operators from moving ahead and will aggravate flight delays. According to the definition given by Worldwide Slot Guidelines (WSG), a total of 204 airports worldwide, including 61 airports in the Asia-Pacific region, will be classified as Level 3 overcrowded airports by the summer of 2019. Taiwan Taoyuan International Airport and major airports in the Asia-Pacific region are included in the list, showing a lack of resources for air transport infrastructure in the Asia-Pacific region. Airport slots correlate with the expansion of networks and routes of airlines. Due to a long period of airport construction, the long-term development of air transport operators is seriously affected.

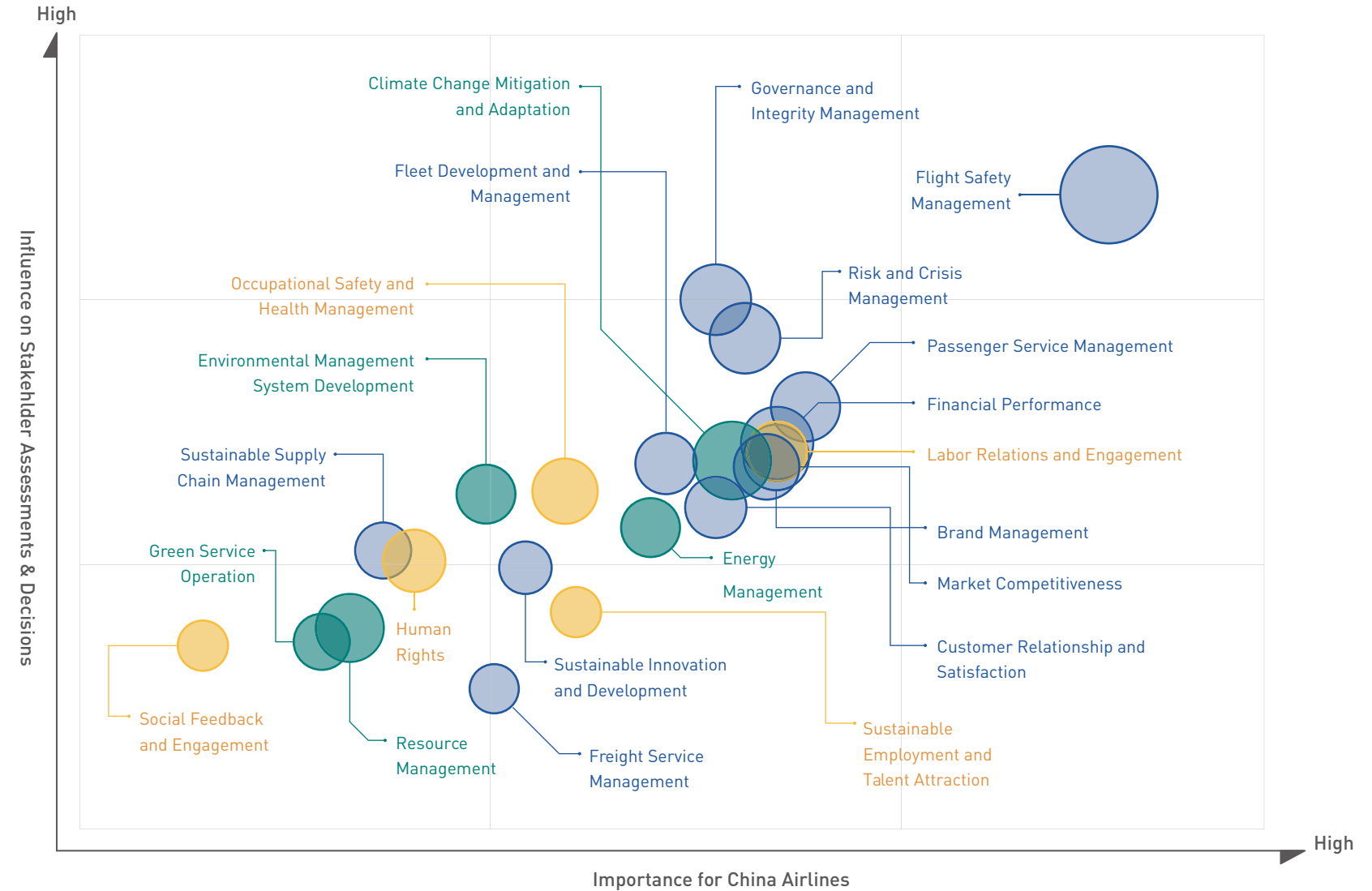
O-3-3 Materiality Analysis and Stakeholder Engagement

Materiality Analysis (GRI 102-46, 102-47, 103-1)

CAL identifies eight stakeholders in accordance with the five principles set in AA1000 Stakeholder Engagement Standard (SES) and sets the following procedures for materiality analysis based on the reporting principles of the GRI Standards (stakeholder inclusiveness, sustainability context, materiality and completeness) to identify material issues of stakeholders' primary concern. Different channels of communication are also established to respond to stakeholders' needs and expectations.



2018 China Airlines Materiality Matrix



Material Issues Corresponded to GRI Standards

Material Topic (Sorted by Level of Concern)	Corresponding to GRI Topic-specific Standards	Boundary						Corresponding Chapter / Section
		Internal <small>(Note)</small>			External			
		China Airlines	Mandarin Airlines	Tigerair Taiwan	Government	Customers	Partner	
◆ Flight Safety Management	-	●	●	●	○	○		2-1 Trust
◆ Governance and Integrity Management ◆ Passenger Service Management ◆ Financial Performance ◆ Market Competitiveness ◆ Customer Relationship and Satisfaction ◆ Sustainable Innovation and Development ◆ Freight Service Management	GRI 201 Economic Performance	●	●	●		○		0-3 About China Airlines
	GRI 205 Anti-corruption, GRI 206 Anti-competitive Behavior	●			●	○	▲	GRI Content Index 2-1-2 Passenger Service
	GRI 415 Public Policy	●			●			GRI Content Index
	GRI 418 Customer Privacy	●			●	●		2-1-2 Passenger Service
◆ Risk and Crisis Management ◆ Fleet Development and Management	GRI 102 General Disclosures: 1. Organizational Profile, 2. Strategy	●			○			0-1 About The Report 0-2 Letter from Management 3-2 Risk Management
◆ Brand Management	-	●			○	○	○	1-2-1 Vision and Strategy 2-5 Society
◆ Sustainable Supply Chain Management	GRI 204 Procurement Practices, GRI 308 Supplier Environmental Assessment, GRI 414 Supplier Social Assessment	●					▲	2-3 Cooperation

Material Topic (Sorted by Level of Concern)	Corresponding to GRI Topic-specific Standards	Boundary						Corresponding Chapter / Section
		Internal <small>(Note)</small>			External			
		China Airlines	Mandarin Airlines	Tigerair Taiwan	Government	Customers	Partner	
◆ Labor Relations and Engagement ◆ Occupational Safety and Health Management ◆ Human Rights ◆ Sustainable Employment and Talent Attraction ◆ Social Feedback and Engagement	GRI 202 Market Presence	●	●	●		●		2-2 Human Resources
	GRI 401 Employment, GRI 402 Labor / Management Relations	●	●	●	○	○		
	GRI 403 Occupational Health and Safety	●	●	●	○			
	GRI 404 Training and Education	●	●	●		○		
	GRI 405 Diversity and Equal Opportunity	●	●	●				
	GRI 406 Non-discrimination, GRI 408 Child Labor, GRI 409 Forced or Compulsory Labor	●	●	●	●			2-2 Human Resources GRI Content Index
	GRI 407 Freedom of Association and Collective Bargaining	●	●		○			2-3 Cooperation
	GRI 412 Human Rights Assessment	●						2-2 Human Resources
	-							2-5 Society
◆ Climate Change Mitigation and Adaptation ◆ Energy Management ◆ Environmental Management System Development ◆ Resource Management ◆ Green Service Operations	GRI 302 Energy	●				○		2-4 Environment
	GRI 303 Water	●			●	○		
	GRI 305 Emissions	●	●	●		○	▲	
	GRI 306 Effluents and Waste	●			●	○		
	GRI 307 Environmental Compliance	●			●		▲	GRI Content Index

● : Direct influence ○ : Indirect influence ▲ : Business influence

Note: The boundary of the Report mainly focuses on China Airlines. Only some related performance data of Mandarin Airlines and Tigerair Taiwan are disclosed.

Stakeholder Engagement (GRI 102-40, 102-42, 102-43, 102-44)

Stakeholder	Top 3 Issues (Sorted by Level of Concern)	Communication Channel	Communication Frequency	Key Communication	Communication Result	Corresponding Chapter
Employee	<ul style="list-style-type: none"> ◆ Flight Safety Management ◆ Labor Relations and Engagement ◆ Governance and Integrity Management 	<ol style="list-style-type: none"> 1. Labor-management meetings 2. Labor unions 3. Employee suggestion box 4. Employee feedback website 5. China Airlines newsletter 6. China Airlines Retirees 	<ol style="list-style-type: none"> 1. Monthly 2. On demand 3. On demand 4. On demand 5. On demand 6. On demand 	<ol style="list-style-type: none"> 1. Employment and retention of employees 2. Development, rights and interests, and health of employees and safe workplace 	The employee satisfaction survey is carried out once every two years. In 2018, the employee satisfaction rate was 6.4 (out of 10).	2-2 Human Resources
Customer	<ul style="list-style-type: none"> ◆ Flight Safety Management ◆ Passenger Service ◆ Management Brand Management 	<ol style="list-style-type: none"> 1. Customer satisfaction survey 2. Global business meetings 3. Taiwan business meetings 4. Discussions with travel agencies 5. CAL's website, CSR website, Facebook, e-mail, and SMS 6. Customer service hotline 7. Corporate customer visits 	<ol style="list-style-type: none"> 1. On demand 2. Once every year 3. Once every year 4. Once every quarter 5. On demand 6. On demand 7. As needed 	<ol style="list-style-type: none"> 1. Customer relationship management 2. Protection of customers' rights and interests: privacy, food safety, and in-flight drinking water quality 	<ol style="list-style-type: none"> 1. Passenger satisfaction rate: 87.2% 2. Freight satisfaction rate: 87.3% 3. Satisfaction rate of maintenance factories: 8.68 (out of 10) 	2-1 Trust
Investor	<ul style="list-style-type: none"> ◆ Flight Safety Management ◆ Financial Performance ◆ Risk and Crisis Management 	<ol style="list-style-type: none"> 1. Shareholders' meetings 2. Shareholders' hotline / mailbox 3. Road shows 4. Interviews 	<ol style="list-style-type: none"> 1. Yearly 2. On demand 3. Once every three years (once every year starting from 2018) 4. As needed 	<ol style="list-style-type: none"> 1. Operating results 2. Flight safety and passenger transport 3. Risk management model 	CAL continued to disclose operating results according to the law and needs of investors.	2-1 Trust 3-1 Corporate Governance
Government	<ul style="list-style-type: none"> ◆ Flight Safety Management ◆ Risk and Crisis Management ◆ Climate Change Mitigation and Adaptation 	<ol style="list-style-type: none"> 1. Missive 2. Visit 3. Participation in projects 4. Participation in public hearings, seminars, conferences, and negotiation forums 5. Participation in initiatives 6. Audit 	<ol style="list-style-type: none"> 1. As needed 2. As needed 3. As needed 4. As needed 5. As needed 6. As needed 	<ol style="list-style-type: none"> 1. Communication of laws and regulations 2. Sharing of important industry information 	<ol style="list-style-type: none"> 1. CAL was ranked in the top 5% of TWSE / TPEx listed companies in the fifth Corporate Governance Ranking. 2. CAL was selected for the Taiwan High Compensation 100 Index and the Taiwan Employment Creation 99 Index. 3. CAL was selected for FTSE4 Good TIP Taiwan. 	2-1 Trust 2-4 Environment 3-1 Corporate Governance

Stakeholder	Top 3 Issues (Sorted by Level of Concern)	Communication Channel	Communication Frequency	Key Communication	Communication Result	Corresponding Chapter
Partner (Suppliers and Contractors)	<ul style="list-style-type: none"> ◆ Flight Safety Management ◆ Financial Performance ◆ Governance and Integrity Management 	1. Telephone 2. E-mail 3. Coordination meetings 4. Business visits 5. On-site audits	1. As needed 2. As needed 3. As needed 4. As needed 5. At least once every six months	Sustainable supply chain management	A supplier conference was held at the end of 2018.	2-1 Trust 2-3 Cooperation
Society	<ul style="list-style-type: none"> ◆ Governance and Integrity Management ◆ Flight Safety Management ◆ Brand Management 	1. Charitable events 2. Community activities 3. News release 4. Online mailbox	1. As needed 2. As needed 3. As needed every month 4. Daily, as needed	1. Support for social development 2. Assumption of social responsibility 3. Creation of social sustainability	In 2018, a total of 45,598 people benefited.	2-1 Trust 2-2 Human Resources 2-5 Society
Media	<ul style="list-style-type: none"> ◆ Flight Safety Management ◆ Labor Relations and Engagement ◆ Passenger Service 	1. News release 2. Press conferences 3. Interviews 4. Active communication of industry information	1. As needed 2. As needed 3. As needed 4. As needed	Collection of issues of stakeholders' concern and promotion of transparent communication	In 2018, 192 articles of news were released.	2-1 Trust 2-2 Human Resources
Association (including Aviation Organizations)	<ul style="list-style-type: none"> ◆ Labor Relations and Engagement ◆ Occupational Safety and Health ◆ Governance and Integrity Management 	1. Participation in project meetings 2. Participation in seminars on work 3. Organization or participation in summits, executive summits, committees, and coordination meetings 4. Participation in meetings convened by governments 5. Telephone, e-mail, and platforms	1. Monthly, as needed 2. As needed 3. Regularly, as needed 4. Regularly, as needed 5. As needed	1. Collection of trends at home and abroad and promotion of business operations 2. Coordination of business relationships and promotion of mutual benefits	1. In 2018, CAL participated in 33 project meetings regarding environmental issues. 2. In 2018, CAL participated in meetings and projects organized by international organizations and aviation alliances, such as IATA, SkyTeam, AAPA, and TAA, to strengthen the cooperation with airlines at home and abroad.	2-1 Trust 2-4 Environment

Initiatives and Membership

[GRI 102-12, 102-13]

In recent years, global climate change has become increasingly serious. Many years ago, CAL has actively established risk management mechanism for many years and now has become a benchmark for the aviation industry. In addition to continuously optimizing its environmental and energy management organizations and procedures, CAL has further incorporated passenger service into its operations and its verification of the environmental management system. It has done so in hopes of building the soundest risk management system in Taiwan's transportation industry. In 2018, CAL invested about TWD 43.92 million to participate in various aviation organizations and associations in Taiwan and international (92% accounted TWD 40.41 million for aviation industry development and 8% accounted TWD 3.51 million for the corporate sustainability).

Initiatives

2017-2018 Buckingham Palace Declaration

In June 2017, CAL signed the Buckingham Palace Declaration against illegal wildlife trafficking at the 73rd IATA Annual General Meeting. In the future, CAL will work with 20 or more other airlines to stamp out the transport of illegal wildlife in conformity with the UN's SDGs.

2016-2018 The Dow Jones Sustainability Index (DJSI)

Since 2015, CAL has taken the initiative to respond to the Dow Jones Sustainability Index (DJSI) questionnaire, disclosing its management objectives, strategies and practices covering the economy (including governance), environment, and society. In 2018, CAL was selected for the DJSI Emerging Markets for the third consecutive year and ranked third among the world's airlines. Taking its place behind Air France and ANA, CAL was the only airline in Taiwan that was selected for the index.

2012-2018 Pacific Greenhouse Gases Measurement (PGGM)

Since 2012, CAL has worked with PGGM by installing the In-service Aircraft for a Global Observing System (IAGOS) in the aircraft cabins to collect trans-Pacific high-altitude gas data for global warming and climate studies conducted by science agencies around the world. As of December 31, 2018, CAL has collected high-altitude gas data from 9,143 flights.

2012-2018 Carbon Disclosure Project (CDP)

Aside from being Taiwan's first service provider to independently review greenhouse gas emissions generated from its operations, CAL also stands as Taiwan's first carrier to respond to the CDP questionnaire. Since 2012, CAL has conducted greenhouse gas inventory training and surveys of greenhouse gas emissions for its affiliates on a regular basis and disclosed its carbon risk management strategies, greenhouse gas emissions, and reduction management and performance. CAL has been recognized as a benchmark enterprise. In the future, CAL will continue to review and improve carbon management strategies through participation in the CDP.

2008-2018 Earth Hour

CAL has supported this event since 2008. It provides support through concrete actions such as turning off the lights in the CAL Park, the Taiwan Branch Office, and Songshan Park. Apart from this, we have also utilized media outlets in urging the general public to be aware of the impacts of global warming and climate change.

Memberships

IATA

International Air Transport Association

Nominating committee member, Environment Committee (ENCOM), CSR Task Force, CORSIA, and Air Freight Carbon Footprint Working Group; 1 members and 2 observers of the Industry Committee.



Role and Participation

CAL Kept in close touch with IATA Headquarters and IATA North Asia and participated in meetings, industry committees and task forces; CAL also served as an environmental observer to participate in the discussions on environmental protection in the global civil aviation industry and to support survey and research of related environmental issues.

CAL implemented major policy reforms and projects based on the industry trends and updates of international airlines to become the world's leading airline.

Contribution and Benefit

- CAL helped the Executive Committee under IATA plan, supervised and implemented the policies and strategies for environmental management and sustainable development of the global aviation industry.
- CAL participated in the making of technical specifications of CORSIA and policies pertaining to sustainable aviation fuels and promoted industry training.
- CAL kept itself updated with progress of CORSIA and sustainable aviation fuels and provided information for national legislation.

AAPA

Association of Asia Pacific Airlines



Member of the Executive Committee

Role and Participation

As a founding member of AAPA, CAL has endeavored to connect airlines in the Asia-Pacific region. CAL has also played several important roles in speaking for airlines in the Asia Pacific region.

Contribution and Benefit

CAL participated in the discussions about environmental protection, improvement in fuel efficiency, and development of biofuels and provided information for regulators in Taiwan.

SkyTeam

SkyTeam

Member of the Executive Committee



Role and Participation

CAL became the fifteenth member of SkyTeam on September 28, 2011, and was the first airline in Taiwan that joined SkyTeam. To optimize services and markets in the aviation industry, CAL attended working meetings at all levels and annual meetings held by the Supervisory Board and the Governing Board on a regular basis.

Contribution and Benefit

SkyTeam helps CAL consolidate and strengthen its flight network not only in Greater China but also in the worldwide major cities, as well as through SkyTeam sub-project to enhance alliance cooperation in the globe network service.

TAA

Taipei Airlines Association

Chairman, Secretary General, Deputy Secretary General



Role and Participation

TAA is a platform for member airlines to communicate and feedback important issues with official organizations. It facilitates communication and experience sharing with cross-strait aviation industry as well. CAL is currently acts as the tenth TAA chairman and director.

Contribution and Benefit

TAA is an NGO organization formed by Taiwan's airlines. CAL is the chairman of TAA and is committed to coordination the industry issues (such as labor and consumer right etc.), and is strived for the common interests of Taiwan's airlines.

FSF

Flight Safety Foundation

Convener of the Technical Regulation Team



Role and Participation

CAL served as the convener of the Technical Regulation Team under the Flight Safety Foundation (FSF) to promote and establish the mechanism for collecting and studying laws and regulations pertaining to international flight safety and environmental protection and to advise on amendments or countermeasures, in hopes of improving national legislation and industrial competitiveness.

Contribution and Benefit

CAL promoted and established the mechanism for collecting and studying laws and regulations pertaining to international flight safety and environmental protection and advised on amendments or countermeasures to improve national legislation and industrial competitiveness.

AAPT

Association of Atmosphere Protection in Taiwan

Director

Role and Participation

CAL acted as one of the directors to help facilitate the communication between the industry, the government, and the academia about policies, laws, academic research, technology research and development, counseling, and services pertaining to atmosphere protection in Taiwan.

Contribution and Benefit

CAL helped facilitate the communication between the industry, the government, and the academia about policies, laws, academic research, technology research and development, counseling, and services pertaining to atmosphere protection in Taiwan.

CCS

Strategic Alliance for Cleaning Development and Carbon Right Management

Founding Member

Role and Participation

Established by the Environmental Protection Administration, the Strategic Alliance for Cleaning Development and Carbon Right Management is an information-sharing platform that helps the industry with low-carbon transformation and carbon reduction and promotes industrial cooperation and fulfillment of corporate social responsibilities.

Contribution and Benefit

CAL actively shared its experience and opinions with the industry, the government, and the academia to be aware of trends of carbon management in the international aviation industry and to promote low carbon transformation and industrial cooperation.

Center for Corporate Sustainability

Advisory Director

Role and Participation

CAL acted as one of the advisory directors to participate in the training and operation of the Center for Corporate Sustainability. CAL participated in a series of training courses on corporate sustainable competitiveness and seminars on the corporate sustainability report and related issues organized by the Center for Corporate Sustainability to improve its knowledge of industrial practice and latest trends.

Contribution and Benefit

The Advisory Council is the highest decision-making organization of the Center for Corporate Sustainability. Becoming a member and acting as a director of the Center for Corporate Sustainability allowed CAL to be aware of latest laws and regulations, policy review, technical regulations, and standards for sustainability and to have influence.

CHAPTER

1

Sustainability Management Overview

- 1-1** The United Nations Sustainable Development Goals
- 1-2** Sustainability Strategy and Organization Structure
- 1-3** True Value of China Airlines

1-1

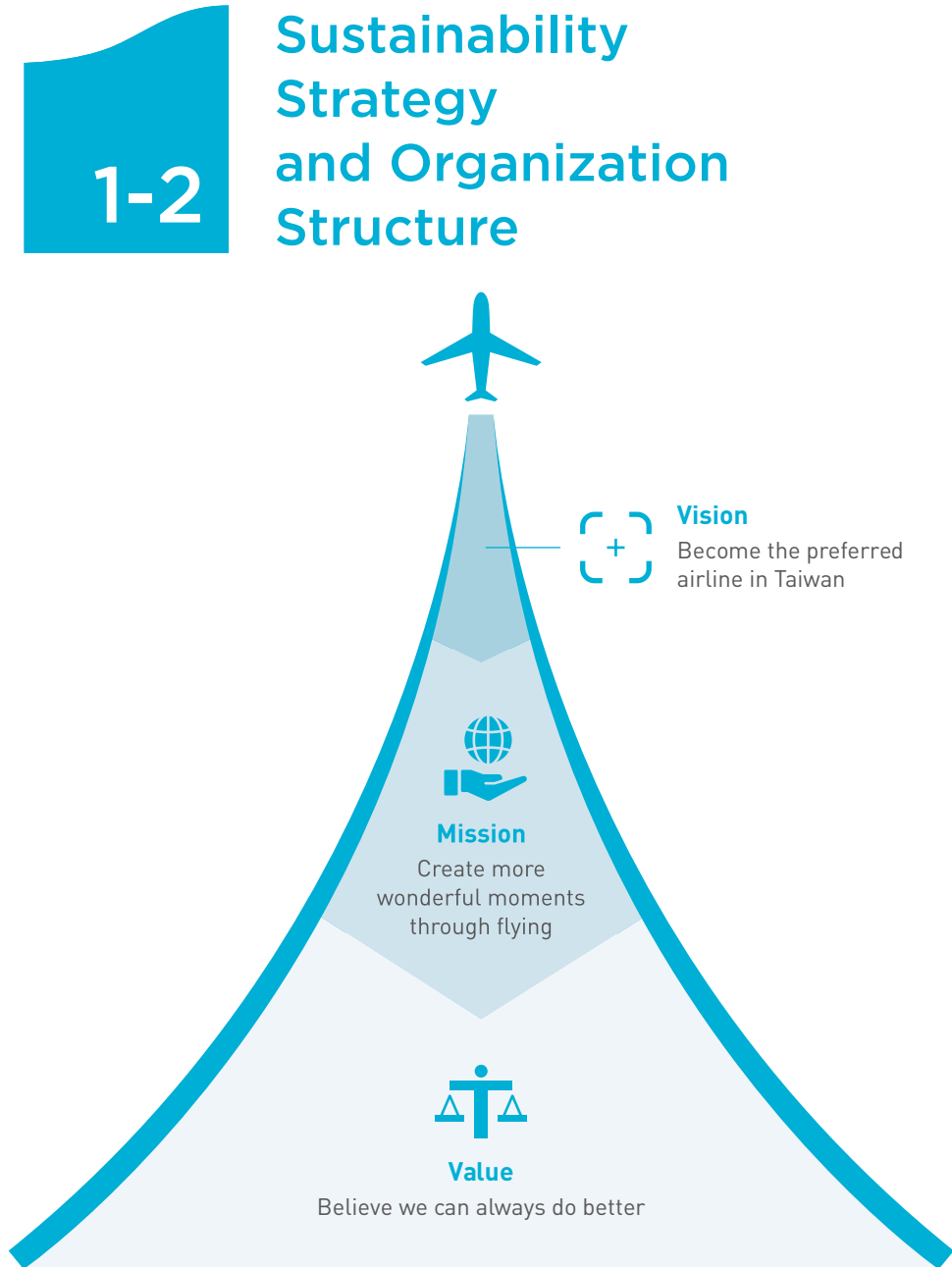
The United Nations Sustainable Development Goals

Sustainability becomes more crucial for our business management nowadays. CAL is deeply aware that business should not only pursue financial performance, but also create stakeholders' value through a company's core competence to build the win-win situation for its stakeholders and the company. To show its determination to create value for stakeholders, CAL has established a sound sustainable management mechanism in line with 17 Sustainable Development Goals (SDGs) officially launched by the United Nations(UN) in 2016, hoping to maximize the benefits for the country, society, and all stakeholders.

As a corporate citizen, CAL supports the UN's SDGs and focuses its sustainable development on nine SDGs in accordance with the SDG Compass and related sustainability reports of the International Civil Aviation Organization (ICAO), the Air Transportation Action Group (ATAG), and the international transportation industry.























9 United Nations Sustainable Development Goals supported by China Airlines



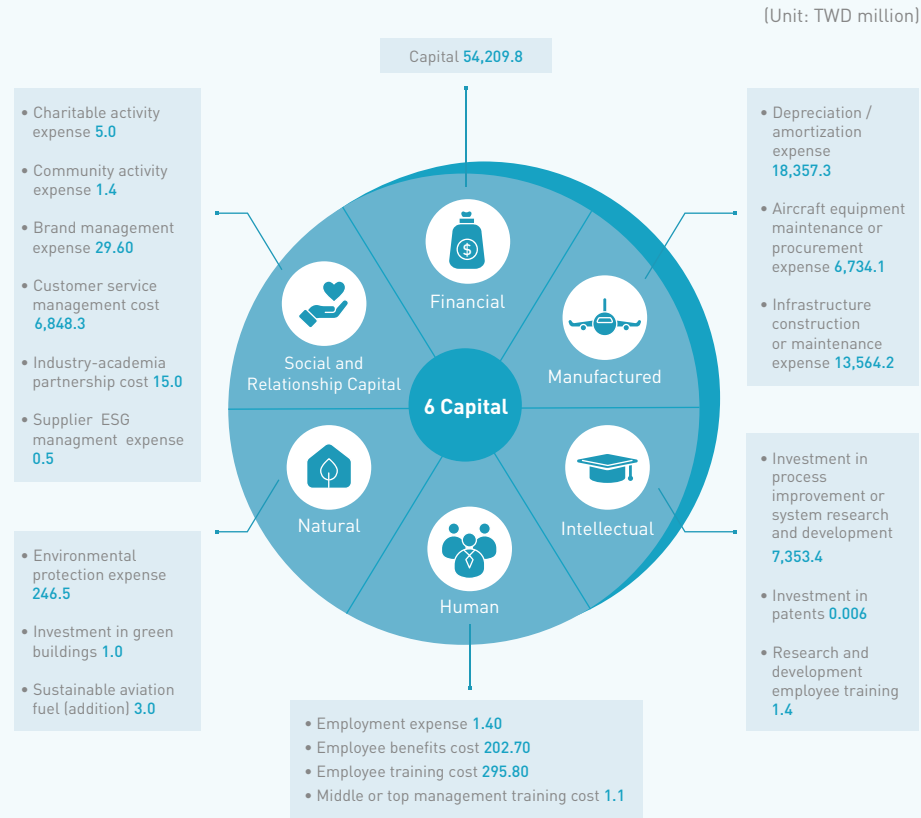
1-2-1 Vision and Strategy

In addition to offering a strong framework that is required to regulate sustainable development, corporate sustainability also allows an organization to maintain its commitment to stakeholders in both the value chain and the industry chain. CAL's vision and the core of its sustainable development is to become the preferred airline in Taiwan. CAL's sustainability strategy is based on safety and governance, with the following focuses: fleet and network, product and service, Group business, and brand awareness. Established through the value creation model, such focuses cover the aspects of economy, environment, and society; and they echo the UN's 9 Sustainable Development Goals (SDGs). In view of the Group's resources and the issues of concern to stakeholders, CAL strives to improve its values regarding trust, human resources, cooperation, environment, and society.

Sustainability Strategy Framework

Sustainability Strategies	Direction	Echo to UN SDGs
Safety	<ul style="list-style-type: none">Flight SafetyTraining	 
Governance	<ul style="list-style-type: none">TalentInfluence	   
Fleet and Network	<ul style="list-style-type: none">EfficiencyGreen Transportation	   
Product and Service	<ul style="list-style-type: none">Mutual BenefitTechnology	  
Group Business	<ul style="list-style-type: none">Multi-BrandPartnership	  
Brand Awareness	<ul style="list-style-type: none">Local BrandAccessibility	   

Capitals Input



Sustainability Strategies



• Safety	Embed the safety culture into products and services
• Governance	Root sustainable concept in value chain to make positive influence
• Fleet and Network	Promote highly efficient fleets and network to forward environmental friendliness

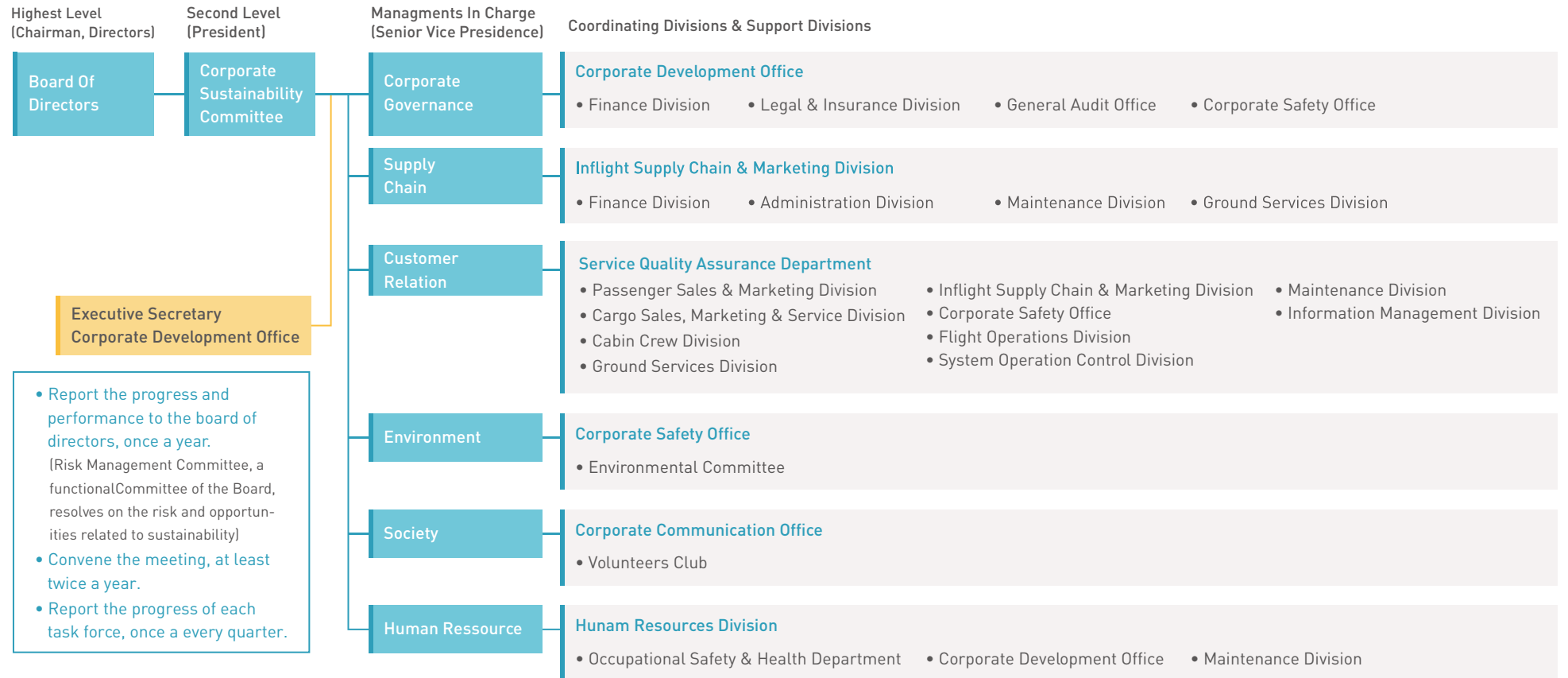
• Product and Service	Create sustainable services with sustainable value and technology
• Group Business	Spread sustainability to group business to improve cooperation and sustainable development
• Brand Awareness	Promote local brand and transportation friendly

Value Creation

	Output	Outcome	Corresponding Chapter
Financial	<ul style="list-style-type: none"> Operating revenue (TWD million): 150,620 	<ul style="list-style-type: none"> Revenue grew by 7% 	<ul style="list-style-type: none"> 0-3 About China Airlines (P.11)
Manufactured	<ul style="list-style-type: none"> Number of new aircraft: 4 Number of passengers created by new aircraft: 1,224 Punctuality rate of high-level repair and maintenance service: 97% Number of incidents causing casualties or flight crashes: 0 Number of existing destinations (including new ones): 77 passenger destinations/35 freight destinations Number of passengers/freight worldwide: RPK 41,748 (million) / FRTK 5,908 (million) 	<ul style="list-style-type: none"> Passenger flight experience was improved The punctuality rate of high-level repair and maintenance service was above the target (95%) The goal of 100% flight safety was achieved Ontario, Canada was added as a passenger destination to enhance the scope of passenger transport service A new freight destination of Columbus, Ohio was added to offer multi-leg flights so as to optimize the route network Compared to 2017, the number of passengers grew by 2.39% and the volume of freight grew by 2.9% worldwide 	<ul style="list-style-type: none"> 0-3 About China Airlines (P.11) 2-1 Trust (P.36)
Intellectual	<ul style="list-style-type: none"> Number of cost-saving patents: 61 Number of patents obtained: 2 Number of R&D employees trained: 282 	<ul style="list-style-type: none"> 42.7 man-month / year was saved The cost of TWD 65.88 million was saved CAL's intellectual property rights were continuously maintained The skills of information employees were enhanced in response to the development of or updates to information systems 	<ul style="list-style-type: none"> 2-1 Trust (P.36) 2-2 Human Resources (P.56)
Human	<ul style="list-style-type: none"> Number of new employees: 506 Retention rate: 96.54% Employee turnover: 5.88% Total number of employee training hours: 330,000 Total number of middle or top management training hours 	<ul style="list-style-type: none"> New employees were hired to improve the business capacity and competitiveness of CAL Compared to 2017, the retention rate increased by 2.5% Compared to 2017, employee turnover decreased by 0.5% Related training was organized based on the needs of business operations Job-related training was organized to improve management knowledge and consensus 	<ul style="list-style-type: none"> 2-2 Human Resources (P.56)
Natural	<ul style="list-style-type: none"> Electricity consumption (kWh): 36,009,284 Carbon reduction (tons): 8,898,019 Waste reduction (kg): 4,684,656 Water consumption (thousand tons): 148.22 Number of water-saving projects: 4 Number and percentage of green buildings: 2/66.67% Sustainable aviation fuel added (tons): 20 	<ul style="list-style-type: none"> 837,377 kWh of electricity was saved through a sound energy management system Carbon emission reductions of 144,882 tons were achieved through various carbon reduction measures 149,649 kg of waste was reduced through improved waste management 3,276 liters of water were saved through continuous water management Compared to 2017, the percentage of green buildings increased by 33.67%, and electricity from the elevator power regeneration system increased by 764 kWh Compared to 2017, 80,000 tons of carbon emissions were reduced 	<ul style="list-style-type: none"> 2-4 Environment (P.96)
Social and Relationship Capital	<ul style="list-style-type: none"> Number of charitable activities: 15 Number of beneficiaries: 1,169 Number of community activities: 33 Number of participants: 855 Number of sponsorships: 57 Number of brand promotion projects: 1 Result of brand promotion (TWD million): 46.5 Passenger transport customer satisfaction rate: 87.2% Number of passenger transport customer complaints: 3,252 Freight customer satisfaction rate: 87.3% Number of freight customer complaints: 0 Number of industry-academia partnerships: 33 Number of industry-academia partnership projects: 6 Number of participants: 109 Coverage of sustainable supply chain management: 87.65% 	<ul style="list-style-type: none"> Support was provided for the disadvantaged to improve quality of life, level of education, and social balance Students were trained to develop a habit of independent reading Revenue of TWD 27,571,992 was created through improved business development and brand image The effect and quality of brand promotion was enhanced Our brand video, "The Trip You Promised," was recognized as the most successful video at Best Ad.com for the week of August 1, 2018, thereby enhancing our brand image and sales Compared to 2017, the overall passenger satisfaction rate increased by 2.1 points Compared to 2017, passenger transport customer complaints decreased by 25.9% Compared to 2017, freight customer complaints decreased by 100% The purpose of industry-academia partnerships was to develop national aviation professionals The purpose was to obtain insights into the sustainability issues of Tier-1 critical suppliers 	<ul style="list-style-type: none"> 2-1 Trust (P.36) 2-2 Human Resources (P.56) 2-3 Cooperation (P.89) 2-5 Society (P.124)











1-2-2 Corporate Sustainability Committee











Under the challenging and rapid changing environment with the growing trend regarding sustainability, CAL followed by the international trend of sustainability and referred to the experience from the benchmarking companies to establish its Corporate Sustainability Committee in 2014 (see figure below), the highest governing body of sustainability promotion, and set the Corporate Social Responsibility and Sustainable Development Best Practice Principles. The Corporate Sustainability Committee comprises six task forces in all, and they are responsible for setting and implementing short-term, middle-term, and long-term sustainable development goals to enforce the sustainable development.



Corporate Social Responsibility and Sustainable Development Best Practice Principles

Sustainability Goals of Each Task Force

Task Force	2020	2025	2030
Corporate Governance  	<ol style="list-style-type: none"> Achieving 100% of sustainability tasks for the year and establishing the employee awareness improvement plan Enforcing the operating mechanism for SDGs 	<ol style="list-style-type: none"> Regularly reporting the progress of CSR tasks to the Corporate Sustainability Committee and holding at least two CSR training sessions for affiliates Assisting industry partners in building up capacity for sustainable development 	<ol style="list-style-type: none"> Disclosing sustainable development of airline transport affiliates Supporting global sustainability initiatives to expand the industry influence
Customer Relation     	<ol style="list-style-type: none"> Implementing the personal information management system and obtaining certification of BS10012 personal information management system Increasing the freight customer satisfaction rate to 88% Promoting an intelligent business model- develop talents on information security, AI, Big Data, and APP, introducing AI Robot that optimizes customer service mechanism. Cooperating with aviation and tourism industry peers to develop business opportunities through new distribution capability (NDC) Continuously participating in aviation organizations and increasing influence Strengthening the promotion of the safety management system (SMS) 	<ol style="list-style-type: none"> Including all CAL employees in training on personal information management Increasing the freight customer satisfaction rate to 89% Promoting a smart airport-Establish a smart airport at Terminal 3 of Taiwan Taoyuan International Airport with digital and innovative technology application Improving customer satisfaction through digital innovation Publishing the results of flight operations studies to improve technical capacity of aviation industry Strengthening safety culture 	<ol style="list-style-type: none"> Creating a corporate culture of personal information security, encouraging employees to propose for innovation or improvement, improving customer trust, and maximizing privacy protection Increasing the freight customer satisfaction rate to 90% Promoting intelligent tourism-Integrate tourism-related industries (such as transportation, hospitality, insurance, catering, and tourist attractions) to provide a one-stop smart travel eco-system Integrating digital innovation with the core value chain of products and service Developing innovation plans with industry peers to increase the momentum for innovation of the aviation industry Continuously enhancing the safety management system
Human Resources   	<ol style="list-style-type: none"> Organizing eight insider sharing sessions that provide an opportunity for internal cross disciplinary networking Establishing the Company's aviation management talent pool Percentage of female manager reaching 24.5% 	<ol style="list-style-type: none"> Completing the establishment of all internal online training materials in various professional fields Establishing the optimal learning path of the Company's aviation management talent pool Percentage of female manager reaching 25% 	<ol style="list-style-type: none"> Applying to Taiwan's aviation talent development Promoting Taiwan's aviation talent development Percentage of female manager reaching 27%

Task Force	2020	2025	2030
Supply Chain  	<ol style="list-style-type: none"> 1. Maintaining SAQ Score at 85 Points 2. Optimizing risk management for sustainable supply chain, implement SAQ, and audit 30% of critical tier-1 suppliers by 2020 	<ol style="list-style-type: none"> 1. Maintaining SAQ score at 87 points 2. Expanding the scope of supply chain management, implement SAQ audits, and audit 100% of critical tier-1 suppliers by 2025 	<ol style="list-style-type: none"> 1. Maintaining SAQ score at 89 points 2. Providing supply chain training, improve assistance mechanisms, and continuously implement a SAQ
Environment      	<ol style="list-style-type: none"> 1. Improving annual aviation fuel efficiency by 1.5% (flight operations) 2. Reducing carbon emissions by 38% compared with 2009 (ground operations) 3. Implementing TCFD (Taskforce on climate-related financial disclosure) evaluation and disclosure 4. Reducing general waste (non-recyclable) by 2% compared with 2018 5. Industrial waste recycling ratio reaching 40% 6. Reducing water consumption by 1.5% compared with 2018 (Ground) 7. Reducing paper consumption by 5% compared with 2018 8. Embargoing illegal wildlife species and prohibiting use of illegal species as food ingredients 	<ol style="list-style-type: none"> 1. Improving annual aviation fuel efficiency by 1.5% and maintaining carbon-neutral growth from 2020 (flight operations) 2. Reducing carbon emissions by 40.43% compared with 2009 (ground operations) 3. Implementing carbon pricing operation 4. Reducing general waste (non-recyclable) by 7% compared with 2018 5. Industrial waste recycling ratio reaching 45% 6. Reducing water consumption by 5% compared with 2018 (Ground) 7. Reducing paper consumption by 10% compared with 2018 8. Embargoing illegal wildlife species and prohibiting use of illegal species as food ingredients 	<ol style="list-style-type: none"> 1. Improving annual aviation fuel efficiency by 1.5% and maintaining carbon-neutral growth from 2020 (flight operations) 2. Reducing carbon emissions by 42.34% compared with 2009 (ground operations) 3. Implementing carbon pricing operation 4. Reducing general waste (non-recyclable) by 12% compared with 2018 5. Industrial waste recycling ratio reaching 50% 6. Reducing water consumption by 7% compared with 2018 (Ground) 7. Reducing paper consumption by 15% compared with 2018 8. Embargoing illegal wildlife species and prohibiting use of illegal species as food ingredients
Society  	<ol style="list-style-type: none"> 1. Increasing the proportion of educational sponsorships 2. Calculating SROI (social return on investment) for the sponsorship 	<ol style="list-style-type: none"> 1. Developing opportunities for students to receive international education 2. Promoting economic growth and employment assistance in underdeveloped areas / developing countries 	<ol style="list-style-type: none"> 1. Improving the quality of education in underdeveloped areas / developing countries 2. Enhancing the benefits of sponsorships regarding improving society

1-3 True Value of China Airlines

In order to embrace mutual prosperity along with our stakeholders and endeavoring to create sustainable value for all stakeholders, CAL has integrated six forms of capital (financial, natural, manufactured, intellectual, human, and social) to its corporate vision and strategy, introducing the concepts of true value to monetize the environmental and of social externality's costs and benefits. This true value is viewed as an important reference point for corporate sustainability, and it helps all stakeholders understand the Company's sustainability performance.

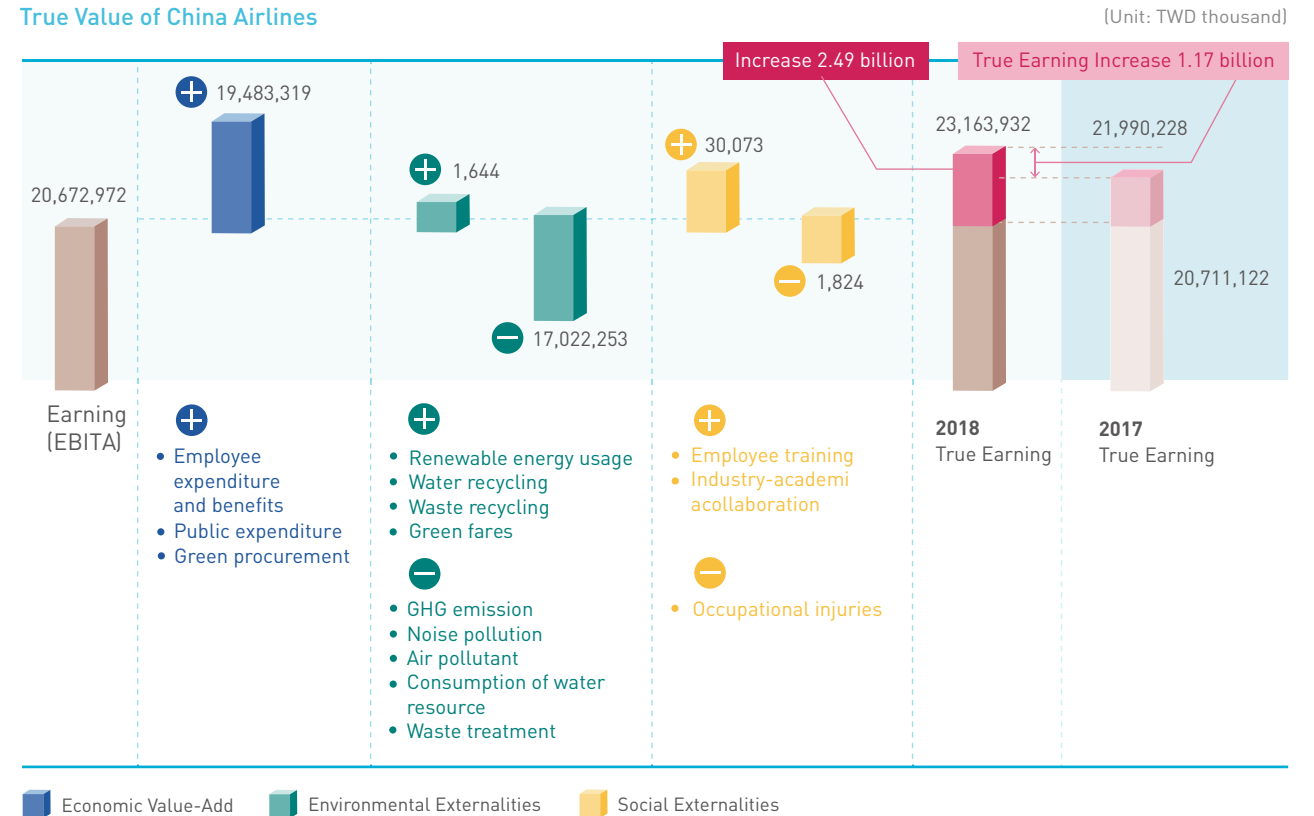
Procedures for Assessing True Value

- 1 Create the impact map
- 2 Set the scope
- 3 Identify impact factors of material externalities
- 4 Collect internal data
- 5 Calculate environmental and social externalities
- 6 Monetize external costs and benefits

1-3-1 True Value

According to the result of the calculation, CAL's true earnings in 2018 came to around TWD 23.2 billion, reflecting a positive difference of TWD 2.49 billion compared with traditional financial performance measures (EBITA). Given the small differences with EBITA in 2017 and 2018, the true earnings in 2018 were TWD 1.17 billion more than that seen in 2017 due to the positive benefits created by respective increases of 10.56% and 135.28% in "employee salary and benefits" and "green procurement" in 2018. In line with the characteristics of the aviation industry, waste treatment, waste recycling, and green fares were added to the scope of environmental external costs in 2018. In CAL's true earnings of 2018, environmental external costs totaled TWD 17 billion. Out of this, greenhouse gas (GHG) emissions and noise pollution were the main sources generating this cost. Meanwhile, positive benefits created by additional economic value and social externalities totaled TWD 19.5 billion.

True Value of China Airlines



CHAPTER

2

Value Creation

- 2-1** Trust
- 2-2** Human Resources
- 2-3** Cooperation
- 2-4** Environment
- 2-5** Society

2-1

Trust

HIGHLIGHTS



Only Taiwanese airline in the IATA Nominating Committee

Only Taiwanese airline selected for the Nominating Committee member of the International Aviation Transport Association (IATA).



100% achievement in flight safety

Kept enhancing the safety management system in accordance with international standards of IOSA.



8th passed IOSA certification

Granted the IATA Operation Safety Audit (IOSA) for the eight consecutive times.



1st flight safety education fair

Held internal seminars on civil aviation regulations and practices to promote flight safety management.



Honor to be selected for serving for the mission of presidential aircraft

Selected as presidential aircraft for several times with outstanding flight operations and ground services.



Management Approach

(GRI 103-1, 103-2, 103-3)

■ Importance of Material Issues

Zero accidents is the foundation for creating sustainable value for customers. Therefore, providing reliable and safe service is not only the core value of CAL, but also our way to sustainability. As a professional transportation service provider, the sustainable operations of CAL depends on the quality of transportation service provided. To create sustainable value for customers, CAL is dedicated to protecting customers' privacy, providing premium service that meets their expectations and needs, and continuing optimizing the quality of service.

■ Commitment and Long-Term Goals

• Commitment

Flight safety is a tremendously serious commitment we make to our customers and the general public. By upholding the principles of compliance and zero accidents, CAL commits itself to offering safe and reliable flights quality to customers. With customers being our first priority, we always pay attention to international trends and customers' benefits in the hope of achieving the corporate mission of creating more wonderful moments through flying.

• Long-term Goals



2020

1. Implementing the personal information management system and obtaining certification of BS10012 personal information management system
2. Increasing the freight customer satisfaction rate to 88%
3. Promoting an intelligent business model- develop talents on information security, AI, Big Data, and APP, introducing AI Robot that optimizes customer service mechanism.
4. Cooperating with aviation and tourism industry peers to develop business opportunities through new distribution capability (NDC)
5. Continuously participating in aviation organizations and increasing influence
6. Strengthening the promotion of the safety management system (SMS)

2025

1. Including all CAL employees in training on personal information management
2. Increasing the freight customer satisfaction rate to 89%
3. Promoting a smart airport-Establish a smart airport at Terminal 3 of Taiwan Taoyuan International Airport with digital and innovative technology application
4. Improving customer satisfaction through digital innovation
5. Publishing the results of flight operations studies to improve technical capacity of aviation industry
6. Strengthening safety culture

2030

1. Creating a corporate culture of personal information security, encouraging employees to propose for innovation or improvement, improving customer trust, and maximizing privacy protection
2. Increasing the freight customer satisfaction rate to 90%
3. Promoting intelligent tourism-Integrate tourism-related industries (such as transportation, hospitality, insurance, catering, and tourist attractions) to provide a one-stop smart travel eco-system
4. Integrating digital innovation with the core value chain of products and service
5. Developing innovation plans with industry peers to increase the momentum for innovation of the aviation industry
6. Continuously enhancing the safety management system

Unit in Charge

Corporate Sustainability Committee-Trust Task Force and Corporate Safety Committee

Management Mechanisms

- The Corporate Sustainability Committee convenes a meeting at least twice every year
- The Corporate Safety Committee convenes a meeting every quarter on a regular basis
- The quality review meeting is convened every quarter on a regular basis
- The Trust Task Force submits the KPI report to the Corporate Sustainability Committee every quarter
- The personal information protection management review meeting is convened every year on a regular basis

Objectives and Plans

Flight Safety

SPI (Safety Performance Indicators)	2018			2019 Objectives
	Objectives	Performance	Achievement	
Fatal and Hull Loss Accidents	0	0	100%	0
Runway Excursions (RE)	0	2	0%	0
Controlled Flight into Terrain (CFIT)	0	0	100%	0
Loss of Control in Flight (LOC-I)	0	0	100%	0

Note: CAL has provided enhanced training for cabin crew based on the results of the investigation. Through systematic training and supervision, flight operations and risks can be improved. To implement risk controls, related improvements have been included in SPIs and approved by the authority in charge of civil aviation

Customer Service (GRI 102-44)

KPI	2018			2019 Objectives
	Objectives	Performance	Achievement	
Overall Passenger Satisfaction	85.2	87.2	100%	87.2
Overall Cargo Service Satisfaction	88	87.3	99.2%	88
Overall Maintenance Satisfaction	8.4	8.68	100%	8.4

Note: The reason why cargo service satisfaction is because of abnormal climate conditions, such as the flood at KIX, heavy snows at JFK and ORD, and an earthquake at CTS, caused underperformance in overall cargo customer satisfaction.

Grievance Mechanism

- **Passenger: Passenger Branch Office** — [Website](#)
- **Cargo: Cargo Sales, Marketing & Service Division** —
E-mail: tpefqci@china-airlines.com
- **Aircraft Maintenance: Engineering and Maintenance Organization** —
E-mail: emo.customer@china-airlines.com



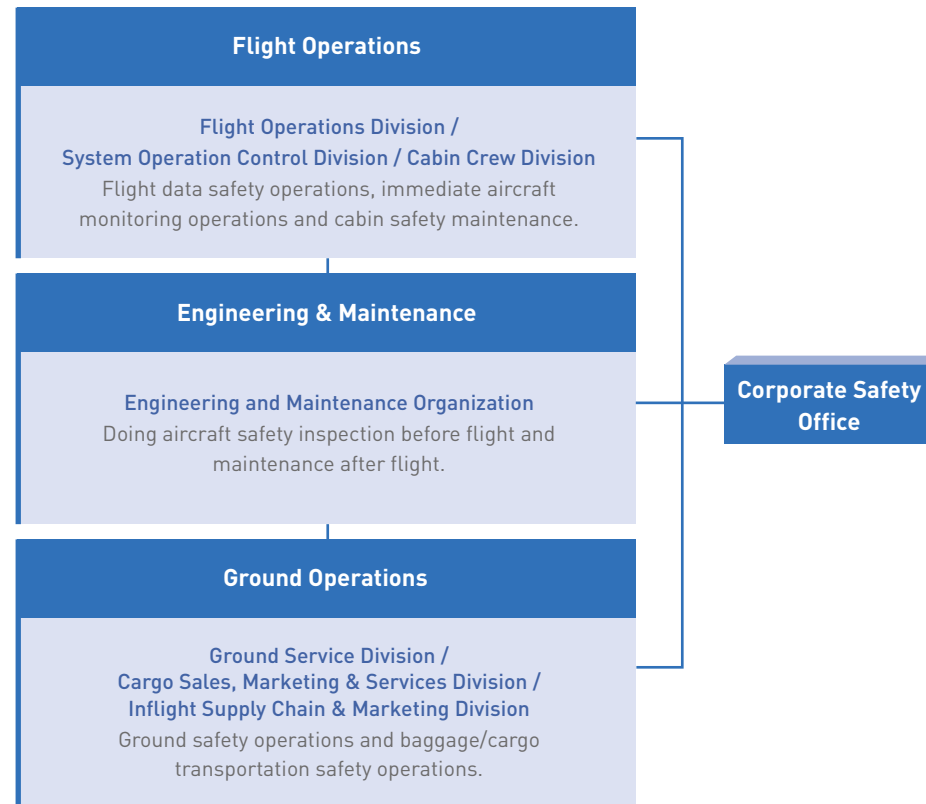
Passenger Branch Office



Stakeholder Contact

2-1-1 Flight Safety

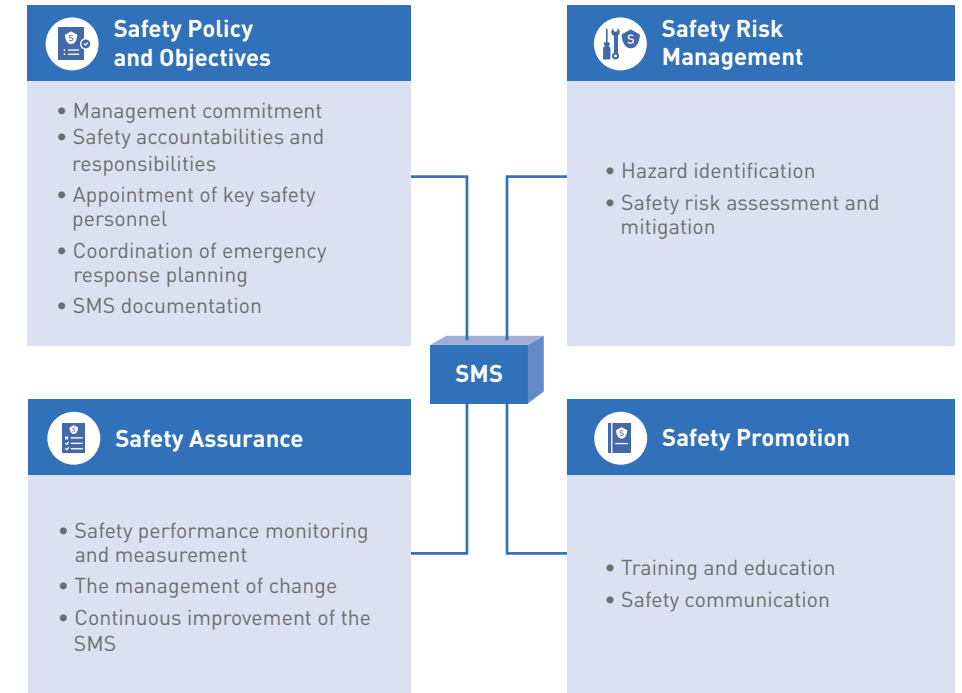
Flight safety is not only limited in the air, but also instead constitutes a broader extension of safety concepts that are centered on the aircraft. Going beyond flights and navigation, safety controls and aircraft maintenance undertaken by front-end operations also form an inseparable aspect of safe flying. As the core unit in charge of flight safety, the Corporate Safety Office works with divisions/ departments in charge of flight operations, ground operations, and engineering and maintenance to form a solid flight safety network. Safety is the core value of CAL and our absolute commitment to customers. We plan and monitor flight safety through management systems and work with every employee on constant review and improvement to provide passengers with safe and reliable flights.



Safety Management System (SMS)

CAL has implemented its Safety Management System (SMS) for more than a decade. We use SMS to identify, collect, and analyze hazards during the operation of aircraft and set safety performance indicators and objectives to follow up, control, and reduce risks. We provide safety training and promotion for employees and incorporate the SMS into our corporate culture and daily operations. To shore up our foundations for flight safety, we also encourage employees to take the initiative to report safety issues and risk factors.

Safety Management System (SMS)



CAL Safety Policy

Safety Risk Management

1. Safety Performance Indicators

To comply with and perform beyond domestic and international safety standards, CAL sets its annual safety performance indicators based on its own past performance as well as the Safety Reporting System and requirements of authorities in charge of civil aviation, plus official safety reports provided by international organizations. The annual safety performance indicators are monitored in executive meetings and reviewed in safety task force meetings on a regular basis to promote the performance of SMS.

Safety Management Meeting



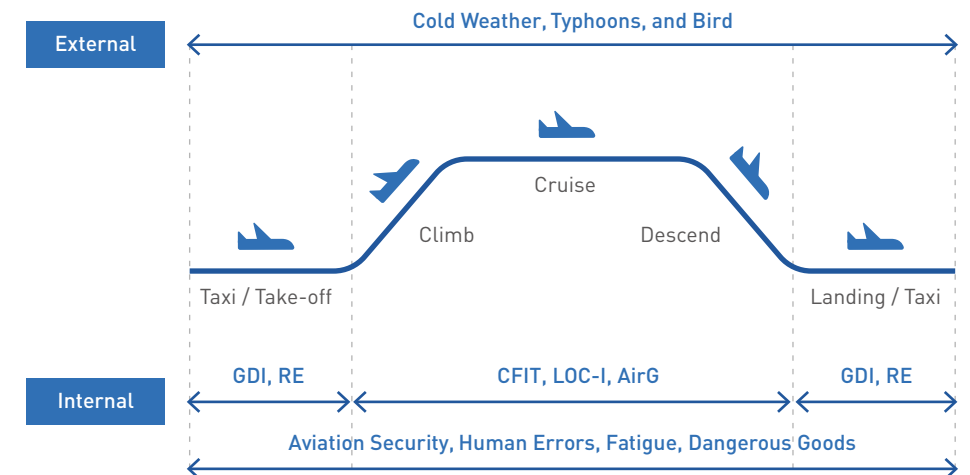
2. Safety Reporting System

To enhance their awareness of flight safety, CAL encourages employees to use the Safety Reporting System to proactively identify potential risks and report possible safety issues in their daily work. Through risk reporting, risk management, audits, improvements, and statistical analysis, CAL prevents

unsafe incidents from occurring and increases its overall security level. In addition, CAL conducts risk analysis and assessments based on seasonality, trends of flight safety, and changes in the industry. Through announcements and meetings, the company publicizes to employees its code of conduct and the importance of flight safety, in a further effort to control risks. CAL has a reward mechanism to encourage employees to report potential risks, and in 2018, 170 employees received such rewards.



Flight Risks



3. Flight Operations Quality Assurance (FOQA)

CAL complies with Flight Operations Quality Assurance (FOQA)^[Note]. In 2016-2017, CAL introduced Aerobytes, a form of flight data software with strong statistical functions, to adjust FOQA based on the Flight Crew Operations / Operating Manual (FCOM). This was done in hopes of reducing unstable aircraft approaches and improving flight operations.

In order to ensure flight safety and reach preventive purpose, the Company has also developed the Flight Operations Quality Information System (FOQIS) based on internal requirements. The system can quickly identify potential risks from in flight operations and provide corrections in a timely manner.

Note: FOQA uses digital flight data from normal line operations to provide insight into the safety of flight operations. The goal is to identify significant unsafe events, reveal operational inefficiencies and address risk by taking appropriate action.

4. Fatigue Management

To reduce the risk of piloting under fatigue caused by flying through different time zones, CAL complies with the Civil Aviation Act and international standards for fatigue management. In 2017, CAL introduced the Fatigue Management Guide for Airlines Operator established by ICAO, based on a prescriptive approach. Through risk forecasts and proactive planning, CAL implemented rests and flight hours in accordance with related regulations. In 2018, CAL initiated the Guide to Fatigue Management for domestic airlines to enhance flight crews' knowledge and responsibility regarding fatigue management. In addition, the Company introduced a new crew scheduling system (AIMS) to optimize flight assignments and fatigue management. In March 2019, CAL plans to launch a fatigue management system that has measurement indexes for fatigue factors to evaluate the degree of fatigue. With this system, CAL can optimize flight assignments based on the existing regulations governing flight crew fatigue risk management. In addition, CAL can utilize proactive planning, crew feedback, and forecasts to further reduce opportunities for fatigue and thereby significantly improve flight safety.

In addition to applying AIMS and the Fatigue Management Guide for Airlines Operator to the prediction, monitoring and management of fatigue, CAL also encourages flight crews to submit fatigue reports through the Safety Reporting System. Once reports are confirmed, the Medical Service Department, the Security Department, and units in charge will discuss and review the cause of fatigue and make a reasonable adjustment to the flight schedule. CAL also reports compliance with the regulations governing flight crew fatigue management and adjustments to the authority in charge of civil aviation on a monthly basis and sets the safety performance indicators for review and improvement.

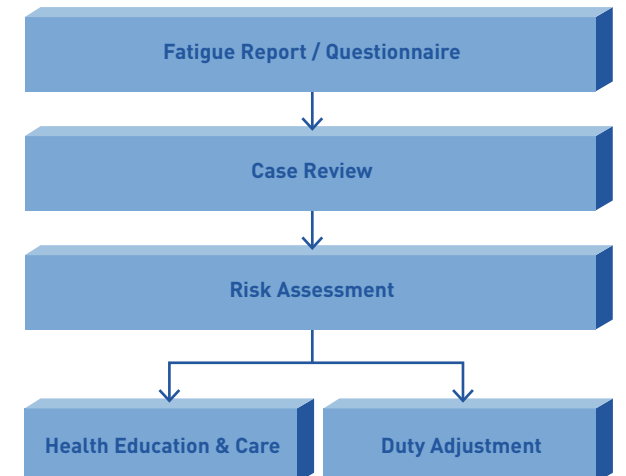
5. Alcohol Test Mechanism

According to the alcohol test stipulated in Article 199 of the Aircraft Flight Operation Regulations established by the Civil Aeronautics Administration, CAL has established the alcohol test mechanism to conduct alcohol tests for operations personnel, such as flight crew, cabin crew, flight dispatchers, and maintenance personnel and increase their alertness of flight safety.

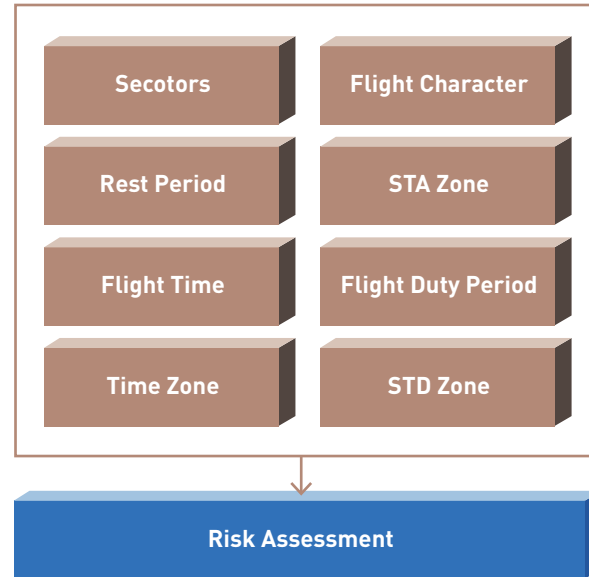
Guide to Fatigue Management



Fatigue Report Handling Process



Flight Task Evaluation



Safety Promotion and Training

CAL plans educational and entertaining safety events every year to enhance all employees' awareness of flight safety and inspire them to act safely in a positive way.

1. CAL implements the safety promotion program every year to enhance all employees' awareness of flight safety and sets flight safety as the highest standard:

In 2015: Implemented the safety management system and applied its decision-making tools.

In 2016: Enhanced employees' awareness of flight safety, promoted management by walking around

(MBWA), and strengthened the safety awareness of supervisors and employees in a positive way.

In 2017: Enhanced the safety management system, promoted management by walking around (MBWA), and strengthened the safety awareness of supervisors and employees in a positive way.

In 2018: Enhanced employees' awareness of flight safety through a series of safety events featuring safety identification, participation, management, and implementation; encouraged employees' participation in preventive management of potential risks, and incorporated safety policies into each operation.



2. 2018 CAL Flight Safety Exhibition

CAL organized the first flight safety exhibition in 2018 to promote flight safety and SMS. It featured three themes: Records of Flight Safety and SMS, Safety Promotions, and SMS Milestones. The

exhibition demonstrated the results of SMS and efforts made by all CAL employees over the past decade and promoted the achievement of zero accidents. To demonstrate its determination to fulfill flight safety, CAL also invited the authority in charge to share the civil aviation regulations and practices and changes in the overall environment. By facing difficulties bravely and paying attention to details, CAL is dedicated to providing passengers safe flights.



3. Civil Aviation Regulations and Practices

Aviation industry is facing significant safety challenges and threats from diversified environments, such as high-teah, society impacts, political issues and economic downturn etc. The purpose of the seminar was to promote the implementation of the safety management policy and improve the employees' awareness of flight safety. In 2018, three sessions of the seminar on civil aviation regulations and practices were organized and 270 trainees attended.

Civil Aviation Regulations and Practices on July 3, 2018



Flight Crew Management

Professional Training and Evaluation (GRI 404-2)

China Airlines identifies the hazard ractors and implements risk management mechanisms through three concepts "Predictive", "Proactive" and "Passive", adopts a complete internal and external environmental change training, such as new stations, new routes, new aircraft, new systems, new procedures, systemic proficiency checks, Flight Operation Quality Assurance (FOQA), and regular evaluation of pilot instructors, to cultivate pilots of the highest quality and ensure flight safety.

1. Strict Training and Objective Test

In order to implement our commitment of flight safety, CAL strictly requests our cadet pilots to complete at least 10 months of training programme at well-known flight training schools in the United States or Australia. To ensure the flight training is solid, they have not only to pass the evaluate performance at the training school but also require to meet the test of CAL aircraft type evaluation.

CAL has introduced evidence-based Training (EBT) to replace traditional recurrent training and tests. The EBT is guided by risk and crisis management, utilizing big data collection and analysis to enhance the ability of handling abnormal situation by individual behaviour, fleet performance, operation sites, and historical recorders etc.

CAL has achieved 100% EBT for a total of 2,388 flight crew in 2018.

The biggest difference between EBT and traditional training is that subjects are designed to meet the actual flight conditions. The test results not only reflect the functions that the flight crew members lack, but also allow the professionally trained examiners to give the most correct advice. Therefore, the weaknesses can be further addressed in subsequent training. EBT ensures that the flight crew is competent and up to standards, and also helps set up the database of flight operations. This benefits the future design of training and test models that are more in line with CAL's flight operations and the needs of the flight crew.

2. Professional Training Facilities

As the first airline to introduce civil flight simulators in Taiwan, CAL has been equipped with various types of simulators for flight training for more than 37 years. In addition to simulating various adverse weather conditions, simulators can incorporate a variety of emergency situations for constant simulation training regardless of weather, air traffic, or airport environment. They can also display tolerance limits of aircraft designs and carry out training for any possible extreme and dangerous situations without incurring any risk in the exercise. The training process can also be recorded as a basis for review and improvement for flight technology and expertise.

CAL's flight simulators and ground / water escape training facilities have been certified by international aviation administrations. The flight simulators are available provided for domestic and international training. CAL will continuously invest in and upgrade training equipment to ensure flight safety.

3. Comprehensive Training System

The Integrated Pilot Training System (IPTS) was launched since 2014 to comprehensively E-training records and integrate training course information. In 2018, 478 CAL flight crew have participated in a variety of short-term and long-term training courses, 465 of whom completed training. In addition, in response to the introduction of an automatic scheduling system (AIMS) in 2019, CAL has undertaken IPTS integration to ensure the effective use of training resources.

Health and Emotional Management

CAL sets strict standards not only for pilot training, but also for pilots' health and emotional management. To prevent and reduce the physical and mental stress of pilots in long-haul flight missions, CAL adopts proactive planning, crew feedback and prediction in crew roster management and sets requirements higher than statutory ones so that all flight crew members are fully ready for each flight mission.

1. Life Management

In addition to strict training and requirements based on the highest standards of safety, CAL also manages the physical and mental health of flight crew to ensure the safety of each flight mission. To prevent and reduce the physical and mental stress of pilots in long-haul flight missions, CAL sets requirements higher than statutory ones so that all flight crew members are fully ready for each flight mission.

2. Stress and Health Management

To enhance flight crew's awareness of stress issues, human factors and crew resource management (CRM) are included in flight crew training and retraining courses. For the flight crew, appropriate stress can improve the quality of work, but excessive stress can affect attention and emotional issues. In view of this, the perception of personal stress is especially emphasized in training course, and problem solving and emotional regulation are proposed for the flight crew to choose as the most appropriate way to deal with the stress. CRM training provides the concepts of teamwork and workload management to help flight crew properly face and deal with the stresses caused by bad weather, schedule delay and any unexcepted situation. CAL provides free mental health care service, who can work with flight crew to find feasible solutions in their daily life.

3. Alcohol and Drug Management

CAL attaches great importance to flight safety management through established strictly regulations and test procedures to prohibit the use of alcohol and drugs. This includes alcoholic beverages and foods containing alcohol, as well as narcotic drugs and other drugs that may affect the normal performance of employees. CAL flight crew are not allowed to drink alcoholic beverages prior 12 hours to a flight, and CAL use alcohol testing to ensure that they are not affected by alcohol during the duty period. Since April 10, 2017, CAL has conducted alcohol test for all flight crew in accordance with the regulations of the Civil Aeronautics Administration.

Proactive Planning

- Monthly discuss and review next month schedule with fleet team.
- Better terms for flight crew's dispatch and rest time.
- If performed a mid-night flight, the maximum duty hour is reduced 2 hours.
- Each cockpit crew team is dispatch by their value of experience.
- Keep monitoring the regional mid-night flights operating situation.

Crew Feedback

- Referring crew fatigue feedback to adjust flight schedule, crew dispatch or on ground as appropriate.
- Flight dispatchers must immediately adjust the schedule of flight crew if reported fatigue or ask sick leave.

Prediction

- Floating adjust the number of crew on each flight by seasonal and off-seasons.
- Crew dispatch and dispatch conditions for new route is beforehand evaluated by fleet team.



Inflight Monitoring and Control

Our System Operation Control Division operates 24 hours per day to monitor the status of our flights and ensure their safety in real time, by utilizing various communication tools and internal mobile platforms. Wherever our flights may be, all factors that may affect them are closely monitored, including weather conditions and incidents of disaster. Furthermore, crew in flight are provided with real-time updates through ICAO 4D / 15 tracking on hazards like volcanic ash, typhoons, turbulence, and emergency response plans. Meteorologists are also employed for weather forecasts for each station, facilitating flight operations and ensuring flight safety. In terms of airport monitoring, ground monitoring software / hardware is upgraded to connect with air traffic radar and CCTV, so as to monitor the status of flights in real time is benefited to improve flight on-time performance.

Maintenance Quality

Ensuring the quality of maintenance is our fundamental commitment for flight safety. CAL proactively manages aircraft conditions through the Reliability Control Program. Various abnormal and technical parameters and information arising from the normal daily operation of aircraft are collected and analyzed to formulate the most appropriate maintenance strategies and plans to maintain the reliability of aircraft systems, improve maintenance quality, and enhance flight safety.

Professional Maintenance & Repair Capabilities

Our Engineering and Maintenance Organization has been certified as a repair station by 11 countries and regions, including the EU, the United States, and China. CAL has become the largest modernized aircraft repair center in Taiwan, with modern hangars that accommodate five large wide-body aircrafts to perform heavy checks simultaneously, and with the engine test cell of a thrust run-up to 120,000 lbs, thereby supporting high-level aircraft maintenance. To expand maintenance service to the airlines in Southeast Asia and East Asia, CAL plans to apply and obtain repair station certifications from Thailand, the Philippines, and Japan in 2019.

China Airlines Technical Training Center

In response to rapidly growing demand for maintenance service at home and abroad, CAL was certified to establish the China Airlines Technical Training Center (CTC) in 2015. CTC is the first institution in Taiwan that is certified to provide aircraft type training for EMO and industry peers. In 2017, CTC also obtained certification from the Civil Aviation Administration of China. Since the foundation of CTC, a total of 117 courses have been offered and 1,344 students have been trained.

Quality Management System

To unify quality requirements in the aviation industry, in 2001 the International Aerospace Quality Group (IAQG) published AS9100 which is a widely adopted and standardized quality management system for international aviation industry. This system aims to continuously improve customers' satisfaction based on the cycle of Plan-Do-Check-Act (PDCA).

CAL has acquired ISO 9001 certification and continuously maintain the effectiveness of the system since 1996. In May 2017, the EMO (Engineering and Maintenance Organization) became the first repair station in Taiwan to be authorized by IAQG for AS9110. As AS9110's latest standard, AS9110:2016, was released in the second half of 2017, CAL improved its management system and workflow and successfully passed the verification by the IAQG in January 2018.

In October 2018, CAL had a tire puncture case and caused a temporary shutdown at Kaohsiung International Airport. According to the investigation result, CAL's flight and maintenance operations were in line and followed the manual regulations and procedures. This occasional case were caused from the maintenance manual provided by the aircraft manufacturer were incomplete, which caused the fault of the maintenance personnel in the subsequent maintenance procedures.

CAL always strictly implements SMS and flight safety management in compliance with the civil aviation regulations. After the incident, CAL made various improvements and required the aircraft manufacturer to modify the maintenance manuals to reduce the risks from flight operations, which has been recognized by the authority in charge of civil aviation.

Note: IAQG members include Boeing, Airbus, GE, and Rolls Royce. To manage and regulate the quality of suppliers, suppliers are required to comply with a series of established standards for the quality management system, including AS 9110.



2-1-2 Passenger Service (GRI 102-44)

Customer Relationship Management

Providing customer-oriented and quality service is the key to earn customer trust. CAL has established the quality policy and has designated a unit in charge of service quality control. Every year, the quality review meeting is held to set annual objectives and review service performance. Moreover, CAL has introduced the ISO 9001 Quality Management System to ensure the quality of service beyond passengers' expectations.

Service Quality Management Mechanism



Ahead of other domestic airlines, CAL has set up a variety of instant communication platforms for different groups of customers, including Facebook, Instagram, and WeChat, to offer solutions promptly to problems which customers encounter during their journeys, responding to customers' needs for improving passengers' travel experiences. To better understand customers' needs, CAL integrates all customer feedback through the Customer Service System (CSS) (44% of feedback provided via the Company's website and 56% provided in other ways) and related units in charge of cases will respond with a detailed explanation within a given time limit in the hope of becoming passengers' most trusted airline.

Traditional Communication Channels

- 1. Customer Service Hotline:** Customers can give feedback to our branch offices by our service hotline.
- 2. Regular Mail:** Customers can mail suggestions to our branch offices.
- 3. Suggestion Form:** While on board, customers can fill in the suggestion form and hand it over to a crew member or mail it to our Customer Relationship Department.

Online Communication Channels

- 1. Customer Service on Facebook:** Based on its digital marketing strategy, CAL has created a fan page on Facebook to understand customers' needs instantly, which expects to solve customers' problems and improve the service quality.
- 2. Customer Service E-mail:** Customers can send E-mails to Customer Service via the Company's website. Instead of calling, customers can simply use an E-mail to change a reservation or confirm their itinerary.
- 3. Customer Feedback:** Customers can give us feedback through the online feedback system.
- 4. Customer Satisfaction Survey:** Customers can take advantage of our standard online system to complete passenger satisfaction surveys.



Flood at Kansai International Airport (KIX)

On September 4, 2018, Typhoon Jebi struck Japan with howling winds and torrential rains, causing the tanker filled up with aviation fuel to drift from its anchoring point and hit the contact bridge of Kansai International Airport. This disrupted the bridge and further led to massive flooding. The airport closed two runways starting from noon the same day, and then shut down entirely at 3 pm. Thousands of passengers and staff were left stranded and unable to leave the airport. It was not until the next morning that the airport authority began to use high speed ferry to connect to Kobe Airport combined with the undamaged contact bridge to evacuate passengers by bus.

In response to the closure of the airport, CAL immediately canceled a total of 120 flights to/ from Osaka before September 14, and immediately released information regarding the flight change according to the contact information provided by the passengers. In addition, CAL continued to coordinate with the Osaka Branch Office of CAL and adjusted the aircraft size of flights to / from adjacent airports, such as Takamatsu Airport and Nagoya Airport, to help evacuate the stranded passengers.

To accelerate the evacuation of passengers, CAL announced that passengers who had changed to take a flight to / from Osaka before September 17 would be exempt from the change fees and that passengers changing to book other flights or take other flights to / from other cities in Japan would only have to pay the fare and tax differences. For passengers who had used outbound flight tickets, CAL also announced that they would be exempt from the fare and tax differences if changing to take other CAL or Mandarin Airlines flights from other cities in Japan before September 10.

During the closure of the airport, all units of CAL (such as the Passenger Sales & Marketing Division, Cargo Sales, Market, Service Division, Ground Service Division, In-flight Service Supply & Marketing Division, and EMO) continued to share information through the internal communication platform and provide the most immediate assistance, and keep abreast of the latest operations of the airport. After the airport resumed operations, they continued to assist passengers in evacuating from the airport to Taiwan.

Customer Protection

[GRI 206-1, 418-1]

Privacy Protection - Protecting Customers' Rights and Interests Matters to CAL

CAL attaches great importance to customer privacy and regards it as a basic principle of service. In 2014, CAL established the Personal Information Management Committee and set its [Information Security Policy](#), which addresses the collection and use of information, rights of customer information, privacy/safety statement and information confidentiality. CAL has also introduced personal information management systems, such as the ISO 27001 Information Security Management System and the BS-10012 Personal Information Management System, to enhance its personal information management.

In response to the General Data Protection Regulation (GDPR) that took effect on May 5, 2018, CAL established the DPO team and appointed a Data Protection Officer (DPO) in 2017. CAL discloses the personal information policy on the CAL official website and fully strengthens employees' awareness on information protection and its code of conduct through SOP review, personal information inventory, and training. CAL is dedicated to protecting customers' personal information. As of 2018, CAL has completed the risk assessment of personal information at each division/ department. In the future, CAL will continuously protect customers' personal information to increase its competitive advantage and customer trust.



Information Security Policy



EU's General Data Protection Regulation (GDPR)

History of GDPR

In recent years, the rapid development of social media, cloud computing, portable devices, mobile Internet, and Big Data has brought new issues and challenges for personal information protection. Enterprises also face impacts from politics, information systems, and different cultures. On April 27, 2016, the European Parliament approved the General Data Protection Regulation (GDPR), which took effect on May 25, 2018, to protect the processing and free circulation of personal information.

Importance to CAL

The GDPR is a data-based regulation. Whether or not the premises are located in the EU, enterprises, regardless of scale, are required to collect, use, or process personal information of EU residents in accordance with the GDPR when providing products or paid or free services across borders.

CAL Progress

CAL is dedicated to protecting customers' personal information. In response to the GDPR, CAL has taken the following actions to improve customer privacy and customer trust. As of 2018, CAL has completed the risk assessment of personal information at each division / department. In the future, CAL will continuously maintain this high standard of privacy protection.

Response

1. Set up crisis management mechanism for leakage of personal information
2. Set mandatory requirements for audits and retention of personal information
3. Make public the processing of personal information on the Company's website
4. Set up the mechanism to strengthen customer rights
5. Process personal information legally and obtain consent from customers
6. Review information processing contracts
7. Design privacy protection plan
8. Set up the accountability framework



Customer Health and Safety

Food Safety

To ensure food safety and environmental sustainability, CAL requires catering service providers to strictly comply with international safety and health standards and have safety management mechanisms set up for in-flight meals. This covers each process from preparation, storage, and transportation at a standard temperature. Microbiological examinations are required for all products, materials, and food equipment. In addition, quality audits are carried out from time to time, and aimed at requesting catering service providers to correct non-conforming items within given time limits. If these conditions are not met, penalties will be imposed in accordance with their contracts. Training courses are also organized regarding HACCP and catering services, in order to increase employees' awareness of food safety and quality.



International Certification for In-Flight Meals



ISO 22000



HACCP



Halal, JAKIM









In-flight Potable Water Safety

The quality of potable water is also an important part of a premium customer experience. The quality of drinking water is strictly controlled by our industry-leading in-flight potable water management procedures, which are stricter than the environmental regulations and bottling facility sanitation regulations.

- The safety of potable water is included in the preliminaries of new destinations
- CAL sets high safety standards for our potable water suppliers and performs inspections annually
- CAL conducts safety audits on potable water at outstations
- CAL implements a maintenance plan for potable water facilities according to the manufacturer manual

2-1-3 Cargo Service

Four Cargo Services

 	 	 	 
<p>Introduction:</p> <p>With Express, you will get the premium express freight service and handle with money back guarantee. China Airlines handles Equation shipment with top priority from acceptance to delivery, and guarantees boarding on the first available flight.</p>	<p>Introduction:</p> <p>Customized offers you a complete, top quality solution. Designed to meet your requirements, it is a perfect scheme among Shipper, Freight Forwarder and China Airlines Cargo where can work together.</p>	<p>Introduction:</p> <p>This is a specialized solution for special cargo with experience, attention and expertise who can transport to anywhere you want. For every situation, we ensure Variation can fulfill all special handling requirements and arrive at the final destination quickly and safely.</p>	<p>Introduction:</p> <p>This general cargo solution is an airport to airport service with economic and reliable ways to manage your goods. In principle, General is applicable to all kinds of general cargo without requiring any special handling.</p>
<p>Advantages:</p> <ul style="list-style-type: none"> • Airport to Airport express service • Top priority for load planning • The latest possible booking • The earliest pick-up time • Extensive worldwide network • Money Back Guarantee 	<p>Advantages:</p> <ul style="list-style-type: none"> • Humanitarian and Relief • Heavy and outsize cargo • Stage equipment • Oil and gas • Automotive • Factory equipment • High value commodities • Dangerous goods 	<p>Advantages:</p> <p>To ensure your special cargo is safe, we have the expertise and the capacity to get any shipments with special handling that can transport to anywhere you want. We have Variations for Precious Artwork, Heavy & Oversize Shipments, dangerous goods, perishable goods, live animals, pharmaceutical products, valuable goods, and all types of vehicles. Each of Variation is tailored to fit the specialized handling and loading procedures, as well as guarantee reliable service from our staff.</p>	<p>Advantages:</p> <ul style="list-style-type: none"> • 24/7 on-line track and trace • Standard drop-off and delivery times at each station

Quality Cargo Service

CAL is one of the world's largest airlines with a same-type freighter. According to IATA statistics in 2017, CAL's international air cargo ranked among the world's top 10 and stood as Taiwan's number one carrier. CAL improved revenue management through price differentiation, cabin bidding, and special cargo projects. As for special cargo transport such as engine materials, temperature control cabinets, and precision equipment, CAL is the industry's first choice. In the future, CAL will continue to optimize cargo service and provide a better quality of service for cargo customers.

1. Special Cargo Service

CAL freighters fly around the world and have a wealth of experience in carrying general goods, precision instruments, large equipment, precious antiquities, live animals, and other special goods. 744F aircraft with a larger capacity and the character about opening the nose cone is used to carry specially-sized goods which increase the revenue of cargo transportation for CAL. Moreover, CAL has also established carrying specifications that are even more stringent than IATA regulations. For example, IATA does not include some lithium battery products in its scope of dangerous goods, but CAL still requires the owners of such goods to report them and safely deliver them under the supervision of the responsible personnel.

In addition to general cargo and parcels, CAL often helps transport critical national cultural relics and relief supplies. With its diverse experience in transportation and excellent quality of service, CAL has promoted cultural exchanges between Taiwan and other countries.

2. Upgraded Cold Chain Service

In response to increasing demand for air transport of temperature-controlled goods (such as pharmaceuticals, vaccines, and high-grade chemicals), CAL significantly improved its cold chain service in 2018. This included transportation of temperature control containers, SOP for active / passive temperature-controlled cargo, and upgraded refrigeration / freezing equipment. In addition, CAL also actively promoted the certification of

IATA CEIV Pharma to enhance the quality of service through international certification. In the future, CAL continues to introduce customized, refined cold chain service to provide diversified and quality temperature-controlled cargo service for customers around the world.

3. Cargo Safety Management

CAL has strengthened risk management measures such as an Aviation Quality Database (AQD), cargo service management platform, ground damage database, and abnormal weather reporting mechanism. It has also established a risk prevention mechanism by using Aviation Quality Database Risk Review (AQD RR) for safety risk management (SRM). In addition, CAL has implemented Management By Walking Around (MBWA) to strengthen warehouse and apron management. Through a quality questionnaire, the Company has improved its quality of service based on feedback provided by ground handling agents (GHA).

4. E-Air Waybill

CAL continued to promote the e-air waybill and exchanges information with contractors through EDI (Electronic Data Interchange), which could reduce the operating costs of airlines and contractors, avoiding delays caused by input errors and missing documents. According to the latest e-AWB penetration rate released by IATA in 2018, CAL achieved its annual target ahead of schedule and ranked among the world's top 10 airlines. In 2018, CAL continued to carry out paperless operations and use e-air waybills for cargo service to / from Hong Kong, Singapore, Frankfurt, and the Americas. Starting from 2019, the use of e-air waybills will become the standard for Taiwan's air cargo industry in line with IATA's announcement to fulfill environmental sustainability.

5. Apron Mobility

Through wireless transmission, all cargo information and loading statuses are instantly transmitted to mobile devices, and the back-end management platform is used to control the status of goods after the goods are delivered until the goods are properly loaded according to the aircraft load balance plan. The apron mobile system has been launched since 2017. Starting from August

loading. Before the launch, ground handling agents were trained and the programs and procedures were modified based on the test results to avoid loading errors and omissions. By continuously improving and implementing the system functions and using the handheld mobile device as a channel of communication with ground handling agents, CAL has reduced the idle time of field supervisors and improved the productivity of the freight service personnel.

6. Professional Training

To improve quality of service, CAL organizes professional training courses cargo service for personnel engaging in operations, marketing, booking, planning, development, and revenue, and from cargo-related units at the airport on a regular basis. Since 2016, advanced training has been provided for outstation cargo supervisors to ensure that goods are well-managed and professionally handled throughout the process of transportation. For the transportation of special goods, CAL has also trained professional handlers and established operational regulations to provide safe and professional transport services. For other non-cargo related units, each unit organizes training courses on dangerous goods on its own.

7. Embargo on Illegal Animals and Plants

To implement the sustainable development of both the industry and the environment, CAL supports IATA sustainability promotion and UN's Sustainable Development Goals to sign the, which makes four commitments: "Expression and demonstration of agreement to tackle the illegal wildlife trade", "Information sharing and detection", "Practical measures to stop the transportation of illegal wildlife products", and "New mechanisms tackling illegal wildlife trade."

2018 Achievements

1. Member of IATA Nominating Committee

IATA is the world's largest aviation industry organization, with a market share reaching 82% of the global aviation market. Its main business is to establish standards and procedures for aviation business operations, supervise national aviation regulations and industrial development, express its views to international organizations and government authorities, and handle financial clearing and employee training among airlines. Brought to a successful close in Sydney, Australia, the 74th IATA Annual General Meeting selected CAL as one of the top 10 members of the IATA Nominating Committee. CAL thus stood out as the only Taiwanese airline on the Nominating Committee.

2. 8th Time to Pass IATA Operational Safety Audit (IOSA)

As a unified safety certification promoted by IATA, the IATA Operational Safety Audit (IOSA) currently stands as the highest safety audit standard in the international aviation industry. Since its first certification in 2005, the Company has obtained the IOSA certification eight times. With this certification, CAL expects to ensure flight safety and provide quality and reliable services for passengers. With its constant insistence on flight safety, CAL holds a zero tolerance stance on flight safety issues and continuously implements IOSA and international requirements to ensure that all safety measures comply with the highest international standards.



3. Flight Safety Training

To strengthen the employees' awareness of flight safety company-wide, CAL organized the first flight safety education fair to promote flight safety and SMS and state CAL's attention to the safety of passengers. The contents of the education fair included the introduction of SMS, records of flight safety, and reviews of flight safety activities. CAL also invited the authority in charge to share the civil aviation regulations and practices and changes in the overall environment to enhance the employees' knowledge of SMS and aviation regulations.

4. On-time Performance

- **On-Time Performance:** According to statistics provided by the Civil Aeronautics Administration, the average 15-minute on-time performance rate of CAL in 2018 was 86.99%, 8.99 percentage points higher than the KPI (78%). For 2019, the 15-minute on-time performance rate is set at 82% to provide passengers with better service.
- **Reliability:** The reliability rate for passenger flights exceeded 99% in 2018.
- **Enhancing the Flight Control and Surveillance System:** CAL provides each branch with real-time aircraft and ground parking status as well as accurate flight information through the self-developed surveillance system, which improves CAL's punctuality and quality of service.

5. Diversified and Customized Passenger Transport / Freight Service

Dynasty Package has established a good reputation in the industry after more than 20 years. In 2018, Dynasty Package focused on 12 popular destinations for Taiwanese and independent tours in Taiwan for 31 cities worldwide. To meet the diversified needs of tourists, CAL continued to form alliances with different industries and launched multi-themed tourism initiatives, such as sightseeing buses, Japan Rail Pass, hot springs, the Taichung World Flora Exposition, and popular concerts at home and abroad.

In terms of cargo transport, CAL expanded its charter business based on the needs of individual customers. In 2018, CAL completed 159 charter flights, an

increase of 43 flights from last year. This included weekly charters between Taipei and Columbus, Ohio; charters between Hong Kong and Los Angeles/Chicago; and charters between Asia and the US; as well as a charter for Bruno Mars's concert equipment and the UPS charter between Hong Kong and Louisville / Chicago. This fully demonstrated the strength of CAL's Boeing 747 freighter. To provide more choices for customers, CAL cooperated with 165 airlines worldwide on air freight in 2018. Such cooperation with other airlines and their networks created a win-win situation for CAL and its customers.



CAL Chosen to Transport National Satellite "Formosat-7" to U.S. Launch Site for the Fifth Time

6. Highly Recognized Professional Transportation Service

With a wealth of experience in presidential aircraft operations and excellent air / ground service, CAL was selected as the presidential aircraft for the President's visits to Eswatini, to Paraguay and Belize, to the Vatican, and to the APEC Economic Leaders' Meeting held in Port Moresby, New Guinea in 2018. With the most professional service and the best flight crew, CAL is proud to provide the President and VIPs safe and comfortable journeys.

7. Enhanced Professionalism of Flight Attendants

In 2018, cabin service satisfaction levels reached record highs. We have integrated the concept of “Back to Original Intention” among our annual training themes of accountability, management, and discipline. Air service training emphasizes passion, discipline, caring, and action. CAL plans to extend its VR / AR flight attendant training program to each aircraft type, and will design a virtual assistant through AI to strengthen the professionalism of flight attendants.

8. Upgraded Airport Service

Taoyuan International Airport Corporation established 26 self-service bag drops in Terminal 2. CAL ground staff assisted passengers in using the self-service bag drop to accelerate passengers' customs clearance and optimize the quality of service at the check-in counter with reduced passengers. To improve passenger experiences, CAL renovated and reopened the VIP lounge at Terminal 2. Featuring Oriental aesthetics and Chinese cultural features, the VIP lounge provides Chinese and Western specialties and Taiwanese light meals in the hope of delivering a traditional culture of elegance and delicacy with Taiwanese characteristics.



CAL VIP Lounge Featuring Oriental Aesthetics

9. Outstanding Customer Satisfaction

Providing professional service is CAL's commitment to customers. CAL communicates with customers through the annual in-flight passenger survey, freight service satisfaction survey, and maintenance service satisfaction survey and reviews the results of the surveys as a basis for improvement and advancement. In 2018, the satisfaction rates of passenger transport, and EMO were up to the objectives. However, the reason why cargo satisfaction rate did not meet the objective was because of abnormal climate conditions, such as the flood at KIX, heavy snows at JFK and ORD, and an earthquake at CTS, caused underperformance in overall cargo customer satisfaction. Please refer to the [Appendix-Customer Satisfaction Table in 2018](#) for more information.

What's Next

1. Enhance safety training and implement MBWA and SMS decisionmaking tools to improve employees' awareness of flight safety and safety performance.
2. Organize upset prevention and recovery training (UPRT) to make flight crew proficient in various flight conditions and improve the safety of passengers during their journeys.
3. Continuously improve the on-time performance of flight, enhance the professional knowledge of the aircraft control personnel, and strengthen the emergency responses to ensure the safety of passengers and the quality of service.
5. Implement the personal information management system to protect customer privacy and create customer trust.
6. Continuously promote the VR / AR flight attendant training program and design a virtual assistant through AI to strengthen the in-flight service and broadcasting.
7. Plan baggage tracking service to reduce delay, damage, or loss of baggage and improve the efficiency of baggage handling.

2-2

Human Resources

HIGHLIGHTS



115 people with disabilities employed

CAL was the only company in the industry to receive the Golden Wingspan Award. CAL employed 115 people with disabilities.



TWD 16.78 billion

Invested in salary and benefits.



TWD 295 million

Expenditures on employee training.



99.20% participation

Rate of employees' participation in labor unions.

Management Approach [GRI 103-1, 103-2, 103-3]

■ Importance of Material Issues

We view our employees as family. We are always willing to communicate with respect and strive to reach a mutual understanding through negotiation. We endeavor to create a more harmonious work environment based on an equitable, cooperative, and mutually respectful relationship. In such a work environment, labor and management reach a consensus through open, transparent negotiations and are more willing to communicate on collective agreement issues.

Commitment and Long-Term Goals

Commitment

We view our employees as our most valuable assets. CAL has improved and optimized working conditions and the working environment to establish a safe and growing workplace. CAL respects each individual labor union and communicates on their stated demands with empathy, views the labor rights of every employee as our first priority, and gives the same level of respect and resources to all labor unions with neutrality.

Apart from regular labor-management meetings held by the Head Office and the China Airlines Employees Union (CAEU), a number of functional committees formed by the management and CAEU have been established. CAL follows up and reports the results of follow-ups in the following meetings. CAL is dedicated to maintaining harmonious labor-management relations through open, efficient channels of communication, hoping that both the management and employees can work together to achieve equality and reciprocal outcomes.

Long-term Goals



2020

1. Organizing eight expert seminars that provide an opportunity for internal cross-disciplinary networking
2. Establishing CAL's aviation management talent pool
3. Percentage of female manager reaching 24.5%

2025

1. Completing the establishment of all internal online training materials in various professional fields
2. Establishing the optimal learning path of CAL's aviation management talent pool
3. Percentage of female manager reaching 25%

2030

1. Applying to Taiwan's aviation talent development
2. Promoting Taiwan's aviation talent development
3. Percentage of female manager reaching 27%

Unit in Charge

Corporate Sustainability Committee-Human Resources Task Force

Management Mechanisms

- The meeting of Corporate Sustainability Committee, at least twice every year
- The Human Resources Task Force reports to Corporate Sustainability Committee, every quarter
- A labor-management meeting, every quarter on a regular basis
- The meeting of Occupational Safety and Health Committee, every quarter on a regular basis
- A personal information protection management review meeting, every year on a regular basis

Objectives and Plans

Issue	KPI	2018			2019 Objectives
		Objectives	Performance	Achievement	
Occupational Safety and Health	Reduce the Frequency-Severity Indicator (FSI) by 5%	FSI 0.44	FSI 0.26	100%	FSI 0.42
	Pass the certification of occupational safety-related management systems	CNS 15506 review	Pass the CNS 15506 review	100%	Pass the certification of ISO45001 and CNS45001
Labor-management Relations	Convene labor-management meetings	4 times	9 times	100%	4 times
Labor Rights	Rate of participation in labor unions	98.20%	99.20%	100%	98.20%
	Convene seminars on sexual harassment prevention	Organize online training courses and expand the scope of training	1 online	100%	1 on-site

Note 1: Frequency-Severity Indicator (FSI) =√[(Disabling Injury Frequency Rate,FR)× (Disabling Injury Severity Rate,SR)÷1,000]
 Note 2: 2015-2017 averages in the air transport industry published by the Ministry of Labor: FR=4.92, SR=438, and FSI=1.47.

Grievance Mechanism

- Employee Relationship Department: Human Resources Division –
 E-mail: wecare@china-airlines.com



Stakeholder Contact

2-2-1 Human Rights Management Framework

[GRI 406-1, 412-1]

To enforce the idea of human rights, CAL has established its human rights policies and related measures based on the UN Guiding Principles on Business and Human Rights, international trends, and local laws / regulations. CAL’s human rights policies apply to CAL Group members and suppliers. The Human Resources Task Force under the Corporate Sustainability Committee is responsible for the management of human rights mechanisms.

CAL identifies human rights issues to control and monitor the risk related to human rights. In 2018, the Human Resources Task Force identified material human rights issues through the questionnaire. Based on 238 valid questionnaire responses, a matrix for material human rights issues was created and four material human rights issues were identified. Subsequently, the Company reviewed the human rights management framework for CAL and its value chain, including human rights policies, procedures for identifying material human rights issues, and mitigation and corrective measures. At the same time, the Company conducted due diligence to implement human rights management mechanisms.



China Airlines Human Rights Policy

Regulations and Procedures on Human Rights



Employee Code of Conduct

Employees should support company policies on human rights, fairly treat and respect for every employee, avoid infringing on the rights of others or become accomplice to human rights abuses. We not only implement policies to protect the human rights of employees, but has also established a management mechanism to ensure employee care. We do not use forced labor. We do not adopt race, gender, age, family, political affiliation or religious beliefs as the criteria for employee assignment, performance evaluation or promotion.



Human Resource Manual / Employee Complaints Regulation / Sexual Harassment Complaints and Disciplinary Actions Regulation

- Proclaimed employee human rights protection includes basic stipulations, freedom of employment, humane treatment, and prohibition of discrimination or sexual harassment.
- In March 2016, one sexual harassment prevention seminar discussion was held, and 98 employees participated.
- In October 2017, one sexual harassment prevention seminar discussion was held, and 67 employees participated.



Corporate Social Responsibility and Sustainable Development Best Practice Principles-Child Labor Prohibited

Hiring people younger less than 16 years old is strictly prohibited to fully compliant with legal minimum age for employment. To safeguard the physical and psychological health and safety of employees whose age are below 18, hazardous assignments are strictly prohibited.



Supplier Code of Conduct

Human rights standards were specified in the Supplier Code of Conduct include :

1. Prohibition of child labor
2. Anti-discrimination
3. Remuneration and working hours
4. Freedom of labor
5. Respect for freedom of assembly and association, and the right to collective agreement



Anti-discrimination Policies and Courses

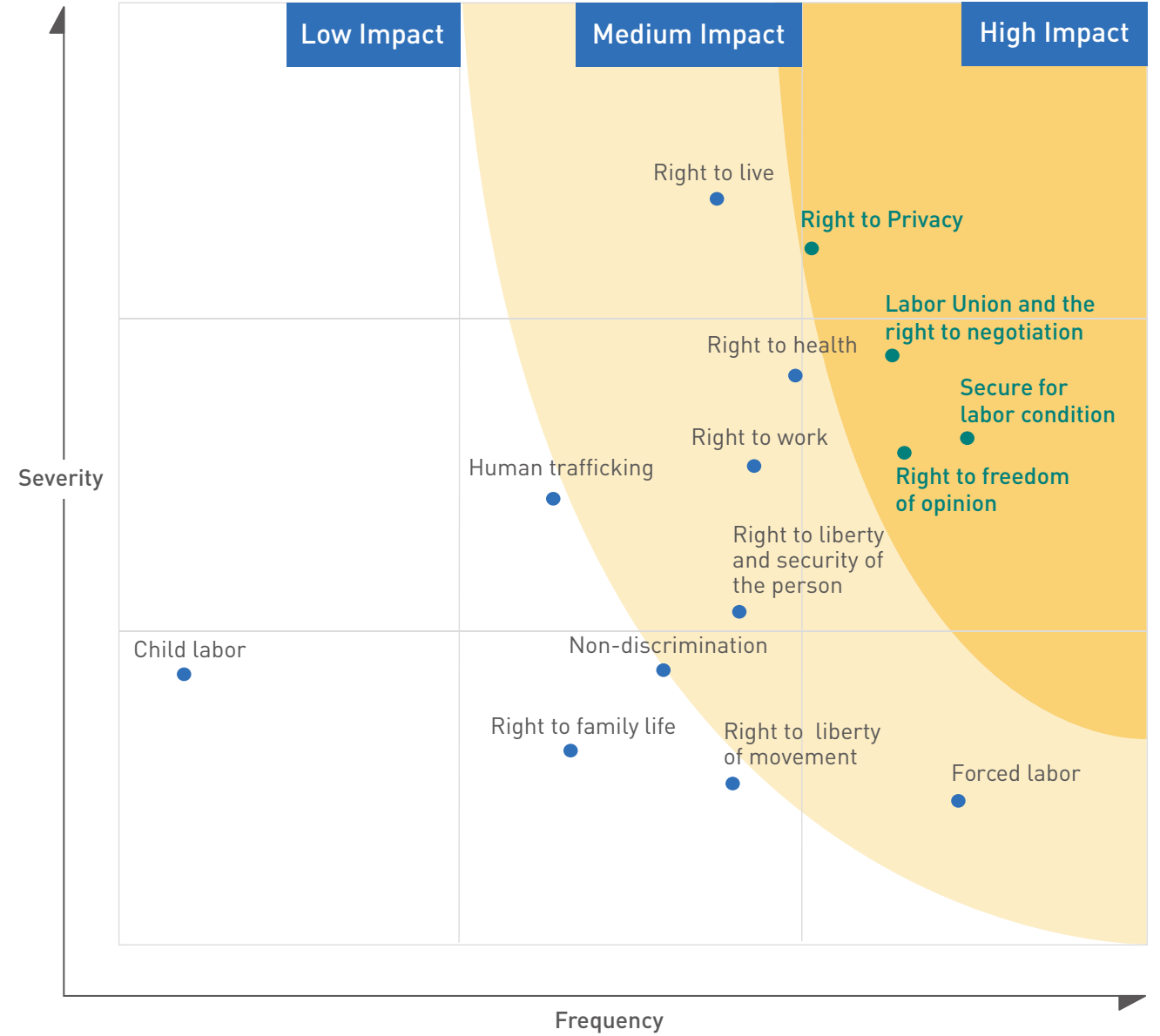
Front-line staff must attend non-discriminatory policy courses for boarding passengers with physical and mental disabilities to ensure the interests of passengers.

In addition to complying with the CAL Group's human rights policies, Mandarin Airlines and Tigerair Taiwan have incorporated management measures for equality and anti-discrimination and whistle-blowing channels into their regulations and organize training on a regular basis. In 2018, 67 employees of Mandarin Airlines attended a seminar on sexual harassment prevention. In December 2018, Tigerair Taiwan organized an online training course on the CAL Code of Conduct for all employees.

Procedures for Identifying Material Human Rights Issues



Material Human Rights Issues Identified



Mitigation and Corrective Measures for Material Human Rights Issues

CAL continues to align its influence on human rights based on international standards. To ensure a complete human rights management framework, CAL implements due diligence in accordance with the UN Guiding Principles on Business and Human Rights, reviews the compliance of human rights management, and proposes improvement actions in management mechanisms. After conducting due diligence, CAL found that all mitigation and corrective measures of the value chain were set under risk controls in 2018 except for inapplicable ones. Corrective measures were also taken for events pertaining to material human rights issues. For information on mitigation and corrective measures set in 2018, refer to the Appendix "[Management of Material Human Rights Issues in 2018](#)."

The CAL Group bases human rights management mechanisms on its human rights policies to show its determination to mitigate human rights risks and implement human rights management. The human rights risk management of CAL and its value chain is described by subject as follows:

Employees

In terms of employee privacy, CAL has established the personal information management system, set up the Personal Information Management Committee, and formulated standard operations such as collection, handling, management procedure, and emergency response procedure of

personal information, to manage and maintain personal information and files as well as reduce potential impacts arising from breaches of personal information. In addition, CAL set up the DP Office and the Data Protection Officer (DPO) in response to the EU General Data Protection Regulation (GDPR) which took effect on May 25, 2018. To enhance employees' awareness of personal information protection, CAL regularly organizes relevant training. In 2018, 85% of CAL employees attended on-the-job training courses on the EU's GDPR and on personal information inventory and GDPR e-Learning.

CAL offers labor conditions that are in line with or more than those specified in the law. CAL has also established several functional committees which employees partake in to review infringement on rights and interests of employees and follow up improvements, so as to protect the labor conditions of CAL employees.

Unless otherwise prohibited by the labor union charter, each CAL employee is a member of the corporate labor union and may participate in labor union affairs or be directly elected as a union officer. CAL also holds labor-management meetings with the corporate labor union on a regular basis. Employees may also join external labor unions as they wish. Moreover, we are open-minded to negotiate with external labor unions.

As for right to freedom of opinion, CAL has set up a variety of communication channels such as labor-management meetings, an employee

care mailbox, a sexual harassment mailbox with an associated grievance hotline, "Suggestions" section, and employee communication mailbox. It has also set up internal company messaging software, Team+, for employees to express their opinions and make suggestions at any time. If the rights and interests of employees are infringed or they treated improperly, employees may file grievances according to CAL's Employee Grievance Regulations. Employees who disagree with the outcomes of their grievances may appeal to protect their rights and interests. In 2018, most of the 24 grievances filed by CAL employees, including three demands, were about concessional flight tickets and all grievances were reviewed and closed. As of December 2018, one case concerning verbal violence and one case concerning ground staff shifts were filed by Tigerair Taiwan employees.

Employee Grievance Case from 2016 to 2018

Item	2016	2017	2018
Performance Review	3	2	5
Concessional Flight Tickets	5	19	10
Leave of Absence	1	2	2
Disciplinary Actions	1	3	5
Occupational Disasters	0	0	2
Total	18	28	24

Employee Grievance



- CAL Employee Grievances
E-mail: wecare@china-airlines.com
- CAL Grievances against Sexual Harassment
TEL: (03) 399-8922
E-mail: SHC@china-airlines.com



- Mandarin Airlines Employee Grievances/Grievances against Sexual Harassment
TEL: (02) 2514-2050
E-mail: SHC@email.mandarin-airlines.com



- Tigerair Taiwan Employee Grievances
E-mail: talktome@tigerairtw.com
- Tigerair Taiwan Grievances against Sexual Harassment
TEL: (02) 7735-6930
E-mail: talktome@tigerairtw.com

Improvements and Follow-Ups

Every year, CAL holds training courses and seminars on sexual harassment prevention for new and current employees. It also publishes teaching materials on the intranet for all employees for promoting sexual harassment prevention in the workplace. Beyond this, we place posters in the standby office of frontline employees to introduce definitions and categories of sexual harassment as well as whistle-blowing channels. When there is a suspected incidence of sexual harassment, employees can file grievances via the Company's mailbox, hotline, or e-mail. If the perpetrator of the incident is a CAL employee, the Human Resources Division will investigate within seven days after receiving the grievance, and form a Complaint Review Committee with at least 50% of its members being female. If the incident is defined as a case of sexual harassment, disciplinary actions or other measures will be taken; and, depending on each incident, psychological counseling may be arranged for both the perpetrator and the victim. If the perpetrator of the

incident is not a CAL employee, CAL will assist the victim with legal aid. CAL will continuously protect employees from sexual harassment and create a friendly work environment. Mandarin Airlines has published a statement about the ban on sexual assault and harassment and posted information on sexual harassment prevention on the EIP website. An annual report on grievances regarding sexual harassment is made by the end of every year for follow-up. Besides Mandarin Airlines, Tigerair Taiwan also takes sexual harassment seriously. Every new employee of Tigerair Taiwan is required to complete the training course on regulations concerning sexual harassment prevention and grievances through the regulations which disclosed on the employees' public portal.

In 2018, two incidents of sexual harassment were reported by CAL employees and all incidents were handled according to the law and CAL's internal regulations. No incident of sexual harassment was reported at Mandarin Airlines. As for Tigerair Taiwan, one suspected incident of sexual harassment was reported by employees and Tigerair Taiwan immediately formed a board of investigation and interviewed the parties and people concerned through the meeting. During the investigation, all related parties signed the confidentiality agreement. The investigation was not made public in order to protect all people involved in the investigation. After investigation, the board of investigation resolved that the case did not meet the requirements constituting sexual harassment and thus the case was not established.

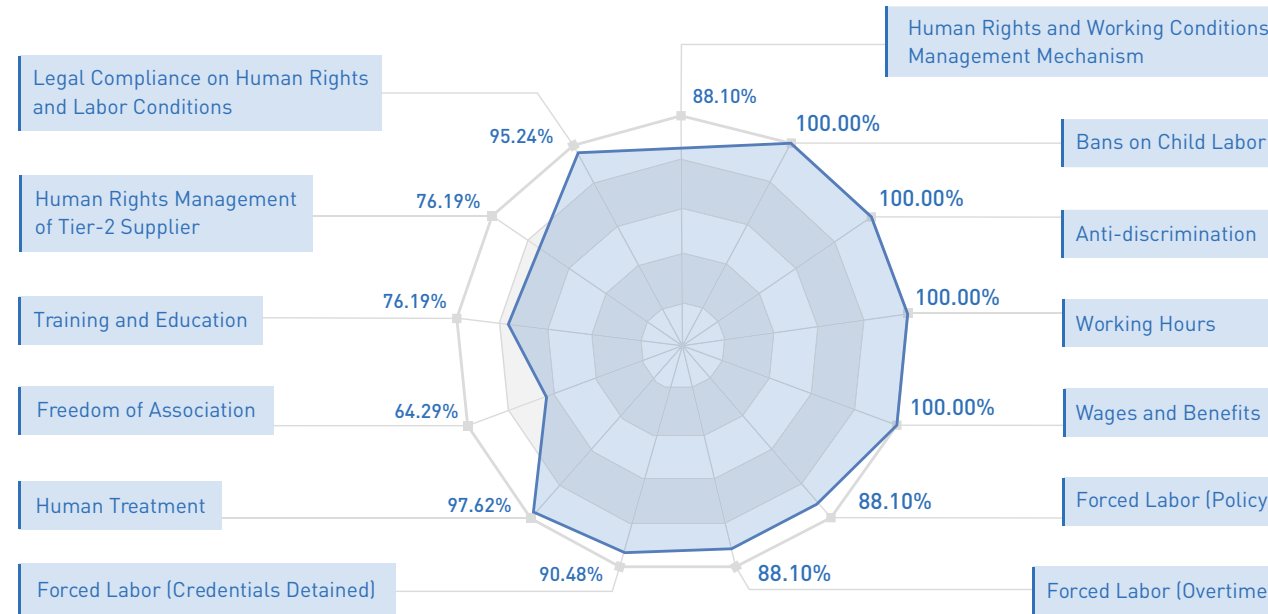
Grievances against Sexual Harassment from 2016 to 2018

Item	2016	2017	2018
Number of Grievances	1	4	3
Number of Filing	1	3	2
Category	Physical	Physical	Improper behavior
Outcome	Administrative disciplinary action	Administrative disciplinary action	Administrative disciplinary action

Suppliers

CAL implements the supplier management mechanism in accordance with the Supplier Code of Conduct. All four material human rights issues identified in 2018 are included in the existing Supplier Code of Conduct. In 2018, human rights were included in the SAQ for tier-1 critical suppliers. Among 42 suppliers responding to the SAQ, 37 suppliers reported the established mechanism for managing labor conditions and human rights, accounting for 88.09%, and 76.19% of the suppliers included issues relating to human rights, such as prohibition of child labor, prohibition of forced labor, anti-discrimination, freedom of association, and statutory salary and working hours, in the requirements for their upstream suppliers. The suppliers of CAL had the established mechanisms for managing issues relating to human rights, such as prohibition of child labor, anti-discrimination, working hours, and salary and benefits, and complied with the basic statutory requirements; however, 64.29% of the suppliers lacked the management mechanism for freedom of association, and 76.19% of the suppliers lacked training on human rights. In the future, CAL will fully assist suppliers in improving their compliance through its supplier management mechanism.

Labor Conditions and Human Rights Risk Analysis of Supply Chain Sustainability in 2018



Customers

Customers can express their opinions or suggestions through the official channels provided by CAL. An external consultation team has been engaged as the project consultant to introduce personal information protection mechanisms. CAL has also established its Personal Information Management Committee to maintain and manage personal information. In 2018, CAL conducted a risk assessment for all of its primary divisions; in addition, its website has disclosed its Information Security Policy covering collection, use, acquisition, or changes of customer information as well as an amendment to the privacy / information security statement and the Company's commitment to information protection.



Material Human Rights Issues in 2018

A total of 21 appeals by the Taoyuan Union of Pilot (TUP) were not settled by mediation on June 27, 2018. The TUP then held a press conference to announce a strike vote. CAL showed its good intentions and invited the TUP to renew the collective agreement; however, a consensus was not reached. After mediation by the Taoyuan City Government (Taiwan), both parties reached a consensus on August 30, 2018 and agreed on a year of rational negotiations instead of a strike. After six rounds of negotiation, however, the TUP still decided to express its appeals by going on strike. During the strike, CAL worked with authorities in charge to discuss the appeals made by the TUP based on the principles of respect and minimum impact on passengers and society. After four meetings, multiple parties finally reached a consensus and entered into the collective agreement.

In recent years, CAL has continuously improved its labor conditions, salary and benefits. CAL always views employees as the important family and values every appeal made by its employees. As one of the major airline in Taiwan's aviation industry, CAL is responsible for air transportation and providing excellent services. This strike has an extensive impact on the public interest. Through this strike, CAL hopes to encourage a rational discussion over the impact of strikes on the public interest. Further, the Company urges government agencies to develop administrative measures and amend related laws for strikes by considering the uniqueness of the aviation industry and the necessity of providing services. This is in the hope that similar labor disputes can be properly resolved under a legitimate system with the rights and interests of passengers and customers kept intact. Last, CAL hopes for continuous communication between labor and management, so that communication between labor and management can be pragmatic, rational, and have more mutual understanding, and respect.

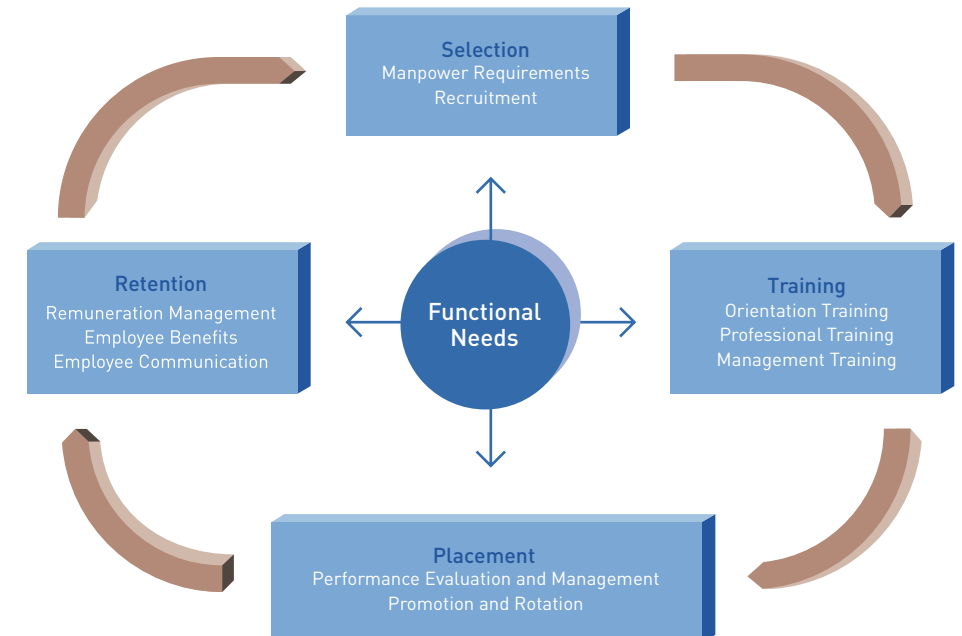
2-2-2 Recruitment and Retention

(GRI 102-8, 202-2, 401-1, 405-1)

Human Resources Management System

The Company recruits and selects employees according to the needs of human resources and the duties required. The recruited employees receive pre-service training based on their duties and take up their posts after passing pre-service training (continuous on-the-job training is required after taking up their posts). Their performances will be evaluated on a regular basis. According to the regulations, outstanding performers will be rewarded or reported for promotion, and appropriate rotations will be arranged. At the end of each year, employees will be rewarded based on the Company's business performance; and the Company has also established favorable employee benefits and multiple channels of communication.

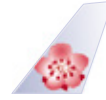
Human Resources Management System



Workforce Structure of CAL Group

By the end of 2018, CAL had 12,409 employees worldwide, including 12,272 full-time employees (males 6,330 accounted for 51.58% and females 5,942 accounted for 48.42%) and 137 contracted employees (males 49 accounted for 35.77% and females 88 accounted for 64.23%). Based on job categories, CAL had 3,467 employees in business operations, 4,766 flight and cabin crews, 2,450 maintenance personnel, and 1,726 employees in other categories. Mandarin Airlines had 1,007 employees (males 491 accounted for 48.76% and females 516 accounted for 51.24%), including 443 employees in business operations, 248 flight and cabin crews, 156 maintenance personnel, and 160 employees in other categories. Tigerair Taiwan had 641 employees, including 640 full-time employees (males 277 accounted for 43.28% and females 363 accounted for 56.72%) and 1 contracted female employee. Based on job categories, Tigerair Taiwan had 284 employees in business operations, 305 flight and cabin crews, 24 maintenance personnel, and 28 employees in other categories. The numbers of employees recruited by the three airlines complied with the law.

Workforce Structure of CAL Group in 2018



Age	ALL	Male	Female
Under 30	3,044	1,135	1,909
31-50	6,704	3,343	3,361
Above 51	2,661	1,901	760

The Job Category	ALL	Male	Female
Business	3,467	1,481	1,986
Air service	4,766	1,718	3,048
Above 51	2,450	2,350	100
Others (Note 1)	1,726	830	896

Ranking	ALL	Male	Female
Senior management (Note 2)	124	97	27
Mid-level management	357	268	89
Junior management	165	123	42
Non-executive employees	11,763	5,891	5,872

Region	ALL	Male	Female
Taiwan	10,589	5,652	4,937
China	291	144	147
Asia	1,077	373	704
USA	277	134	143
Europe	120	51	69
Oceania	55	25	30

Education	ALL	Male	Female
Master / PhD	1,370	791	579
Bachelor	10,196	4,990	5,206
Senior high	720	524	196
Others	123	74	49

Number of employees	ALL	Male	Female
Full-time employees	12,272	6,330	5,942
Contracted employees	137	49	88
Total	12,409	6,379	6,030
The total number includes 81 indigenous employees (males 40 and females 41) and 115 disabled employees (males 79 and females 36)			

Note 1: The job category – others includes executives higher than the rank of vice president, auditors, accountants, information technology personnel, and other employees that are not within the aforesaid categories.

Note 2: Senior management refers to Level 1 managers and deputy managers or above; mid-level management refers to Level 2 managers and deputy managers; junior management refers to Level 3 managers and deputy managers.



Age	ALL	Male	Female
Under 30	360	114	246
31-50	504	258	246
Above 51	143	119	24

The Job Category	ALL	Male	Female
Business	443	160	283
Air service	248	112	136
Above 51	156	143	13
Others (Note 1)	160	76	84

Ranking	ALL	Male	Female
Senior management (Note 2)	35	31	4
Mid-level management	38	30	8
Junior management	53	44	9
Non-executive employees	881	386	495

Note 1: The job category – others includes executives higher than the rank of vice president, auditors, accountants, information technology personnel, and other employees that are not within the aforesaid categories.

Note 2: Senior management refers to Level 1 managers and deputy managers or above; mid-level management refers to Level 2 managers and deputy managers; junior management refers to Level 3 managers and deputy managers.

Region	ALL	Male	Female
Taiwan	922	452	470
China	85	39	46
Asia	-	-	-
USA	-	-	-
Europe	-	-	-
Oceania	-	-	-

Education	ALL	Male	Female
Master / PhD	93	60	33
Bachelor	828	377	451
Senior high	65	45	20
Others	21	9	12

Number of employees	ALL	Male	Female
Full-time employees	1,007	491	516
Contracted employees	-	-	-
Total	1,007	491	516

The total number includes 7 indigenous employees (males 0 and females 7) and 4 disabled employees (males 3 and females 1)



Age	ALL	Male	Female
Under 30	345	101	244
31-50	243	128	115
Above 51	53	48	5

The Job Category	ALL	Male	Female
Business	284	91	193
Air service	305	150	155
Above 51	24	24	0
Others (Note 3)	28	12	16

Ranking	ALL	Male	Female
Senior management (Note 4)	12	7	5
Mid-level management	30	16	14
Junior management	31	15	16
Non-executive employees	568	239	329

Note 3: The job category – others includes Chief Financial Officer, Chief Operating Officer, Chief Business Officer, Chief Executive Officer, and Chairman, as well as Finance Department, Accounting Department, and Information Department.

Note 4: Senior management refers to Level 1 managers and deputy managers (vice presidents) or above; mid-level management refers to Level 2 managers and deputy managers (managers and associate managers); junior management refers to Level 3 managers and deputy managers (section managers, OIC, and supervisors).

Region	ALL	Male	Female
Taiwan	638	276	362
China	-	-	-
Asia	3	1	2
USA	-	-	-
Europe	-	-	-
Oceania	-	-	-

Education	ALL	Male	Female
Master / PhD	83	40	43
Bachelor	533	219	314
Senior high	21	17	4
Others	4	1	3

Number of employees	ALL	Male	Female
Full-time employees	640	277	363
Contracted employees	1	0	1
Total	641	277	364

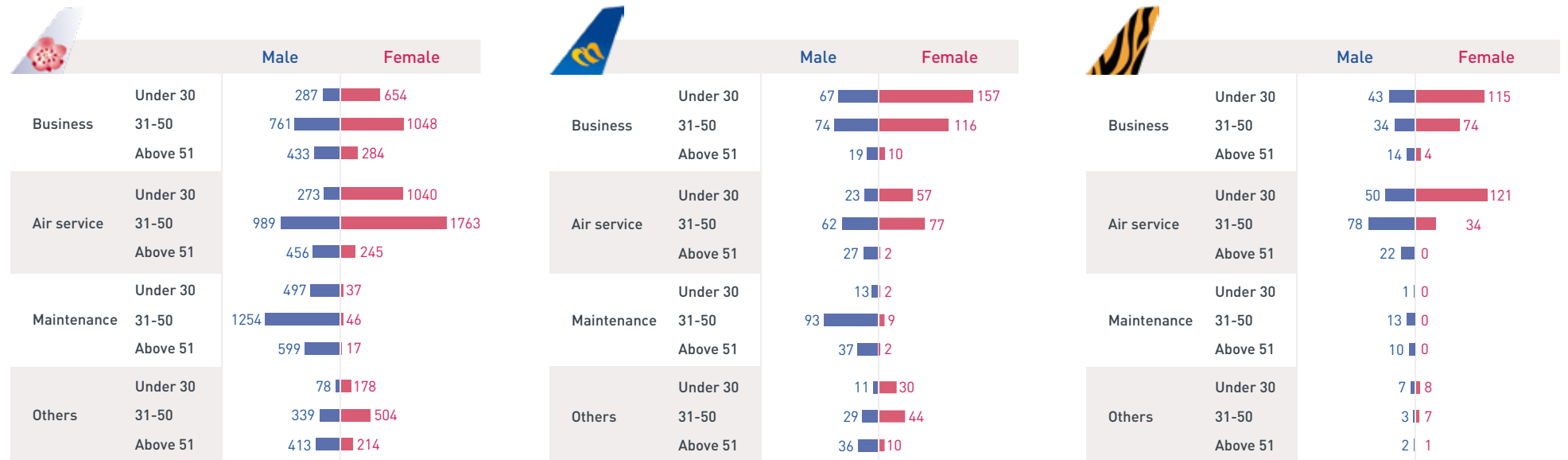
The total number includes 1 indigenous employee (males 1 and females 0) and 3 disabled employees (males 1 and females 2)

Gender Equality and Diversity

CAL provides equal rights and opportunities for every employee regardless of gender. In 2018, female employees accounted for 48.59% of the total CAL workforce, and 24.46% of all managerial positions were held by females. At Mandarin Airlines, female employees accounted for 51.24% of the total workforce, and 16.67% of the managerial positions were held by females. At Tigerair Taiwan, female employees accounted for 56.79% of the total workforce, with female managers representing 47.95% of all managerial positions. Due to the nature of the industry, CAL has a higher demand for professionals in machinery, aerospace, and information management, leading to a common gap between male employees and female employees. CAL is committed to providing a comfortable work environment that is conducive to balanced career development for all employees. To safeguard the well-being and right to work of female employees, when a female flight attendant is pregnant, she may apply for unpaid leave or request a transfer to ground services. Upon completion of maternity leave, she may then apply to resume her duties as a flight attendant. In addition, two breastfeeding rooms have been set up at the China Airlines Park, which are available for female employees at any time. With respect to male employees, we also offer more than the Act of Gender Equality in Employment. A male employee may apply for 5-day paternity leave with full pay during childbirth. In addition, to help our employees balance their work and family lives, CAL has signed agreements with 12 daycare centers and kindergartens to provide special discounts for CAL employees.

CAL values diversity in the workforce. In 2018, CAL employed 81 indigenous employees and 115 employees with disabilities. In addition to our commitment to expanding employment among indigenous workers, we have employed staff with disabilities at a higher proportion than prescribed by law since September 2015. We have also contracted visually impaired massage therapists to provide employees with free on-site massages. In recognition of these efforts, CAL received the Excellency Award at the 14th Golden Wingspan Awards in 2016. We have redesigned job descriptions for employees with disabilities with a focus on improving working conditions and making adjustments to job requirements and career development. We also provide shuttle buses and regularly-scheduled health examinations for our employees with disabilities. In addition, we have signed long-term service contracts with visually impaired massage therapists to provide employees with free on-site massages, thereby providing job opportunities for the visually impaired and enhancing our employees' health at the same time.

Workforce Diversity of CAL Group in 2018



Local Employment

Due to the nature of the industry, the flight network of CAL spans across the globe, and a large number of job opportunities are available. This results in contributions to local employment and economic development. About 85.33% of all CAL employees are based in Taiwan. The composition of CAL's international employees includes foreign pilots from 20 countries, and flight attendants from Vietnam, Japan, and Thailand. We also employ local employees at our 174 destination cities in 29 countries around the world. CAL endeavors to provide a friendly work environment for our international employees, with equal opportunities and benefits to our Taiwanese employees.




Local Employment of CAL Group in 2018

Company	Region	Employees	Managment
CAL	Taiwan	98.66%	100.00%
	China	95.93%	26.67%
	Asia	91.97%	43.40%
	Americas	64.81%	29.55%
	Europe	47.37%	16.00%
	Oceania	72.73%	18.18%
Mandarin Airlines	Taiwan	100.00%	100.00%
	China	80.00%	20.00%
Tigerair Taiwan	Taiwan	96.10%	100.00%
	China	100.00%	100.00%

Recruitment

Due to CAL Group's business growth and fleet / flight network expansion in recent years, we have recruited in various areas to meet the requirements of our growing business. To fulfill our commitment to social responsibility, we continue to promote industry-academia collaboration programs and employ people with disabilities. In 2018, CAL recruited 506 employees, including 352 full-time employees and 154 contracted employees, accounting for 4.08% of the total workforce. Mandarin Airlines recruited 213 full-time employees, accounting for 21.15% of the total workforce. Tigerair Taiwan also employed 66 full-time and 6 contracted employees, accounting for 11.23% of the total workforce.

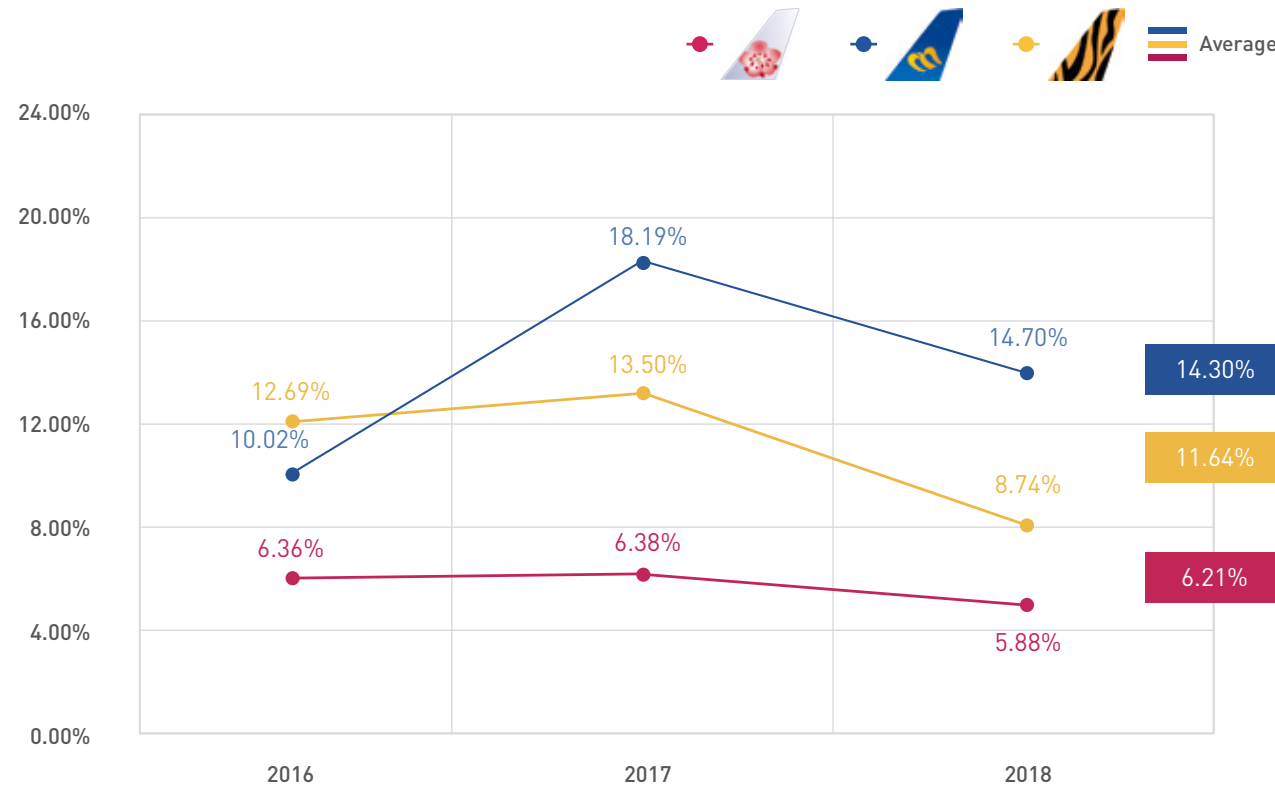
New Employees of CAL Group in 2018

Category							
Full-time employees		352		213		66	
Contracted employees		154		0		6	
Total		506 [4.08%]		213 [21.15%]		72 [11.23%]	
Age	Under 30	378	74.70%	157	73.71%	29	40.28%
	31-50	106	20.95%	47	22.07%	33	45.83%
	Above 51	22	4.35%	9	4.23%	10	13.89%
Gender	Male	250	49.41%	124	58.22%	43	59.72%
	Female	256	50.59%	89	41.78%	29	40.28%
	Taiwan	300	59.29%	201	94.37%	71	98.61%
Region	China	37	7.31%	12	5.63%	0	0.00%
	Asia	104	20.55%	0	0.00%	1	1.39%
	USA	27	5.34%	0	0.00%	0	0.00%
	Europe	22	4.35%	0	0.00%	0	0.00%
	Oceania	16	3.16%	0	0.00%	0	0.00%

Employee Turnover

Over the past three years, the average employee turnover rate of CAL has been 6.21%. Each of our employees is safeguarded by an employment contract, and each contract clearly sets forth provisions regarding rewards, disciplinary actions, and employment termination. In addition, rules concerning termination of employment and the number of days required for a notice of resignation comply with the Labor Standards Act. With respect to locations where employee turnover rates are relatively high, we evaluate local labor-related regulations and wage levels and refer to comments made by resigning employees and local supervisors to see whether adjustments are needed in our salary and benefit practices. We also utilize internal systems and incentive programs to reduce turnover rates.

Employee Turnover Rate of CAL Group from 2016 to 2018

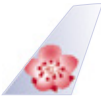


At CAL, the employee turnover in 2018 decreased by 0.5% compared to that in 2017, and the involuntary separation rate decreased by 8.12% compared to that in 2017 mainly due to the expiration of contracts with 110 employees, most of whom were from industry-academia collaboration programs. No significant difference in turnover was reported in other job categories. CAL will continuously optimize internal management to maintain low turnover.

At Mandarin Airlines, most employee turnover in 2018 arose among front-line ground service staff, including industry-academia program students. That year's employee turnover decreased by 3.49% compared with 2017. Due to seasonal demand, part-time employees were in great demand. Some of their contracts expired in 2018 without renewal, while some resigned due to personal career plans. In the future, Mandarin Airlines will provide a variety of communication channels for existing employees and improve employee benefits to retain staff.

Tigerair Taiwan has strived to improve employee benefits in recent years. The turnover in 2018 decreased by 4.76% compared to that in 2017. Most of the employee turnover was due to personal career plans and family concerns. In the future, Tigerair Taiwan will continue to improve employee benefits and provide a better work environment and opportunities to retain outstanding employees.

Employee Turnover Statistics of CAL Group in 2018



Category		2016		2017		2018	
		Amount	Percentage (%)	Amount	Percentage (%)	Amount	Percentage (%)
Age	Under 30	336	41.74%	342	42.38%	298	40.82%
	31-50	231	28.70%	233	28.87%	204	27.95%
	Above 51	238	29.57%	232	28.75%	228	31.23%
Gender	Male	410	50.93%	380	47.09%	345	47.26%
	Female	395	49.07%	427	52.91%	385	52.74%
Region	Taiwan	475	59.01%	482	59.73%	442	60.55%
	China	49	6.09%	69	8.55%	44	6.03%
	Asia	163	20.25%	155	19.21%	163	22.33%
	USA	93	11.55%	63	7.81%	40	5.48%
	Europe	12	1.49%	17	2.11%	27	3.70%
	Oceania	13	1.61%	21	2.60%	14	1.92%
Voluntary		534	66.34%	453	56.13%	469	64.25%
Involuntary		271	33.66%	354	43.87%	261	35.75%
Total		805	6.36%	807	6.38%	730	5.88%

Note: Voluntary separation includes resignations, early retirements, and requests for resignation. Involuntary separation includes mandatory retirements and layoffs.



Category		2016		2017		2018	
		Amount	Percentage (%)	Amount	Percentage (%)	Amount	Percentage (%)
Age	Under 30	41	49.40%	106	61.99%	97	65.54%
	31-50	20	24.10%	44	25.73%	29	19.59%
	Above 51	22	26.51%	21	12.28%	22	14.86%
Gender	Male	43	51.81%	83	48.54%	91	61.49%
	Female	40	48.19%	88	51.46%	57	38.51%
Region	Taiwan	65	78.31%	150	87.72%	133	89.86%
	China	18	21.69%	21	18.28%	15	10.14%
	Asia	0	0.00%	0	0.00%	0	-
	USA	0	0.00%	0	0.00%	0	-
	Europe	0	0.00%	0	0.00%	0	-
	Oceania	0	0.00%	0	0.00%	0	-
Total		83	10.02%	171	18.19%	148	14.70%



Category		2016		2017		2018	
		Amount	Percentage [%]	Amount	Percentage [%]	Amount	Percentage [%]
Age	Under 30	26	50.98%	49	56.32%	24	42.86%
	31-50	23	45.10%	31	35.63%	30	53.57%
	Above 51	2	3.92%	7	8.05%	2	3.57%
Gender	Male	26	50.98%	42	48.28%	25	44.64%
	Female	25	49.02%	45	51.72%	31	55.36%
Region	Taiwan	51	100.00%	86	98.85%	56	100.00%
	Asia	0	0.00%	1	1.15%	0	0.00%
	USA	0	0.00%	0	0.00%	0	0.00%
	Europe	0	0.00%	0	0.00%	0	0.00%
	Oceania	0	0.00%	0	0.00%	0	0.00%
Total		51	12.69%	87	13.50%	56	8.74%

Employee Retention

Periodical Performance Evaluations Conducted on a Fair and Objective Basis

CAL conducts an employee performance evaluation three times a year. Except for employees working for less than a certain period of time, all employees are covered in the performance evaluation. Apart from evaluations on general performance, core function assessment indicators and approaches are also adopted based on each employee's professional characteristics and in consideration of the actual working conditions of the employee under evaluation. With respect to all managerial levels, a specific annual Management by Objectives (MBO) framework has been established based on CAL's business strategies in addition to job assessment indicators.

To make the assessment process impartial and objective, each employee is evaluated by several supervisors, and performance grades are also allocated according to different job rankings. In addition, to ensure that the performance evaluation provides employees positive feedback and assistance and facilitates communication and interaction between supervisors and employees, an interview is also included in the performance evaluation.

A two-way assessment scheme has been formulated for evaluating the performance of flight attendants. Flight attendants who have worked for more than one year are evaluated and assigned ratings based on their attendance, reward / disciplinary actions, and performance within a reasonable range and based on employee classification to avoid subjective impressions which could detract from the impartiality of the performance evaluation.

Sound Remuneration System

Every year, CAL offers employees reasonable remuneration packages, related benefits, and insurance coverage based on CAL's overall salary policy and earnings. Performance-based salary adjustments and promotions are also possible for outstanding employees, ensuring that the promotion process is conducted in accordance with the principles of transparency and fairness. In addition, we provide allowances and various types of benefits (such as

dividends, education and training, employee stock options, concessional flight tickets, and work allowances) and flexible benefit programs (such as retirement packages), thereby allowing employees to choose benefit packages based on their needs. Apart from enhancing the bond between employees and the management, this arrangement can also raise employee satisfaction and retention rates.

2-2-3 Employee Development (GRI 404-1)

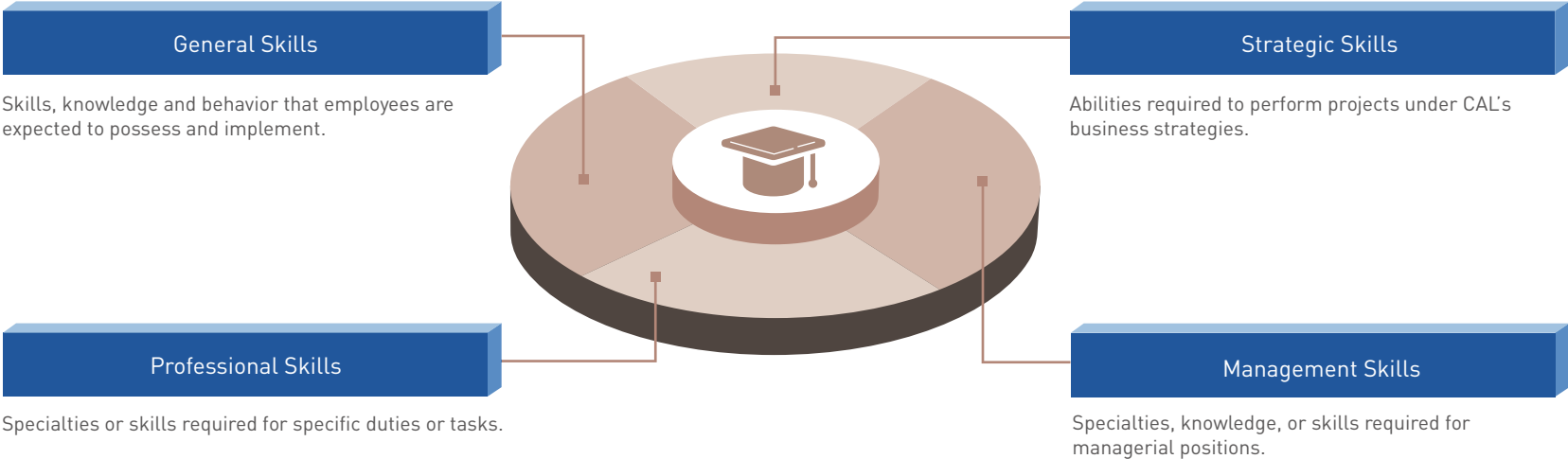
Sound Training System and Framework

CAL has established a sound training system and framework to develop aviation professionals. We adopt diversified training methods, including on-site and online training courses, invest in training hardware and software, and develop training courses in accordance with related laws and regulations. CAL values the functional development of employees and integrates fundamental aviation training with hands-on practice. In addition, CAL organizes business strategy and management-related training for all managerial levels and employees with potential on a regular basis to improve their horizons and expertise.

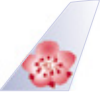


Based on the demand of education and training, the Training Advisory Committee has been established to plan annual education and training activities for all employees. The primary strategic objective of CAL's training and development program is to enhance employee job skills. Adopting the training framework of China Airlines Lecture Hall, CAL ensures that all employees are equipped with skills to perform their duties and job functions.

In 2018, CAL invested about TWD 290 million in employee training and development. The total number of training hours exceeded 330,000, and the completion rate of training reached 97.09%.

Training Framework



Training Statistics of CAL Group from 2016 to 2018

Company	Category		2016			2017			2018					
			Training Hours	Amount	Average Hours	Training Hours	Amount	Average Hours	Training Hours	Amount	Average Hours	Total expenses	Number of classes opened	Training completion rate
	The Job Category	Business	186,733	3,634	51.38	132,372	3,546	37.33	76,626	3,681	20.82	295,799,540	2,941	97.09%
		Air service	215,607	4,697	45.90	159,904	4,844	33.01	165,560	4,725	35.04			
		Maintenance	23,708	2,415	9.82	20,966	2,458	8.53	41,070	2,632	15.60			
		Others	7,102	1,902	3.73	8,402	1,797	4.68	46,956	2,095	22.41			
	Gender	Male	152,115	6,554	23.21	106,574	6,476	16.46	138,531	6,622	20.92			
		Female	281,035	6,094	46.12	215,070	6,169	34.86	191,681	6,511	29.44			
	The Job Category	Business	19,082	403	47.35	9,916	397	24.98	14,208	314	45.25	7,039,960	2,717	99.33%
		Air service	16,849	171	98.53	19,673	229	85.91	21,328	268	79.58			
		Maintenance	8,850	128	69.14	17,196	139	123.71	20,803	157	132.50			
		Others	4,359	126	34.60	5,814	175	33.22	3,936	84	46.86			
	Gender	Male	23,815	382	62.34	34,884	454	76.84	39,899	418	95.45			
		Female	25,324	446	56.78	17,716	486	36.45	20,375	405	50.31			
	The Job Category	Business	703	110	6.39	16,868	261	64.63	5,368	284	18.90	21,515,740	1,732	100.00%
		Air service	17,910	242	74.01	15,535	330	47.08	11,661	305	38.23			
		Maintenance	432	26	16.62	326	28	11.63	549	24	22.88			
		Others	189	24	7.88	1,313	25	52.52	33	28	1.18			
	Gender	Male	9,527	210	45.37	10,205	275	37.11	8,859	277	31.98			
		Female	9,707	192	50.56	23,837	369	64.60	8,752	364	24.04			

Note 1: Others include executives higher than the rank of vice president, auditors, accountants, information technology personnel, and other employees that are not within the aforesaid categories. For Tigerair Taiwan, others include the Chief Financial Officer, Chief Operating Officer, Chief Business Officer, Chief Executive Officer, and Chairman, as well as the Finance Department, Accounting Department, and Information Department.

Note 2: Training hours exclude those at outstations.

Note 3: Average training hours = Total training hours ÷ total number of employees in the category. For CAL, completion rate of training = average completion rate of training. For Mandarin Airlines and Tigerair Taiwan, completion rate of training = completion rate of training in each unit ÷ number of units.

Sound Internal Recruitment and Rotation System

CAL is committed to upholding the principle of assigning each staff member to a proper position. We offer regular job rotations and internal training courses to improve our employees' job skills and overall productivity. In each department, an annual staff review and rotation evaluation is conducted at least once a year. Employees who have been in the same positions for a long time are also reviewed and rotated when necessary. A comprehensive system for internal transfer is also in place to provide employees with the chance to hone diverse capabilities and skills. In addition, we have established an internal recruitment system so that employees can participate in the selection processes in accordance with their wishes and ambitions. This allows CAL to utilize its human resources in a flexible manner and ensures that employees are assigned to the most proper positions, resulting in a win-win situation for both parties.

To utilize management with flexibility and to ensure that they are assigned to the most proper positions with improved competency, CAL conducts a management review and rotation evaluation on a regular basis. Managers working in domestic departments and outstations or joint venture companies for three years will be included in the management review and rotation evaluation based on related regulations.

Human Capital ROI

Through education and training, employees can grow along with CAL's strategic and business objectives. Meanwhile, corporate assets will also be accumulated in value and provide CAL with a solid foundation for its long-term viability. CAL has recently adopted the Human Capital Return on Investment (HCROI) metric as a benchmark tool. In addition to estimating earnings from investing in human capital, the metric can also be included in the Company's long-term performance indicators. Compared with 2017, CAL's revenue in 2018 increased. As oil prices rose by about 30% over 2017 levels, however, operating expenses grew faster than income and this led to a lower overall ROI compared to the previous year.

Human Capital ROI

Item	2016	2017	2018
Human Capital ROI (Note)	1.23	1.35	1.09

Note: Human Capital ROI = Income - [Operating expenditures - (Salary costs + Benefit costs)] / (Salary costs + Benefit costs).

Employee Development Programs in 2018

Employee Development Program	Business Benefits	Quantitative Impact of Business Benefits	Proportion of Employee Participation in the Program
Training for Passenger Transport Marketing Personnel (Ticketing, New Product Sales, Marketing Skills and Observation, Knowledge of and Marketing Skills in Cargo Transport)	<ol style="list-style-type: none"> 1. Improve the professional skills and knowledge of passenger and cargo transport marketing personnel 2. Improve the overall quality of service 3. Increase customers, supply, and revenue 	Operating revenue increased by TWD 10,449,581,000 in 2018 compared to last year	Proportion to total employees: 7.7%
Emergency Escape Refreshment Training for Maintenance, Ground Services, Cabin Crew Members, and flight operations	<ol style="list-style-type: none"> 1. Elevate safety awareness and enhance the security awareness 2. Be familiar with operating procedures 3. Be familiar with emergency response procedures 	Number of flights in 2018: 87,961 GDI direct lost in 2018 due to human factors: USD 125,658	Proportion to total employees: 73.40% Maintenance: 2,571 Ground services: 1,861 Cabin Crews: 3,344 Flight operations: 1,341
Regular Service Training for Cabin Crew Members and Ground Services Employees to Strengthen Service Concepts and Skills	<ol style="list-style-type: none"> 1. Recall the passion of service 2. Enhance service skills 3. Strengthen the professional ability to handle and solve problems 4. Reduce customer complaints and elevate the quality of service 	Enhance the quality of service and reduce compensation issues derived from customer complaints to increase the revisit rate The customer satisfaction rate of ground services in 2018: 89 The customer satisfaction rate of cabin crew members: 88.9	Proportion to total employees: 36.90% Cabin crews: 3,424 Ground services: 1,165
Refreshment Training for Pilots based on Fleet Plans and Regulations to Ensure Flight Safety	<ol style="list-style-type: none"> 1. Enhance flight safety 2. Comply with regulations and be familiar with the operating procedures 	High-level risk of unsafe events due to negligence of pilots: 1	Proportion to total employees: 10.80% Pilots: 1,341

Note: To reduce GDI (ground damage incidents), CAL organizes training for front-line employees on a regular basis.

Industry-Academia Collaboration

CAL has promoted its campus talent development program since 2013 by taking advantage of its abundant practical experience and sound aviation training facilities and courses. In response to the government's policy on industry-academia collaboration and talent development, CAL has cooperated with colleges and universities nationwide to offer internship programs that last for six months to one year in various fields.

CAL also offers interns scholarships and allowances and arranges training courses for them. To start an internship, interns are required to pass the training courses first. In 2018, CAL was awarded a place in the Top 20 Youngsters' Favorite Brands by Cheers magazine (for the eighth consecutive year since 2011). For many students, CAL is also seen as one of the ideal companies for starting an internship. With industry-academia collaboration, CAL expects to benefit students' career planning by providing them with an opportunity to learn airline operations and working conditions. CAL also expects to recruit outstanding employees through industry-academia collaboration.

In 2018, a total of 109 students participated in the industry-academia collaboration program and the summer internship program.



Summer Internship Completion in 2018

Industry-Academia Collaboration in 2018 (109 Students)

Education Technology	National Taiwan Normal University
Ground Services (1-year)	Dayeh University, Chung Hua University, China University of Science and Technology, Wenzao Ursuline University of Languages, Cheng Shiu University, Soochow University, National Taiwan Ocean University, Chien Hsin University of Science and Technology, National Kaohsiung University of Science and Technology, National Kaohsiung University of Hospitality and Tourism, National Yunlin University of Science and Technology, Feng Chia University, I-Shou University, Shih Chien University, Ming Chuan University, Takming University of Science and Technology, Hsing Wu University, and Providence University
Ground Services (Short-term)	Kainan University, Vanung University, Lunghwa University of Science and Technology, Yuan Ze University, and National Taipei University of Business
Cargo Transport (1-year / Half-year)	National Formosa University, National Yunlin University of Science and Technology, Yuan Ze University, and Feng Chia University
Summer Internship	National Taipei University of Technology, National Formosa University, National Kaohsiung University of Science and Technology, National Yunlin University of Science and Technology, National Taiwan University of Science and Technology, National Cheng Kung University, Asia University, Chinese Culture University, Feng Chia University, and Tamkang University

2-2-4 Employee Rights

[GRI 102-41, 201-3, 401-2, 401-3, 402-1, 405-2]

CAL attaches great importance to the opinions and well-being of its employees. In addition to regular reviews of employees' salary and benefits and labor-management meetings, CAL has established a number of communication channels and activities to enhance cohesion. CAL also respects the independence of labor unions in accordance with the law and expects positive interaction.

Employee Care

Salary and Benefits

CAL firmly believes that employees are the most valuable assets and that it is important to accommodate both employee benefits and shareholders' equity. For these reasons, CAL provides competitive salaries and benefits for its employees. The salary and benefit package of each employee will not differ according to gender, race, religion, political affiliation, or marital status. Whenever the minimum wage of a particular global location is raised, we promptly review our salary standards and make necessary adjustments. In 2018, CAL adjusted salaries by 3% on average. Employees who are required to work overtime due to the nature of their employment receive reasonable overtime pay in accordance with the regulations. No employee is forced to work overtime against his or her will.

Male / Female Salary Ratio of CAL Group in 2018



Category	Base Salary	Bonus
Business Operations	1.23	1.24
Flight and Cabin Crews	1.96	1.92
Maintenance Personnel	1.12	1.12
Others	1.20	1.22



Category	Base Salary	Bonus
Business Operations	1.02	1.02
Flight and Cabin Crews	1.17	1.83
Maintenance Personnel	1.05	1.47
Others	1.08	1.26



Category	Base Salary	Bonus
Business Operations	1.20	1.34
Flight and Cabin Crews	3.15	2.33
Maintenance Personnel	N / A	N / A
Others	1.13	0.76

Note 1: Flight and cabin crews include pilots and flight attendants; others include executives higher than the rank of vice president, auditors, accountants, information technology personnel, and other employees that are not within the aforesaid categories.

Note 2: Base salary: basic pay; bonus: pay outside base pay.

Note 3: The maintenance personnel of Tigerair Taiwan only include male employees.

Supplementary explanation: Flight and cabin crews include pilots and flight attendants; pilots are mostly male, while cabin crews are mostly female. Pilots’ salaries are higher than cabin crews’, resulting in a large difference in the male/female salary ratio.




In accordance with the Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE Listed Companies, the Company disclosed its number of full-time employees not in a managerial position as 10,822 in 2018, a decrease of 30 from the previous year. The total salary of full-time employees not in a managerial position was TWD 16,636,506,000, an increase of TWD 419,009,000 year-over-year, and the average salary of full-time employees not in a managerial position was TWD 1,537,000 in 2018, an increase of TWD 43,000.

Item	Numerical Value	Difference from the previous year
Number of full-time employees not in a managerial position	10,822	Decrease of 30 from the previous year
The total salary of full-time employees not in a managerial position	TWD 16,636,506,000	Increase of TWD 419,009,000 year-over year
The average salary of full-time employees not in a managerial position	TWD 1,537,000	Increase of TWD 43,000 year-over year

Pension Scheme

CAL attaches great importance to the rights and interests of its employees. CAL reports the management of the pension reserve fund to the Labor Pension Reserve Supervisory Committee on a quarterly basis. Prior to the end of each year, CAL allocates the amount required for the following year based on actuarial calculations and related regulations. In terms of allocation rates, the rate for the new labor retirement plan is 6%; the rate for the old labor retirement plan is 15%, which reaches the statutory upper limit, and this amount has been fully allocated in accordance with Paragraph 2, Article 56 of the Labor Standards Act to ensure that employees receive retirement benefits to which they are entitled.

Salary, Benefits and Pension Reserve Fund of CAL Group in 2018 (Unit: TWD million)

Company	Item	2016	2017	2018
	Salary	15,813M	15,760M	16,580M
	Benefits	207M	216M	203M
	Pension Reserve Fund	4,959M	5,710M	6,184M
	Salary	631M	699M	780M
	Benefits	7.8M	6.3M	6.8M
	Pension Reserve Fund	191M	243M	384M
	Salary	436M	646M	724M
	Benefits	N / A (Note 1)		3.65M
	Pension Reserve Fund	1.58M	1.42M	1.90M

Note 1: The Employee Welfare Committee of Tigerair Taiwan was established in 2018. There was no benefit from 2015 to 2017.

Note 2: Benefits offered by CAL / Mandarin Airlines include travel subsidies, allowances for the elderly, scholarships, Labor Day bonuses, spring parties, and anniversary expenses.

Note 3: Benefits offered by Tigerair Taiwan include travel subsidies, club allowances, birthday cash gifts, Mid-Autumn Festival and Dragon Boat Festival gift vouchers, spring parties, and family days.

Friendly Workplace

CAL cares deeply about the physical and mental health of its employees. Each year, we organize a number of activities that foster a friendly workplace and provide care for our employees. In 2018, we organized 11 employee care activities, including fat burning exercises, origin point massages, planting, and yoga. Aimed

at promoting the benefits of exercise for stress relief, these activities saw the participation of around 380 employees. The Company also held seminars on health care as well as CAL Sky Day and a Christmas party, encouraging employees to pursue a healthy and sustainable lifestyle that promotes work-life balance.



Fat Burning Exercise



Origin Point Massage

Unpaid Leave

CAL understands that employees are sometimes unable to continue working due to extenuating personal or family-related matters. Therefore, CAL has set an extended unpaid leave policy which allows employees to take care of their families while retaining their positions with CAL, to fulfill our commitment to fostering a friendly workplace. Furthermore, CAL supports the government's policy of requiring employers to provide comprehensive childcare leave. To encourage qualified employees to apply for unpaid leave, CAL guarantees that applicants will not be evaluated under a grade "A" for that year. Male employees are also entitled to this benefit, including applying for 5-day paternity leave with full pay before and after the child's birth. In addition, if the child is born during a regular or public holiday or the employee's business trip, the balance of the paternity leave will be valid within 15 days thereafter. According to our leave policy, we offer more benefits than those specified in the Gender Equality in Employment Act. After analyzing the cases of unpaid leave taken by employees in recent years, we found that the majority of employees who did not return to their duties or returned to work but worked less than a year did so primarily because of the need to care for family members or due to changes in career objectives.

Unpaid Maternity Leave of CAL Group in 2018

Unpaid Maternity Leave	Female	Male	Total	Female	Male	Total	Female	Male	Total
Number of Employees Eligible for Unpaid Maternity Leave in 2018 (A) _(Note)	533	399	932	25	33	58	18	27	45
Number of Employees Applying for Unpaid Maternity Leave in 2018 (B)	340	13	353	22	1	23	9	1	10
Rate of Employees Applying for Unpaid Maternity Leave in 2018 (B*100 / A)	63.79%	3.26%	37.88%	88.00%	3.03%	39.66%	50.00%	3.70%	22.22%
Number of Employees to Be Reinstated in 2018 (C)	452	22	474	16	1	17	7	0	7
Number of Employees Applying for Reinstatement in 2018 (D)	288	15	303	14	1	15	6	0	6
Reinstatement Rate in 2018 (D*100 / C)	63.72%	68.19%	86.68%	87.50%	100.00%	88.24%	85.71%	0.00%	85.71%
Total Number of Employees Reinstated from Unpaid Maternity Leave in 2017 (E)	306	18	324	14	1	15	0	0	0
Member of Employees Serving for One Year after Reinstatement from Unpaid Maternity Leave in 2017 (F)	284	16	300	13	0	13	0	0	0
Retention Rate of Employees Reinstated from Unpaid Maternity Leave in 2018 (F*100 / E)	92.81%	88.89%	92.59%	92.86%	0.00%	86.67%	0.00%	0.00%	0.00%

Note: (A): Date of birth from January 1, 2015 to December 31, 2018.



Benefits for CAL Employees



Annual Bonus / Dividends

At the end of each year, an annual bonus is allocated from the Company's earnings. Employee dividends are also distributed according to the Company's management objectives and employees' performances in the year.



Retiree Association

CAL assists retirees and employees in establishing a global retiree association and the CAL Retiree Portal.



Employee Benefits

Employee benefits include wedding cash gifts, childbirth cash gifts, disaster subsidies, travel subsidies, scholarships, allowances for the elderly, emergency loans, birthday cash gifts, Labor Day gift vouchers / cash gifts, and allowances for bereavement.



Annual Leave Scheme

CAL offers more than the requirements set by the Labor Standards Act.



Childcare

CAL has entered into preferential childcare contracts with 13 daycare centers across Taiwan to assist employees with childcare arrangements.



Commuting

Apart from regular commuter shuttles at fixed sites, there are also shuttle buses for shift workers, cabin crew members, and employees with disabilities stretching from Keelung, Taipei City and New Taipei City to Taoyuan and Zhongli.



Group Health Insurance

Group health insurance covers medical, accident and serious illness insurance. Dependents may also be enrolled in the group insurance scheme at favorable rates.



Concessional Flight Tickets

Employees and their spouses, parents, and children enjoy free and concessional flight tickets to more than 50 destinations around the world. Code-shared concessional flight tickets from other airlines are also offered.



Employee Stock Ownership Trust

Participation is voluntary. For employees that agree to join the employee stock ownership trust, a fixed amount is deducted from their monthly salary based on their pay grade.



Resignation Program

Employees in the general track after 10 years of service and employees in the specialist track after 10 years of service and reaching the age of 54.



Unpaid Leave



Care for Dependents

Applicable when an employee's spouse or direct relatives are seriously ill or when necessary.



Illness

Applicable when an employee is seriously ill.



Advanced Study

Applicable to all employees without restrictions on schools or programs.

Employee Communication

Each and every employee matters to CAL. We maintain multiple avenues of communication with our employees, such as regularly scheduled labor-management meetings. These allow us to express our goodwill and actively respond to the concerns of our employees. We also strive to make improvements. We have established an employee care mailbox, a sexual harassment mailbox with an associated grievance hotline, and a "speak your mind" employee communication mailbox. In addition, our internal company messaging software, Team+, enables employees to express their opinions and make suggestions at any time. When facing significant changes in operations that affect employees, CAL will

provide notices to comply with related labor regulations and also promptly communicate with labor unions and employees. Information on material issues and the latest news about employee rights are made available on CAL's website or e-mailed to all employees. In the event that an employee expresses concern about certain internal regulations or practices, the Company will seek to clarify the issue and communicate with employees more frequently.



Versatile Communication Channels



1. Quarterly Labor-Management Meetings

Meetings are held on a regular basis for CAL to communicate with the representatives of CAEU. Meetings between divisions and corresponding branches of CAEU are also held separately. In meetings, labor and management communicate face-to-face on collective employee rights, benefits, working conditions and work environments.



2. Supervisor Mailbox

CAL encourages employees to express opinions and advice through the supervisor mailbox.



3. "Speak Your Mind" Employee Portal

CAL encourages employees to express opinions and advice through the "Speak Your Mind" Employee Portal on the intranet.



4. Employee Care Mailbox

The Human Resources Division has set up the employee complaint e-mail (wecare@china-airlines.com) to protect the rights and interests of employees.



5. Team+

This internal company messaging software is offered to employees for free to facilitate two-way communication and instantly report to supervisors.

Labor Unions [GRI 102-41]

At present, CAL cooperates with several labor unions and remains committed to maintaining open communication to negotiate reasonable agreements. We show the same respect to all unions and provide considerable resources in accordance with the law. In particular, the China Airlines Employees Union (CAEU) is a member of the Chinese Federation of Labor. There are six subordinate branches under CAEU which are classified based on the location of members and business:

Branch 1: Divisions in Head Office

Branch 2: Flight Operations Division

Branch 3: Cabin Crew Division and Inflight Supply Chain & Marketing Division

Branch 4: Maintenance Division, Engineering Division, and Quality Assurance Division

Branch 5: Taipei Branch, Ground Service Division, and Cargo Sales, Marketing & Service Division

Branch 6: Kaohsiung Branch

There are five subordinate branches under Mandarin Airlines Employees Union (MDAEU):

- Branch 1:** Divisions in Taipei Head Office, Taichung Branch, and Taichung Station
- Branch 2:** Flight Operations Division and Operation Control Center
- Branch 3:** Inflight Services Department
- Branch 4:** Customer Services Division
- Branch 5:** Engineering & Maintenance Division

In 2018, a total of 10,500 CAL employees participated in CAEU, accounting for 99.20% of the total workforce. A total of 856 Mandarin Airlines employees participated in the Mandarin Union, accounting for 92.84% of the total workforce. In 2002, CAL entered into a collective agreement with CAEU, the first such collective agreement in Taiwan's aviation industry. In January 2017, Mandarin Airlines also entered into a collective agreement with MDAEU, with the coverage rates of CAL and Mandarin Airlines being identical to the aforementioned participation rates. The agreement states clauses regarding union activities, labor-management meetings and dispute resolution, employment and termination, working hours, leave and vacations, salary, allowances and bonuses, personnel transfers, rewards, and disciplinary actions, employee benefits, training, and occupational safety and health. The purpose of the agreement is to protect and enhance the rights and interests of employees. CAL is now renewing the collective agreement

with CAEU in 2018 to maintain stable labor-management relations.

CAL / Mandarin Airlines cooperates and communicates with CAEU / MDAEU through various channels as a partner and based on mutual dependence. In addition to regular meetings held between the Head Office and CAEU / MDAEU, divisions and corresponding branches of CAEU / MDAEU hold labor-management meetings to discuss the labor-management proposals. All resolutions will be handled once they are reported. In addition, meeting minutes taken at labor-management meetings held at the Head Office are published and made available to all employees on CAL's website / Mandarin Airlines 's website. CAL / Mandarin Airlines is dedicated to maintaining harmonious labor-management relations through open, efficient channels of communication.

Union Participation Rate of CAL and Mandarin Airlines



Item	2016	2017	2018
Number of Participants	10,755	10,704	10,500
Participation Rate	99.50%	99.60%	99.20%



Item	2016	2017	2018
Number of Participants	645	752	856
Participation Rate	88.36%	88.16%	92.84%

Note 1: The number of CAL participants refers to the number of people being members of CAEU in the year(including employees in Taiwan); hourly-basis employees, interns, contracted employees, and executives higher than the rank of vice president are not included.

Note 2: The number of Mandarin Airlines participants refers to the number of people being members of MDAEU in the year (including employees in Taiwan below the rank of vice president (inclusive) and expatriate executives in Mainland China); hourly-basis employees and contracted employees are not included.

Note 3: Tigerair Taiwan does not have a labor union currently.

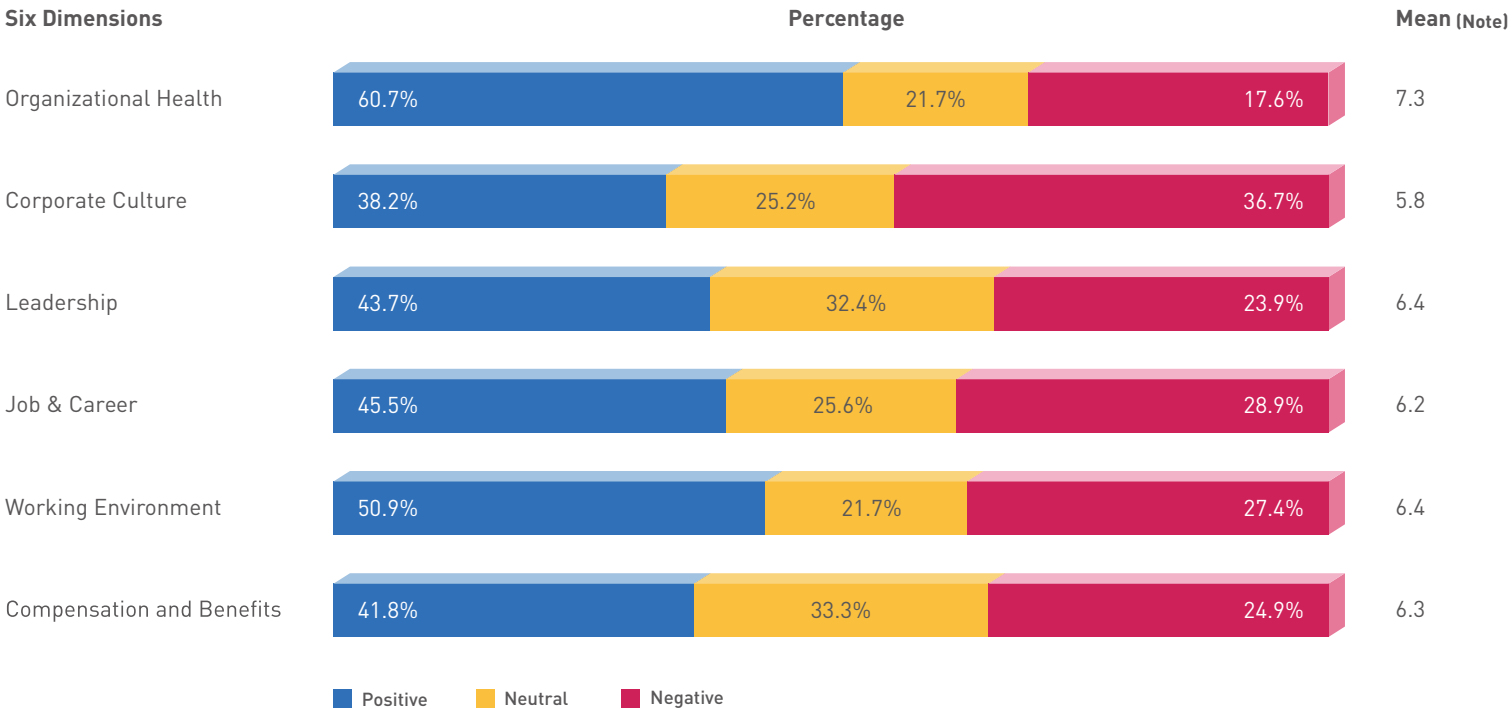
Employee Engagement

We view employees as our most valuable assets. This is why we set a variety of channels to communicate, and listen carefully to our employees' suggestions. CAL conducted an employee satisfaction survey, "Hear the Truth", from April 10 to April 26, 2019. Conducted by an external consulting firm, the online anonymous questionnaire covered six major dimensions, including Organizational Health, Corporate Culture, Leadership, Job & Career, Working Environment, and Compensation and Benefits. This survey included 47 regular questions and 10 extra management related questions. The questionnaire was distributed to 10,367 regular employees in Taiwan and responded by 3,941 employees (response rate: 38.01%). The valid questionnaires totaled 3,732 (valid response rate: 36.00%).

We analyzed the results of the survey based on functions, including general administration staff, pilots, cabin crew, maintenance staff, and ground/customer service staff (including cargo sales, marketing & services and system operation control). Organizational Health showed the highest satisfaction overall, followed by Working Environment, Leadership, Compensation and Benefits, Job & Career, and Corporate Culture. The results were not significantly different from those of the previous survey. We also analyzed the results based on gender and found no significant difference between males and females. The overall satisfaction was lower than that of the previous survey. We speculated that this might be affected by the period of the survey after the strike of pilots.

The survey helped us to understand employees’ views and needs. It is an important reference for us to provide our employees with a stable work environment, increase their efficiency, and achieve a positive and sustainable company culture.

Results of Satisfaction Survey in Six Dimensions



Note: The full score is 10.



Labor Disputes

Background of Labor Disputes in 2018

1. On the morning of October 4, 2018, CAEU and an employee accused Taiwan Adventist Hospital, which was entrusted by the Company to conduct narcotics testing for flight operators, of not sealing the specimen in accordance with the regulations and questioned the correctness of the testing procedures. CAEU claimed that the human rights of the employee were infringed and requested Taiwan Adventist Hospital to make a statement and immediate improvement.
2. On the morning of October 30, 2018, CAEU and an employee appealed the case to the Taoyuan City Government and requested the Taoyuan City Government to conduct a labor inspection. The employee stated that the process of urine narcotics testing conducted at Taiwan Adventist Hospital on September 18, 2018 was questionable and thus did not hand over the specimen in accordance with the regulations. The employee did not refuse to take a narcotics test, but was suspended for investigation the next day. The employee found the Company's action improper and requested immediate reinstatement.

CAL's Action / Clarification

1. Taiwan Adventist Hospital replied that its staff conducted the test fully in accordance with the operating procedures provided by the Company.
2. CAL offered an immediate clarification on the day of the aforementioned activity. The Company has established its Narcotics Testing Regulations for flight operations and authorized qualified hospitals to conduct narcotics tests. If there are doubts about the testing results, employees may apply for a second test. The current operations do not affect employee rights. In addition, the Company has announced the operating procedures in advance and has implemented these procedures for many years. If there was a question, the employee should have asked

the Company instead of refusing to take the test. According to the Civil Aviation Act, if a party refuses to hand over a specimen, the party will be deemed unqualified and should be suspended for investigation. The employee was punished for violating the working rules and was reinstated on November 21, 2018.

Background of Labor Disputes in 2019

After two attempts at reconciliation failed in 2017 and 2018 respectively, the Taoyuan Union of Pilots decided to go on strike based on its members' votes. This was despite the fact that CAL and the Taoyuan Union of Pilots agreed on a 1-year period of negotiations under mediation of the Taoyuan City Government on August 30, 2017. Early on February 8, 2019, the Taoyuan Union of Pilots announced the strike at 6 a.m., reflecting the failure to reach a consensus in the process of negotiations. Viewing the rights and interests of passengers as a priority, CAL initiated a contingency plan within a few hours to adjust flights and transfers, in order to minimize the impact of the strike.

CAL's Action / Clarification

1. From February 9 to February 14, 2019, both parties held four meetings hosted by the Ministry of Transportation and Communications and attended by the Ministry of Labor and the Taoyuan City Government and reached a consensus on February 14, 2019 at 10:25 p.m. They thereupon immediately entered into the collective agreement. At the same time, the union announced the termination of the strike.
2. In the process of negotiations, both parties had a rational discussion over staffing and special flights. CAL agreed to adjust labor conditions to a level better than that specified in the law and reviewed the cause of the dispute for better communication with the union.

2-2-5 Healthy and Safe Workplace (GRI 403-1, 403-2, 403-8, 403-9, 403-10)

In accordance with the Labor Standards Act, CAL has established an Occupational Safety and Health Committee. The Committee is tasked with the objectives of preventing occupational hazards and protecting the safety and health of all employees by reviewing, coordinating, and making recommendations pertaining to safety and health related matters. The President acts as the chairperson. One deputy chairperson and one executive secretary are appointed. Members consist of Level 1 managers, occupational health and safety employees, engineers, and medical personnel from the designated divisions/ departments as well as representatives appointed by labor unions. A meeting is held once every three months to review and analyze occupational incidents. All incidents are followed up and reported to the management so that related health management solutions can be

subsequently developed. In 2018, a total of 20 safety and health proposals were reviewed and discussed, 19 of which have been closed and one is still ongoing. Meeting minutes were published on the EIP website; a total of 107 occupational safety reports were compiled, 107 of which were improved and closed with an achievement rate of 100.00%.

Five Major Objectives of CAL's Occupational Safety and Health

- Comprehensive occupational safety and health management system
- Reinforce the corporate safety culture and enhance personnel's safety awareness
- Enforce risk mangement mechanism and effectively resolve threats
- Strengthen safety and health education & training to reduce incidence of occupational injury
- Build a safe, healthy and comfortable working environment

Proportion of Labor Representatives in Occupational Health and Safety Committee of CAL Group in 2018 (Unit: %)

Company	Composition of Occupational Health and Safety Committee	2016	2017	2018
CAL	Proportion of Labor Representatives in Taipei Branch	36.36	36.36	36.36
	Proportion of Labor Representatives in Taoyuan	37.04	38.45	38.46
	Proportion of Labor Representatives in Kaohsiung Branch	38.00	38.00	37.50
	Proportion of Labor Representatives in EMO	34.78	34.78	34.78
Mandarin Airlines	Proportion of Labor Representatives	33.33	33.33	33.33
Tigerair Taiwan	Proportion of Labor Representatives	38.46	38.46	38.46

Note: Proportion of labor representatives = (Labor representatives of Occupational Health and Safety Committee / Total members of Occupational Health and Safety Committee) * 100%.

Dual International Certification of Occupational Health and Safety

To achieve corporate sustainability and systematic safety and health management in accordance with international trends and standards at home and abroad, CAL has established an independent safety and health management system and enhanced risk controls in line with international standards. We base the certification of our occupational safety and health management system on ISO45001:2018 and CNS45001 and adopt the PDCA model and preventive measures to control risks associated with occupational hazards and occupational diseases. This is intended to improve the performance of our occupational safety and health management and live up to our occupational safety policy. CAL has obtained ISO45001:2018 and TOSHMS certification in April 20, 2019 to provide employees with a safe, healthy and comfortable working environment and enhance industrial competitiveness.

Implementing Risk Control over Occupational Health and Safety Management

In 2018, the disabling injury frequency rate (FR) was 2.23; the disabling injury severity rate (SR) was 32; the absence rate was 1.43%; the frequency-severity indicator (FSI) was 0.26. According to the analysis, most occupational

hazards were caused by unsafe conduct of employees. The FR and SR of CAL were lower than the air transport industry's averages (FR: 4.92; SR: 438) from 2015 to 2017. CAL has continuously implemented its occupational safety policies. In 2018, no occupational hazard to contractors or students in industry-academia collaboration programs and summer internship programs was reported in CAL's workplaces. As for Tigerair Taiwan, cabin crew members were infected with measles from passengers, leading to a significant increase in FR and SR compared to those in 2017.

Implementing Risk Control to Reduce Occupational Hazards

Year	Unit	Taoyuan	Engineering & Maintenance Organization	Taipei	Kaohsiung	CAL
2016	Number of annual disabling injuries	56	8	0	5	69
	Absenoe days of annual disabling injuries	741	368	0	15	1124
	FR	3.95	1.59	0.00	4.33	3.21
	SR	52	73	0	13	51
	FSI	0.45	0.34	0.00	0.23	0.40
2017	Number of annual disabling injuries	63	8	0	17	88
	Absenoe days of annual disabling injuries	752	605	0	176	1180
	FR	4.36	1.52	0	14.74	4.07
	SR	52	115	0	152	54
	FSI	0.47	0.42	0.00	1.49	0.46
2018	Number of annual disabling injuries	36	9	0	3	48
	Absenoe days of annual disabling injuries	497	179	0	12	688
	FR	2.52	1.66	0.00	2.44	2.23
	SR	34	33	0	9	32
	FSI	0.29	0.23	0.00	0.14	0.26

Note 1: Calculated at 8 hours per day per person

Note 2: Disabling injury frequency rate(FR)= (Number of annual disabling injuries ÷ Annual working hours) × 1,000,000

The number of annual disabling injuries includes the number of annual fatalities, permanent total disabilities, permanent partial disabilities, and temporary total disabilities. The calculation is rounded to two decimal places.

Note 3: Disabling injury severity rate(SR)=(Absence days of annual disabling injuries ÷ Annual working hours) × 1,000,000

The absence days of different types of disabling injuries are calculated based on the online Occupational Hazard System. The calculation is rounded to the nearest integer.

Note 4: Frequency-Severity Indicator (FSI)=√[(FR×SR) / 1000]

The calculation is rounded to two decimal places.

Note 5: 2015-2017 averages in the air transport industry published by the Ministry of Labor: FR=4.92, SR=438, and FSI=1.47.


Note 6: Continue to review the FSI to understand the operational performance of each unit's occupational disaster prevention and improve it.


Note 7: TPE has established an occupational safety unit since 2013

Note 8: This statistic does not include commuter traffic accidents


Note 9: The Taichung Branch was restructured on January 1, 2017, so it is not included in the three-year comparison. The Taichung Branch is expected to be included in the calculation in 2019.

Occupational Hazards Statistics of CAL Group in 2018

	Male	Female	All Employees	Taoyuan	Engineering & Maintenance Organization	Taipei	Taichung	Kaohsiung
Disabling Injury Frequency Rate	1.21	3.43	2.23	2.52	1.66	0	0	2.44
Disabling Injury Severity Rate	17	48	32	34	33	0	0	9
Occupational Disease Rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Absence Rate	0.56%	2.44%	1.43%	1.80%	0.49%	1.44%	0.05%	1.28%
Number of Incidents Resulting in Work-Related Fatalities	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Male	Female	All Employees
Disabling Injury Frequency Rate	2.15	4.29	6.44
Disabling Injury Severity Rate	4	155	159
Occupational Disease Rate	0.00	0.00	0.00
Absence Rate	0.34%	0.74%	0.55%
Number of Incidents Resulting in Work-Related Fatalities	0.00	0.00	0.00

Note 1: Disabling injury frequency rate(FR)= (Number of annual disabling injuries ÷ Annual working hours) × 1,000,000
 Note 2: Disabling injury severity rate(SR)=(Absence days of annual disabling injuries ÷ Annual working hours) × 1,000,000

	Male	Female	All Employees
Disabling Injury Frequency Rate	9.06	13.79	11.75
Disabling Injury Severity Rate	103	159	135
Occupational Disease Rate	0.00	0.00	0.00
Absence Rate	0.08%	0.13%	0.11%
Number of Incidents Resulting in Work-Related Fatalities	0.00	0.00	0.00

Note 3: Absence rate=(Absence days ÷ Annual working days) × 100%
 Note 4: Mandarin Airlines / Tigerair Taiwan only have one business location in Taiwan.

What’s Next

1. Recruitment

Based on business needs, CAL will recruit professionals to meet the future growth of the fleets and business operations. To achieve our commitment to corporate social responsibility, we will continue to promote industry-academia collaboration programs and employ people with disabilities.

2. Diversification

Over the past three years, female employees accounted for 48.00% of CAL's total employees. In 2019, the target is also set at 48.00%. In terms of CAL's female managers, the proportion has increased year by year. In 2020, the target is set at 24.5%.

3. Employee Training

Based on our business strategy, CAL will continue to provide professional training courses covering a wide range of fields. In 2019, the Company will base overall employee training on development, empathy, trends, and accountability in line with the objective of sustainable management and profitability. Training courses will be implemented through guideline establishment, case studies, and follow-ups. Training courses on general management skills will be scheduled, including laws and regulations, mid-level / high-level management camps, incentive management, and interview skills. Courses for specialists will also be scheduled, including procurement personnel, instructors, and HR. General training courses for all employees will also be provided, including aviation management, creative thinking, work-life balance, and career experience camps. A total of 15 training courses will be provided.

4. Personal Information Management System

CAL will continue to implement the personal information management system by urging departments to complete personal information protection and the information security policy based on the quality manuals, so as to enhance employees' awareness of personal information protection and privacy and reinforce customer trust.

5. Implementing Occupational Health and Safety Management System (ISO 45001) and Incorporating Safety and Health in Corporate Culture

Incorporating safety and health in the corporate culture requires the input of senior executives and the implementation of safety and health policies and practices. CAL aims to enhance employees' awareness of safety, so that they will actively obtain safety-related knowledge. By establishing graded safety and health management practices and appointing safety and health officers, CAL expects to apply the concepts of occupational safety and health to work and enhance employees' skills to maintain these concepts.

(1) Strengthening safety and health education and promoting the concept of occupational safety and health

CAL will promote safety and health training among all divisions. Each employee is required to take at least three hours of training courses every three years; training may be organized for promoted and transferred supervisors if needed. Members of the Occupational Safety and Health Committee are required to take at least three hours of safety and health training courses every three years, to develop a correct attitude toward occupational safety and health in addition to guiding safety and health officers. CAL will also share knowledge of safety and health and organize training courses required for new employees, transferred employees, safety and health managers, special operators, and supervisors to perform work and prevent occupational hazards.

(2) Establishing graded safety and health management and safety and health officers

CAL will continue to implement occupational safety and health management. The hazard identification system will be set up to increase employees' participation. Safety and health officers will also be established to guide divisions / departments to perform risk assessments and improvements based on the concept of corporate community.

(3) Enhancing the safety and health management system and audits to reduce the occurrence of occupational hazards

(4) Introducing ISO45001:2018 International Occupational Safety and Health Management System

CAL will incorporate ISO45001:2018 into CAL's existing management framework. By identifying, assessing, and proactively managing risks, CAL aims to set up appropriate safety and management infrastructure and training systems to implement risk management in an effective way.

2-3

Cooperation

HIGHLIGHTS



3rd Time annual supplier conference

Taiwan's first airline to hold an annual supplier conference for three consecutive years.



1st Time airline to conduct sustainability audits

Taiwan's first airline to perform sustainability audits.



1st Highest score for Supply Chain Management criterion in CSA of DJSI

Selected for the DJSI Emerging Markets index, and scored highest in the Supply Chain Management criterion of Corporate Sustainability Assessment (CSA) of DJSI.

Management Approach (GRI 103-1, 103-2, 103-3)

■ Importance of Material Issues

Supplier support is one of the important factors for CAL in providing quality service. In view of this, how to increase value for stakeholders while maintaining sustainable profitability through supply chain management is the key to CAL's sustainable operations. CAL also endeavors to strengthen the sustainable value of the entire industry chain through its influence, thus further achieving the goal of mutual prosperity with its partners.



Commitment and Long-Term Goals

• Commitment

To achieve sustainable development with partners, CAL is committed to using sound supplier chain management in order to optimize the entire procurement mechanism as well as risks related to occupational safety. This will be done in order to improve the sustainability of the overall value chain.

• Long-Term Goals



2020

1. Maintain Sustainability Assessment Questionnaire (SAQ) Score at 85 points
2. Optimize risk management for sustainable supply chain, implement SAQ, and audit 30% of critical tier-1 suppliers by 2020

2025

1. Maintain SAQ score at 87 points
2. Expand the scope of supply chain management, implement SAQ audits, and audit 100% of critical tier-1 suppliers by 2025

2030

1. Maintain SAQ score at 89 points
2. Provide supply chain training, improve assistance mechanisms, and continuously implement a SAQ

Unit in Charge

Corporate Sustainability Committee-Supply Chain Task Force

Management Mechanisms

- The meeting of Corporate Sustainability Committee, at least twice a year.
- Supply Chain Task Force reports to Corporate Sustainability Committee, every quarter

Objectives and Plans

KPI	2018			2019 Objectives
	Objectives	Performance	Achievement	
Convene Annual Supplier Conference	One session	Held on December 26	100%	One session
Conduct SAQ	Response rate at least 70%	Response rate 62.5%	89% (Note)	Response rate at least 70%
Critical Supplier SAQ Score	85 points	92 points	100%	85 points
Implement Procurement Staff Training	Two sessions	Two sessions to be held in August and November respectively	100%	Two sessionsw

Note: The reason of low response rate is the total amount of critical tier-1 suppliers of general products lowers the definition of critical suppliers decreased, so the quantity of investigation decreased as well.

Grievance Mechanism

Procurement

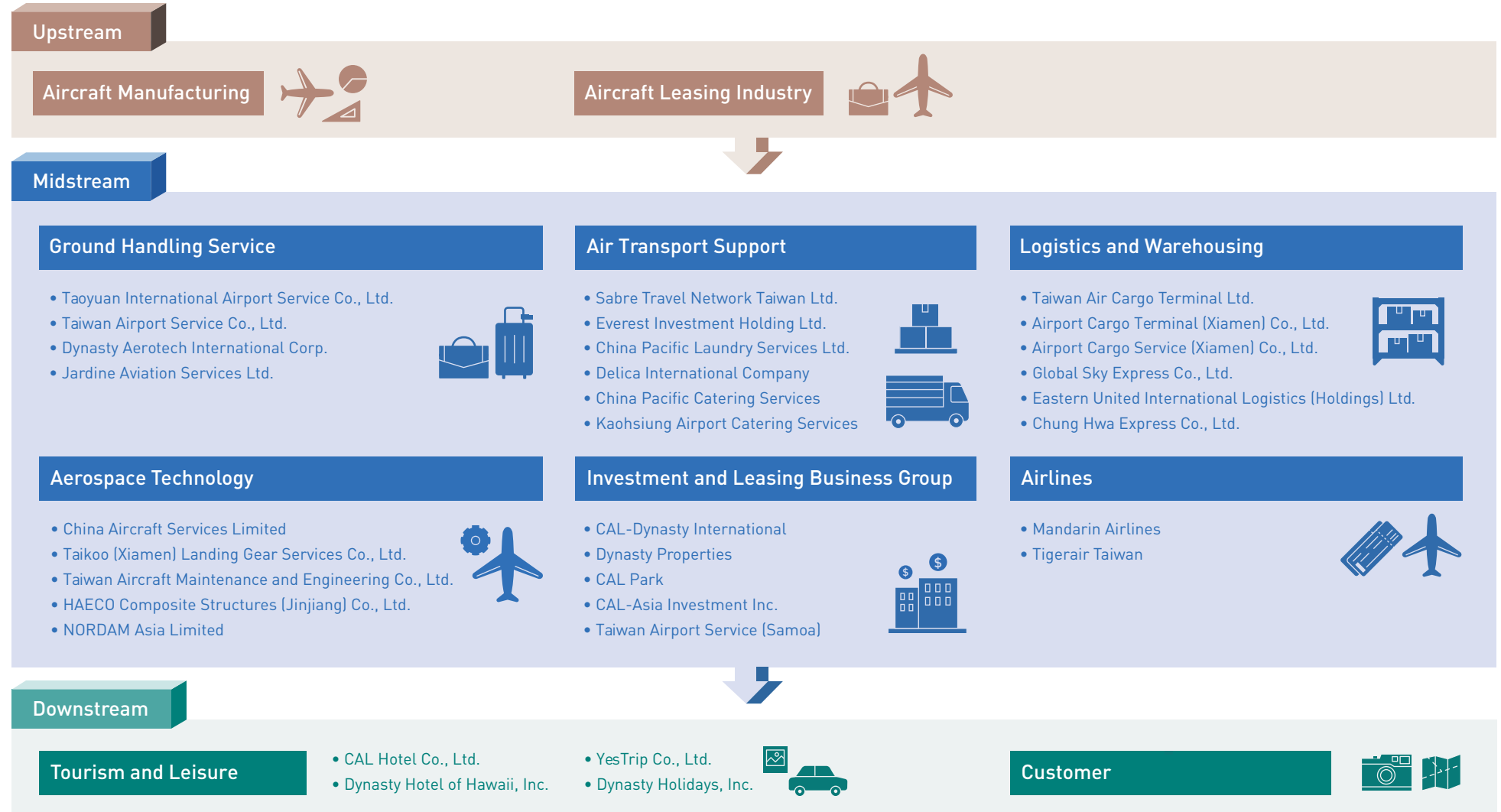
- **General Products: Administration Division** —
E-mail: tpeuo@china-airlines.com
- **Aviation Parts: Engineering Division** —
E-mail: AOG_DESK@email.china-airlines.com
- **E-shopping / Duty free: In-flight Service Supply Division** —
E-mail: e-shopping@china-airlines.com



Stakeholder Contact

2-3-1 CAL Value Chain (GRI 102-9)

Compared with other industries, the aviation industry is unique in respect to safety concerns. As of 2018, the CAL Group had established 32 joint ventures extending across business sectors including air transport, ground services, tourism, aerospace technology, aviation transport support, logistics, and warehousing. By integrating strengths from each component, the Group expects to optimize its overall quality of service, competitiveness, and value chain.



2-3-2 Sustainable Supply Chain Management (GRI 204-1, 308-2, 407-1, 414-2)

Suppliers constitute indispensable partners for CAL in advancing toward sustainable development. CAL views supply chain sustainability as one of the important factors in improving corporate competitiveness. Thus, CAL has implemented sustainable supply chain management since 2014, and it established the Supply Chain Taskforce to be in charge of sustainable supply chain management covering aviation materials, aviation fuel, in-flight catering, ground handling service, and general products. In addition, CAL has set long-term sustainable development goals to support UN's Sustainable Development Goals (SDGs) and has formulated its [policy statement](#) and [code of conduct](#) in accordance with international standards including the Global Reporting Initiative (GRI), ISO 26000, the United Nations Global Compact (UNGC), and the International Labour Organization (ILO). Sustainable supply chain management also includes a risk survey mechanism, audits, and supplier conferences. Moreover, the results of sustainable supply chain management are reported to the Corporate Sustainability Committee for review every quarter.



Material Procurement Types

	Aviation Materials (Aircraft Parts)	Aviation Fuel (Fuel Required for Flight)	In-Flight Catering (In-Flight Meals Offered to Passengers)	Ground Handling Service (Airport Manpower)	General Products (Goods Required for Overall Operations)
Description	Aviation materials are keys to flight safety. Therefore, aviation materials must have certificates of qualification, and their airworthiness must be confirmed by related units.	Fuel is vital for flight and its cost of procurement forms one contributor to operating costs.	In-flight catering stands as one of CAL's crucial quality services. CAL provides passengers with a complete in-flight experience based on the needs of long-haul and short-haul passengers and nationality requirements.	CAL provides excellent airport services, and improves passengers' satisfaction throughout the journey with the help of its ground staff and agents.	General products refer to basic supplies required for business operations to improve operational efficiency and quality.
Critical supplier's definition	Irreplaceable suppliers and yearly accumulated procurement amount is over certain percentage.	Irreplaceable suppliers or the procurement amount is accounted for over certain jet fuel cost in whole year.	Suppliers offer long-haul service. (including the China Pacific Catering Services at Taipei Station)	Irreplaceable suppliers and yearly flights handling by the suppliers are accounted for over certain total flights of CAL.	Irreplaceable suppliers or yearly accumulated procurement amount is over certain number.

Note: Material procurement types are defined by the purchase amount.

Milestones of Sustainable Supply Chain Management

2014	2015	2016	2017	2018
<ul style="list-style-type: none"> Establish a supply chain taskforce Formulate a policy statement on sustainable supply chain management 	<ul style="list-style-type: none"> Formulate a Supplier Code of Conduct Conduct a sustainability risk survey 	<ul style="list-style-type: none"> First hold Supplier Conference for Sustainability 	<ul style="list-style-type: none"> Establish a sustainability audit plan Identify supported SDGs 	<ul style="list-style-type: none"> Set long-term sustainable development goals in accordance with SDGs

2018 Achievements

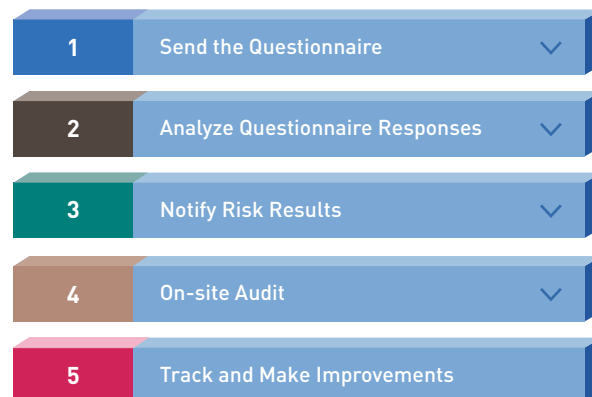
1. Risk Assessment of Supply Chain Sustainability

Since 2015, CAL has conducted a survey for supply chain sustainability risk and formulated its SAQ based on international initiatives and evaluations such as the GRI Standards, ILO, UNGC, Dow Jones Sustainability Index (DJSI), CDP, and the Universal Declaration of Human Rights. To improve the accuracy of the results of the SAQ, CAL established the mechanism of supply chain management including defining the definition of critical suppliers' definition, conducting sustainability risk survey, set up the audit plan, and improvement assistance. CAL has referred the survey result of SAQ and feedback of assessed suppliers to adjusted SAQ in order to control the risk of supply chain sustainability and enhance sustainable competitiveness.

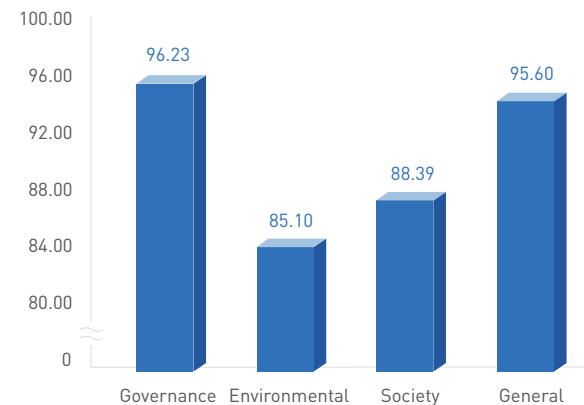
In 2018, the survey was sent to 72 suppliers, the majority being critical suppliers. This accounted for 87.56% of the total amount of procurement, and witnessed a response rate of 62.5%. On the whole, the sustainability performance of CAL's supply chain was 91.79 on average and there was no supplier with high risk after assessing. The average score across dimensions (Governance, Environment, Society, and General) was more than 85 points. This demonstrated that most suppliers incorporated the concepts of sustainability into their management mechanisms. CAL has carried out the sustainable management of supply chain for the second year. In the future, we will continue to conduct the SAQ for identifying the sustainability risk and hold the annual supplier conference to communicate with its partners for improving the engagement effectiveness. Moreover, we also hope to influence other partners and expand the management scope to the tier-2 suppliers in order to achieve the goal of supply chain sustainability.

Note: "Governance" includes ethics and regulatory compliance. "Environment" refers to environmental protection. "Society" includes human rights and labor conditions, and occupational safety and health. "General" includes quality and safety and information security.

Procedures of identifying risk of supply chain sustainability



2018 Risk Survey of Supply Chain Sustainability (Score)



Overall Sustainability Performance of Suppliers

- In 2018, the risk assessment of the sustainable supply chain scored 91.79 points.
- **Governance:** Critical suppliers generally had an internal management mechanism to ensure that the code of ethics and regulations were implemented.
- **Environmental:** More than 83% of the suppliers took into account the environmental impact caused by operations and adopted related mitigation measures.
- **Social:** About 88% of the suppliers had a control mechanism for labor conditions and human rights within the organization; nearly 81% of the suppliers had an occupational safety and health management system, among which seven suppliers obtained external certifications for their management systems.
- **General:** 100% of the suppliers had a quality management system, and 98% of them conducted information security training on a regular basis to ensure employees' awareness of information security.

Reasons for High Risk in Each Dimension

- **Environmental (14.29%):** Suppliers did not have a basic environmental management policy or measure and greenhouse gas inventory or carbon reduction mechanism; in addition, they had no specific management approach to the reduction in energy / resource consumption.

- **Social (9.52%):** Most suppliers did not establish a control system relating to human rights and labor conditions, as well as an occupational safety and health management system; in addition, they did not perform well in terms of freedom of association.
- **General (2.38%):** Suppliers did not establish information security management policies and guidelines.

Note: Suppliers did not identify the existing high risk in terms of governance.

Improvement Action

CAL will continue to improve the evaluation criteria for SAQ and have in-depth understanding of risks that suppliers have in four aspects covered in the field review of supply chain sustainability completed this year; in addition, CAL will continue to convey information on sustainable development to suppliers on a regular basis to enhance the sustainable performance of supply chain partners.

2. Assisting Suppliers Reduce Risks

Convene Annual Supplier Conference

To strengthen communication with suppliers, CAL convened its third annual supplier conference on December 26, 2018; attendees included 37 domestic suppliers (58 partners).

During the conference, CAL talked about international trends and standards of sustainable supply chain management in the aviation industry, and also invited international experts to share circular economy trends and momentum which is a material issue for supply chain sustainability, hoping this information assists suppliers understand the importance of sustainable supply chain management and explore the business opportunity. In addition, CAL elaborated on the implementation of sustainable supply chain management based on the SGDs and its vision and strategy for sustainable development throughout 2018. In doing so, CAL intended to boost suppliers' awareness and achievement of sustainable development. To optimize the identification of sustainable supply chain risks, CAL collected suppliers' opinions from the workshop in order to improve the SAQ operation and shrink the gap of sustainability recognition between CAL and suppliers.



Sustainability Training

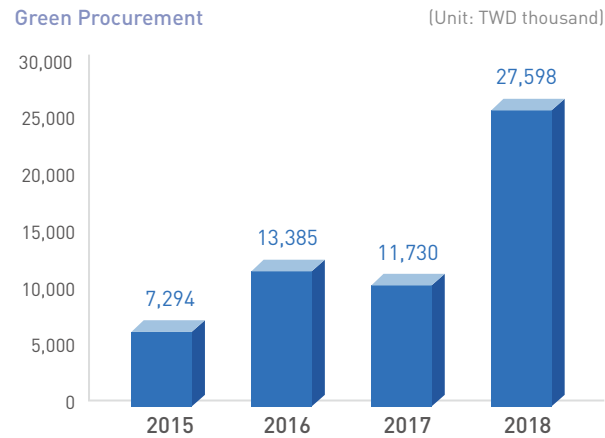
CAL actively provides sustainability training in order to enhance the procurement staff's knowledge of supply chain sustainability. In 2018, the procurement staff attended sustainable supply chain training to gain a better understanding of the trends and current status of international supply chain management. CAL also invited experts to train procurement staff for the sustainability audit. These experts explained policies and mechanisms for sustainable supply chain management, outlined how the sustainability audit was implemented, and ran through case studies of benchmark companies in order to build up fundamentals regarding the sustainability audit. Moreover, CAL responded to the update of ISO 14001:2015 by holding two supplier environmental training sessions in 2018. These sessions were aimed at continuously building the capacity of suppliers and affiliates regarding environmental sustainability, thereby achieving mutual prosperity with partners.

3. Performance of Supply Chain Sustainability

Green Procurement

In 2018, new A350 aircraft that had been purchased from Airbus departed France and arrived in Taiwan. These new aircraft participated in a biofuel

project with Airbus and Air TOTAL, and were fueled by Sustainable Aviation/Alternative Fuels (SAF) with a Certificate of Sustainability (CoS). In its procurement process, CAL takes EPA-certified green marks into account. CAL also adheres to green procurement practices as it collaborates with suppliers throughout the process of designing its cabin service products, in order to develop eco-products. In accordance with Self-Government Ordinance for Taoyuan Developing into a Low-carbon Green City that took effect in 2017, CAL integrated 88 eco-products with Category I, Category II and Category III. The main reason for the increase in green procurement in 2018 compared to 2017 was the replacement for old vehicles of airport apron. Every year, CAL also invests resources in procuring environmentally-friendly equipment, promoting maintenance projects, and paying for waste disposal and noise prevention.

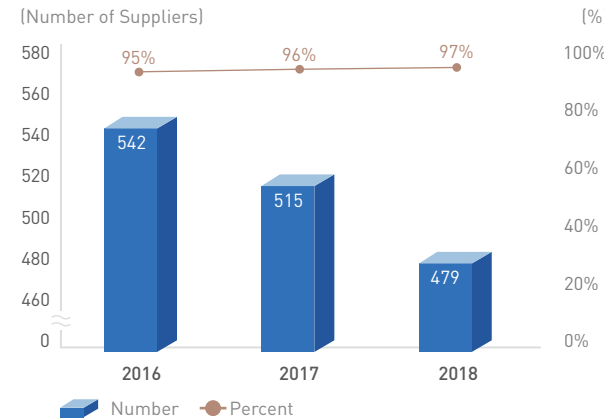


Note: Green procurement includes Category I, Category II and Category III eco-products specified in the Regulations for Priority Procurement of Eco-Products (January 15, 2001).

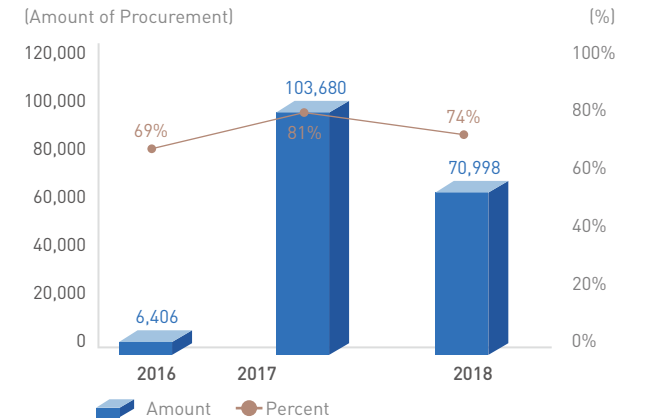
Local Procurement

CAL's corporate social responsibility has always included fostering the development of related industries in Taiwan. Except for certain aircraft equipment, parts, and some types of business procurement that are subject to international standards, CAL has tried its best to source from local suppliers to promote the growth of the local economy. A decreasing volume of procurement in 2018 was due to changes in inventory, demand, and contract terms. In the future, CAL will continue to implement its policy of local procurement.

Number of Local Suppliers



Amount of Local Procurement



Note 1: Statistics include the Administration Division and the maintenance park; the fleet conducts procurement independently, while the In-flight Supply Chain & Marketing Division and the Ground Services Division are not included.

Note 2: Aircraft parts are not included. They are subject to special certification.

What's Next

1. Continue to implement sustainable supply chain management mechanisms.
2. Provide sustainability training for procurement staff.
3. Convene an annual supplier conference.

2-4

Environment



HIGHLIGHTS

**3rd Time** selected in DJSI and got highest score in Environmental Reporting and Climate Strategy

Three consecutive times selected in DJSI emerging markets index and got highest score in Environmental Reporting and Climate Strategy of DJSI in 2018.

**2nd Time** A- / leadership CDP

Ranked A- in 2016 and 2018 CDP, the global transportation industry benchmark and the best in the global aviation industry in 2018.

**5th Time** TCSA Climate Leadership Award

Awarded TCSA Climate Leadership Award for five consecutive years since 2014.

**2nd** Diamond-level Green Building

Crew Training Building certified as a Diamond-level Green Building in 2018.



1st Taiwanese airline to organize seminar on sustainable aviation fuels

CAL organized the first seminar on sustainable aviation fuels to share experiences in using aviation fuel in the delivery of A350.



One and Only Taiwanese airline to recognize TCFD for public support

One and only airline in Taiwan to support the Task Force on Climate-related Financial Disclosures (TCFD).



One and Only Taiwanese airline to sign Buckingham Palace Declaration

One and only airline in Taiwan to sign the Buckingham Palace Declaration against wildlife trafficking.



One and Only Taiwanese airline to participate in PGGM

One and only airline in Taiwan to participate in the PGGM project initiated by EU IAGOS, Taiwan governments and NCU, and collect atmospheric data from 9,143 flights as of 2018.



Voluntary carbon offset program

CAL initiated ECO Travel, a carbon offset program, in 2018 to help customers achieve the idea of zero carbon travel.

Management Approach

(GRI 103-1, 103-2, 103-3)

Importance of Material Issues

In recent years, frequent disasters have occurred worldwide due to climate change. Environmental events such as air pollution, wastewater, waste, and noise have placed to travel and freight markets under great risk. The aviation industry has also been affected. As a leading airline in Taiwan, CAL strives to provide quality products and services, while fulfilling the responsibility and obligation of environmental protection, in hopes of offering passengers a better flight experience.

Commitment and Long-Term Goals

• Commitment

To optimize the capacity for environmental protection, CAL has actively participated in environmental organizations and initiatives at home and abroad in addition to complying with laws and regulations pertaining to civil aviation and environmental protection and improving risk management. CAL always takes the lead to reduce environmental pollution and make good use of limited resources.

• Long-term Goals



2020

- Improving annual aviation fuel efficiency by 1.5%
- Reducing carbon emissions (ground operations) by 38% compared with 2009
- Implementing TCFD
- Reducing the amount of general waste (ground operations) produced by 2% compared with 2018, achieving a recycling rate of industrial waste of 40%, and reducing paper consumption by 5%
- Reducing water consumption (ground operations) by 1.5% compared with 2018
- Embargoing illegal wildlife species and prohibiting use of illegal species as food ingredients

2025

- Improving annual aviation fuel efficiency by 1.5% and achieving carbon-neutral growth (CORSIA CNG2020)
- Reducing carbon emissions (ground operations) by 40.43% compared with 2009
- Reducing the amount of general waste (ground operations) produced by 7% compared with 2018 and achieving a recycling rate of industrial waste of 45%, and reducing paper consumption by 10%
- Reducing water consumption (ground operations) by 5% compared with 2018
- Embargoing illegal wildlife species and prohibiting use of illegal species as food ingredients

2030

- Improving annual aviation fuel efficiency by 1.5% and achieving carbon neutral growth (CORSIA CNG2020)
- Reducing carbon emissions (ground operations) by 42.34% compared with 2009
- Reducing the amount of general waste (ground operations) produced by 12% compared with 2018 and achieving a recycling rate of industrial waste of 50%, and reducing paper consumption by 15%
- Reducing water consumption (ground operations) by 7% compared with 2018
- Embargoing illegal wildlife species and prohibiting use of illegal species as food ingredients

■ Unit in Charge

Corporate Sustainability Committee—Environmental Task Force (Corporate Environmental Committee)

■ Management Mechanisms

- The Board of Directors and the Risk Management Committee convene a meeting every quarter
- The Corporate Sustainability Committee convenes a meeting at least twice every year
- The Corporate Environmental Committee convenes a meeting every quarter on a regular basis
- CAL conducts ISO 14001, ISO 50001, and ISO 14064-1 audit and verification every year
- CAL responds to DJSI and CDP on a regular basis

■ Grievance Mechanism

- **CSR: Corporate Development Office** —
E-mail: csr@china-airlines.com

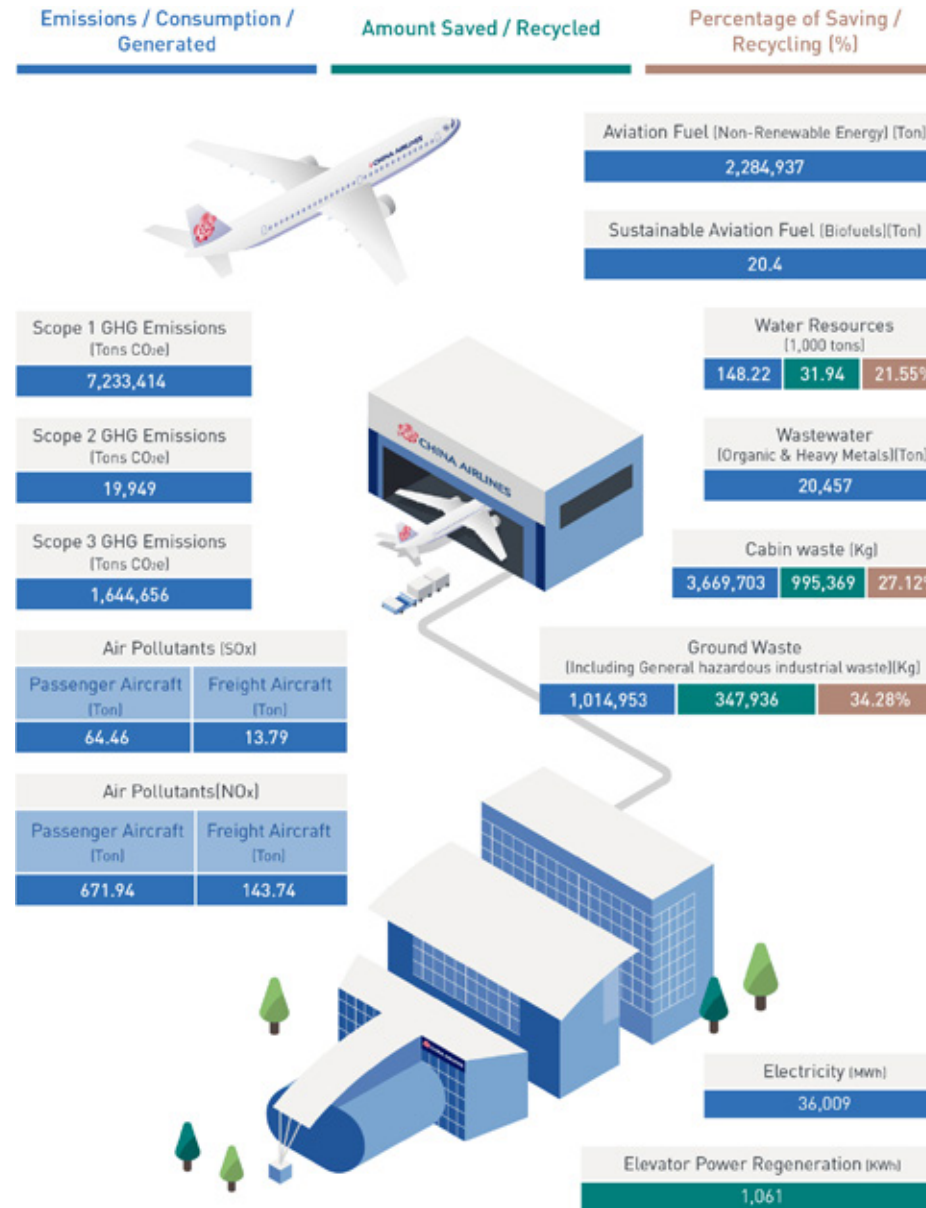


Stakeholder Contact

Objectives and Plans

Task	2018			2019 Objectives
	Objectives	Performance	Achievement	
Optimizing Corporate Environment and Energy Management	Planning and implementing mechanism for managing the environmental risk assessment for outstations	Established the environmental risk investigation and assessment system for outstations	100%	<ul style="list-style-type: none"> Updating the energy management system and passing ISO 50001:2018 certification Optimizing the mechanism for managing the environmental risk assessment for outstations Promoting cross-industry exchange and participating in evaluations
	<ul style="list-style-type: none"> Implementing and consolidating environmental management Planning the environmental management performance database 	<ul style="list-style-type: none"> Organized four meetings of the Corporate Environmental Committee and passed the ISO14001 and ISO50001 external audits Completed the planning of the environmental management performance database 	100%	
	Implementing corporate environmental management and launching 55 environmental protection and energy conservation projects	Completed 59 environmental protection and energy conservation projects	107%	
Consolidating Climate Risk Management and Carbon Reduction	Improving fuel efficiency to 0.2179 ton / 1,000 RTK	Achieved fuel efficiency at 0.2394 ton / 1,000 RTK	90.1%	Improving fuel efficiency to 0.2147 ton / 1,000 RTK
	Reducing Scope 1 greenhouse gas (GHG) emissions in ground operations by 4,574 tons CO ₂ e	Reduced Scope 1 GHG emissions in ground operations by 3,511 tons CO ₂ e	123.2%	Reducing Scope 1 GHG emissions in ground operations by 4,542 tons CO ₂ e
	Reducing Scope 2 GHG emissions in ground operations by 18,297 tons CO ₂ e	Reduced Scope 2 GHG emissions in ground operations by 19,949 tons CO ₂ e	91.0%	Reducing Scope 2 GHG emissions in ground operations by 18,170 tons CO ₂ e
	Crew Training Building receiving the green building label	Obtained the Diamond-Level Green Building Label in September 2018	100%	<ul style="list-style-type: none"> Building capacity for TCFD Promoting CORSIA and EU ETS compliance
Improving Capacity for Value Chain Environmental Management	<ul style="list-style-type: none"> Conducting the supplier environmental risk assessment Advancing management capacity 	<ul style="list-style-type: none"> Completed trial on value chain environmental risk assessment Organized one supplier management meeting Completed seed member reporting 	100%	<ul style="list-style-type: none"> Establishing a corporate environmental risk management mechanism Strengthening knowledge of corporate environmental management Planning and implementing supply chain environmental management
Strengthening Awareness and Brand Image of Corporate Environmental Protection	<ul style="list-style-type: none"> Implementing green fares and voluntary carbon offsets Planning and promoting company-wide communication of environmental protection Organizing 2018 annual training program on environmental protection Organizing two seminars on environmental protection 	<ul style="list-style-type: none"> The Eco Travel Carbon Offsetting website has launched 6,181 trainees (including employees of headquarters and branches and personnel of outstations and affiliates) completed company-wide environmental protection training 2,357 participants joined the environmental protection icon contest and environmental protection events 54 trainees completed training on environmental laws and regulations and GHG inventory retraining Publish the environmental related press release and circulate on Facebook blogs 	100%	<ul style="list-style-type: none"> Organizing three sessions of environmental and energy management training Organizing 2019 annual training program on environmental protection Planning and implementing customer communication of environmental protection Joining and implementing environmental protection initiatives

2018 Environmental Performance



2-4-1 Governance of Environmental Sustainability

Improving the Policy and Structure of Environmental Governance

CAL has established the [environmental and energy management principles](#) (complying with environmental laws & regulations, conserving the earth's resource, improving eco-efficiency, fulfilling social responsibility) and [the environmental and energy policy](#) according to the [China Airlines Corporate Social Responsibility and Sustainable Development Best Practice Principles](#) promulgated by the Board of Directors; in addition, the Company has integrated [UN's SDGs](#) into its instructional strategies to align future business operations with the sustainable development concepts of environmental friendliness, low-carbon emissions, and energy conservation in hopes of achieving a better and happier future.

To implement the aforesaid policy and business risk management, CAL was the first Taiwanese airline to establish the Corporate Environmental Committee in 2011. The President represents the top management, and the Corporate Safety Office acts as the executive secretary. Five environmental management committees were established under the Corporate Environmental Committee to take charge of environmental, energy, and climate risk and opportunity management pertaining to in-flight service, maintenance, and cargo operations as well as the administration and operation of the headquarters and branches based on the risk management system established in line with the international standards. The Corporate Environmental Committee coordinates and integrates countermeasures and resources for environmental, energy, and climate risks and opportunities in the management meetings held every quarter and reports key resolutions to the Board of Directors in routine meetings of the Board and its committees. For specific issues, functional task forces, including the Carbon Management Task Force, the Sustainable Aviation / Alternative Fuels Task Force, and the TCFD Task Force ^(Note), have also been set up for cross-departmental cooperation and flexible deployment of resources.

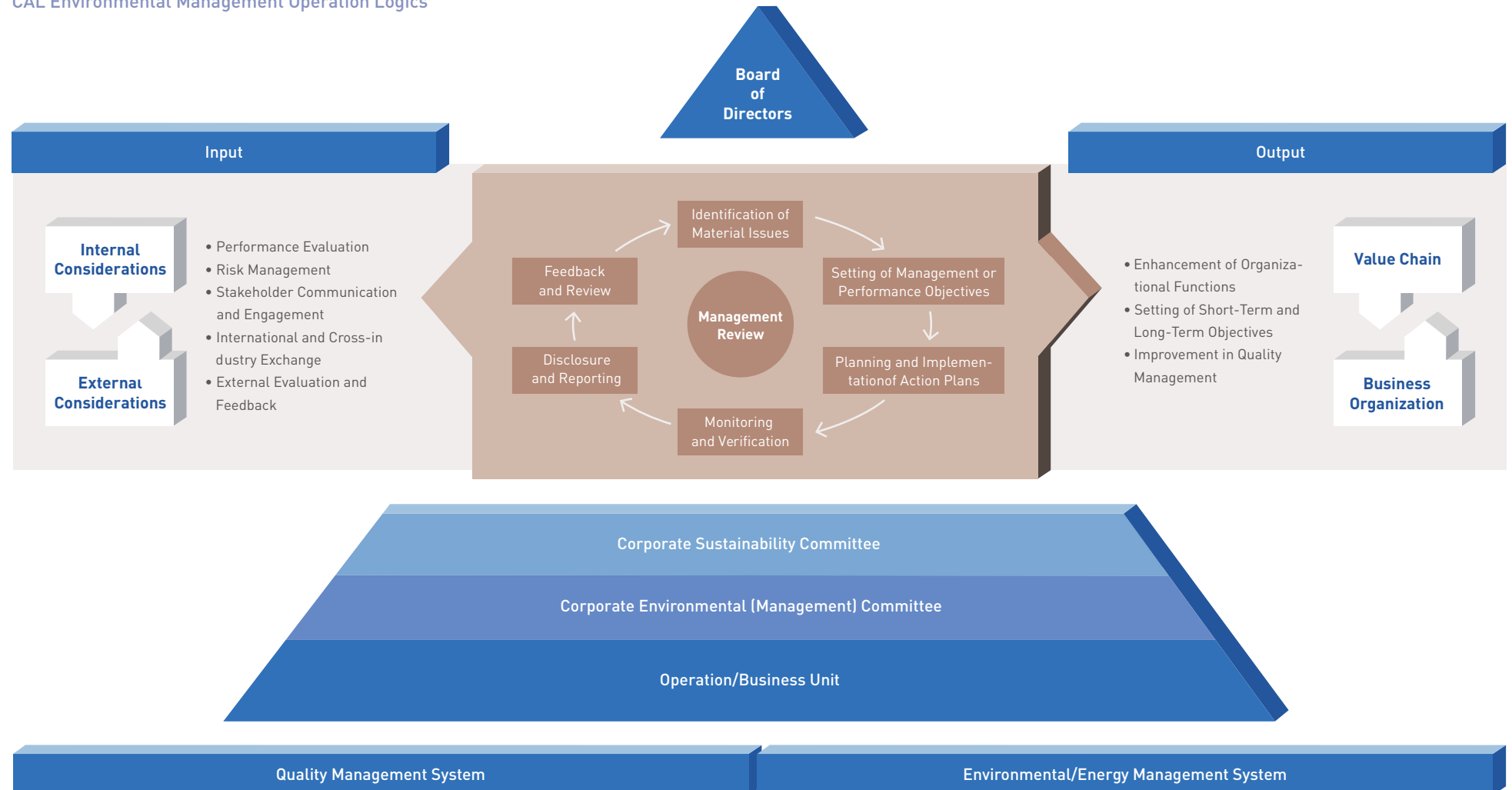
Overall, CAL has built a sound corporate environment and energy management model in the aspects of policy, organization and management system based on international trends and risk management practices. From a life cycle perspective, CAL takes into account the context of the organization, internal / external issues, and needs and expectations of stakeholders and manages environmental, energy, and climate risks and opportunities appropriately to ensure that the environmental sustainability policy is implemented. In the future, CAL will introduce TCFD step by step to strengthen environmental governance. For more information, refer to [Environmental Governance - China Airlines Corporate Sustainability Site](#).

Note: TCFD refers to Task Force on Climate-related Financial Disclosures.

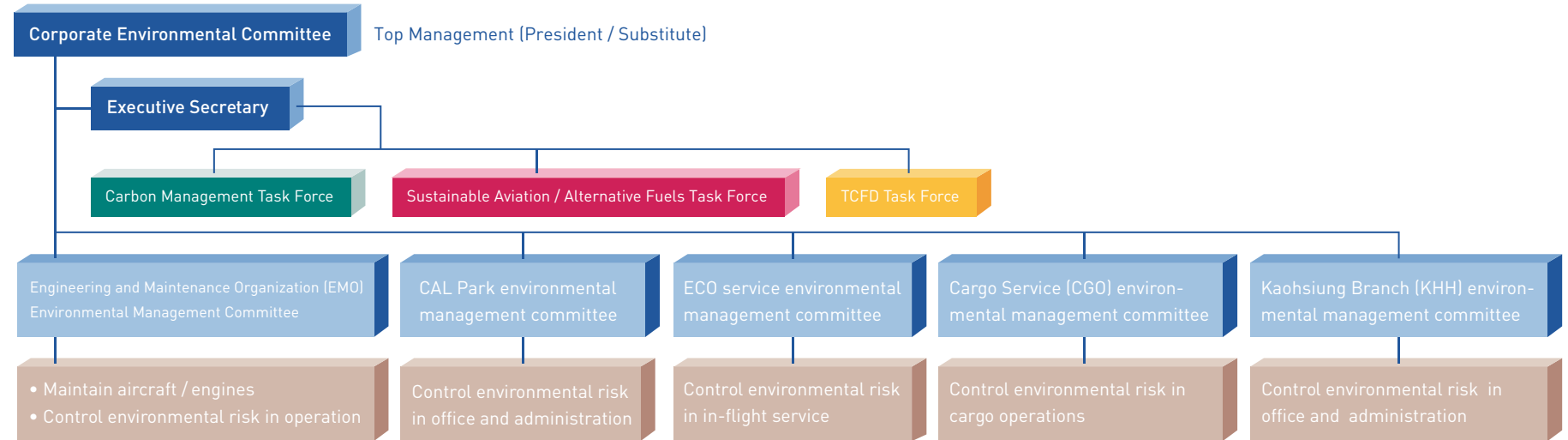


Environmental
and Energy Policy
Statement

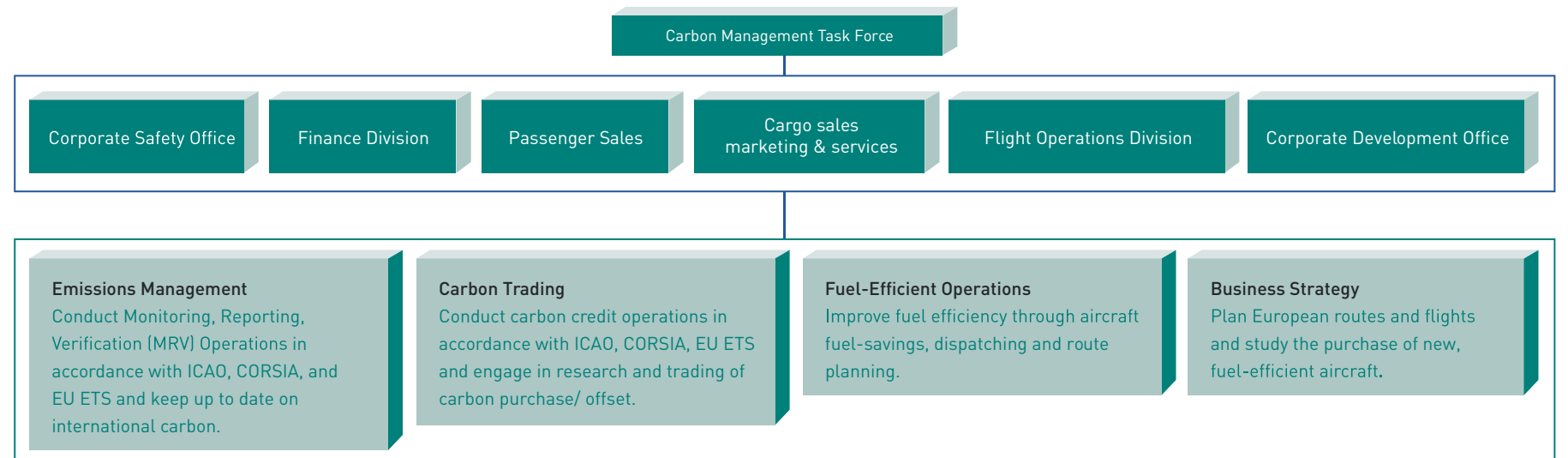
CAL Environmental Management Operation Logics



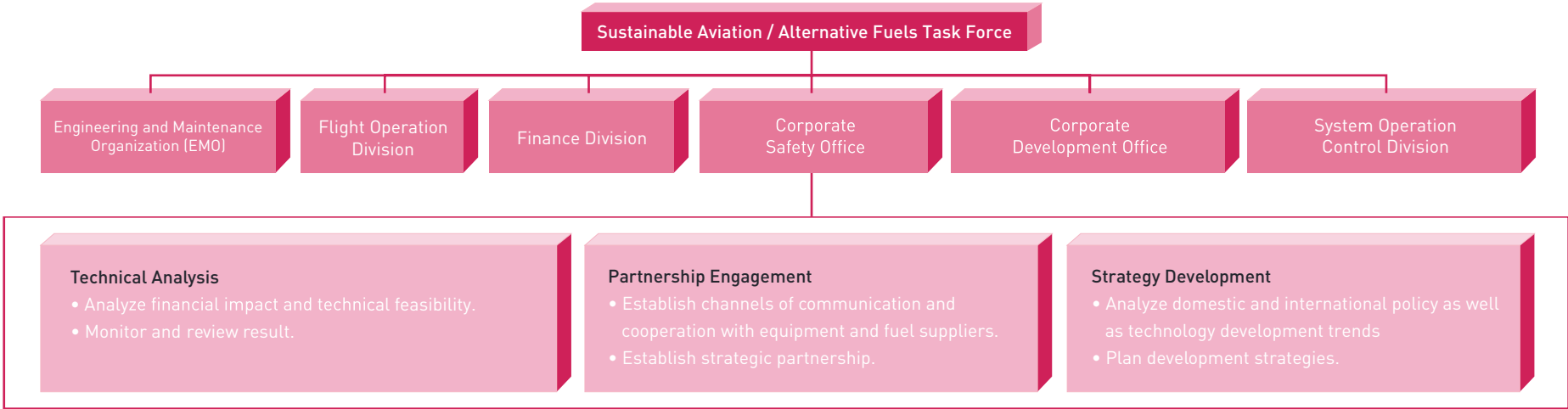
Corporate Environmental Committee Organization



Carbon Management Task Force Organization



Sustainable Aviation / Alternative Fuels Task Force Organization



Note: Established in April 2017, the Sustainable Aviation / Alternative Fuels Task Force is responsible for discussing laws and regulations, airworthiness of aircraft, technology, and procedures for supporting ground handling agencies, as well as developing corresponding strategies.

Implementing Environmental and Energy Management Systems

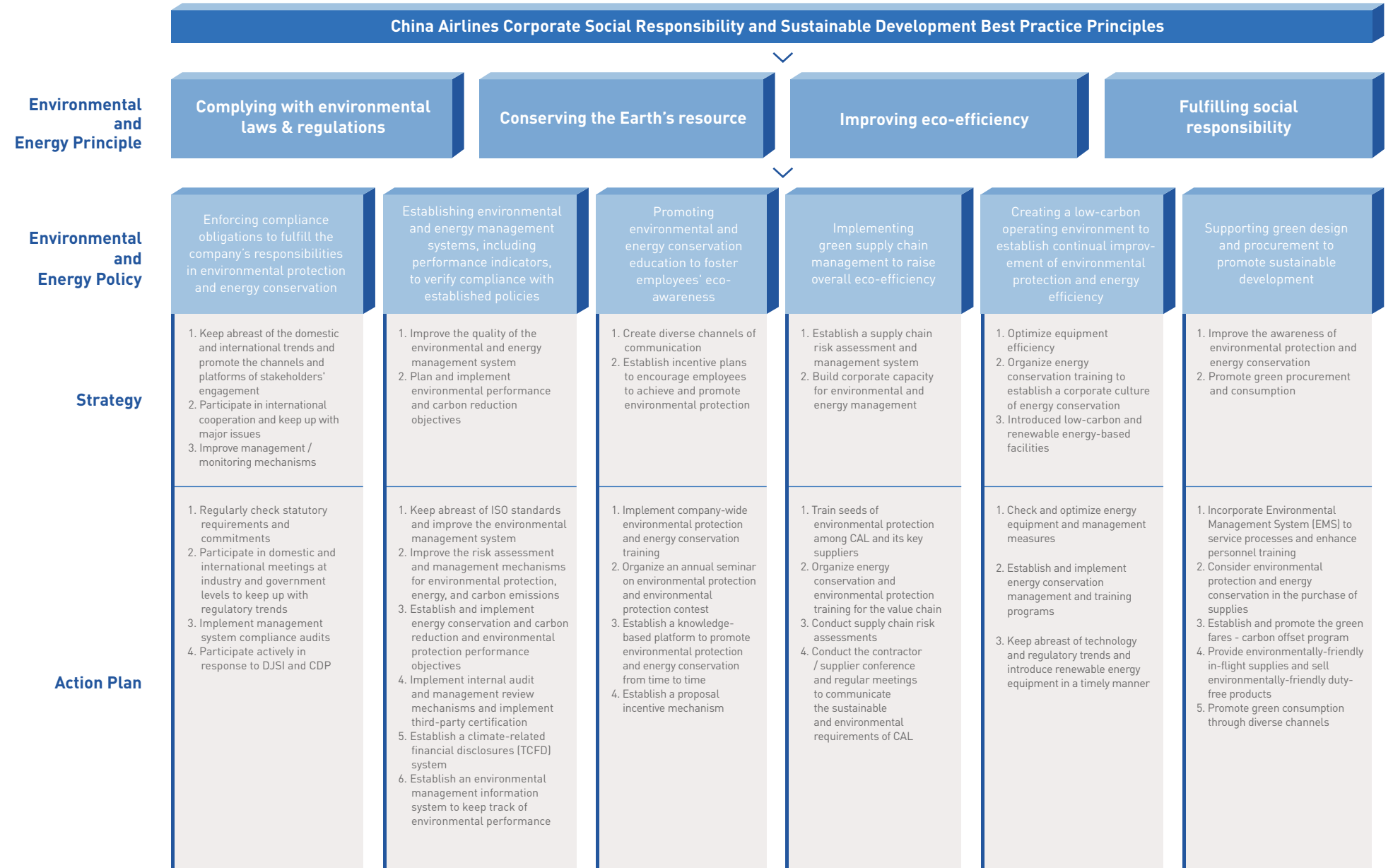
To extend environmental protection to daily operations, CAL has introduced many international standard management systems since 2009 to establish a sound corporate environmental management system covering GHG, environmental management, and energy management. CAL makes management strategies and action plans based on the environmental risks and opportunities identification. Since 2017, CAL has introduced a life cycle perspective to fully control the organization before and after operations. By taking issues of stakeholders' concern into account, CAL has further improved the level and vision of environmental and energy risk management in line with international standards for corporate sustainable development.

Standards for CAL's Environmental Management Systems

Standard	ISO 14064-1:2006 Greenhouse Gas Inventory Management System	ISO 14001:2015 Environmental Management System	ISO 50001:2011 Energy Management System
Time of Introduction	2009	2012 (Note)	2013
Scope	<ul style="list-style-type: none"> Global aviation fuel Ground operations in Taiwan, including CAL Park, EMO, Taipei Branch (B1, 1F, 2F, 9F), Songshan Branch, and Kaohsiung Branch. 	<ul style="list-style-type: none"> Aircraft / engine maintenance Flight operations management Cargo Service Passenger Service 	<ul style="list-style-type: none"> Aircraft / engine maintenance Flight operations management

Note: CAL introduced ISO 14001:2008 in 2012 and completed the transition of ISO 14001:2015 in 2017.

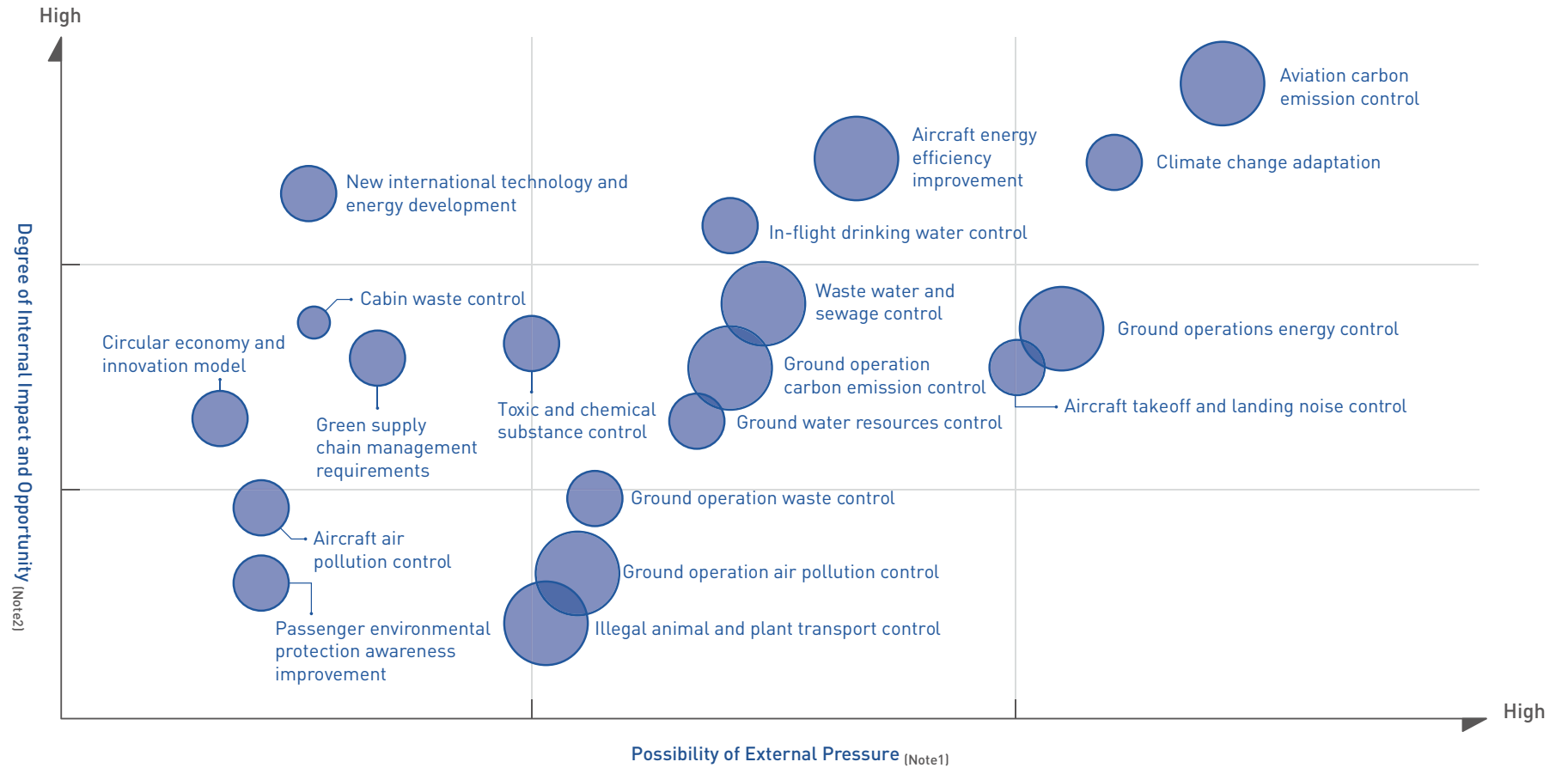
Implementing Environmental and Energy Management Principles and Policies



Identification of Environmental Risks and Opportunities (GRI 201-2)

CAL has identified the following environmental risk and opportunity matrix at the present stage through the aforesaid enterprise risk management framework and platform. Among these environmental risks, the top nine issues are 1. Aviation carbon emission control, 2. Climate change adaptation, 3. Aircraft energy efficiency improvement, 4. Ground operations energy control, 5. Aircraft takeoff and landing noise control, 6. In-flight drinking water control, 7. Waste water and sewage control, 8. Ground operation carbon emission control, and 9. Ground water resources control. CAL has included these nine issues in the scope of its environmental risk management for follow-up and continuous improvement.

CAL Environmental Risk and Opportunity Matrix



Note 1: X-axis represents the possibility of the issue in the global trend of development and control.

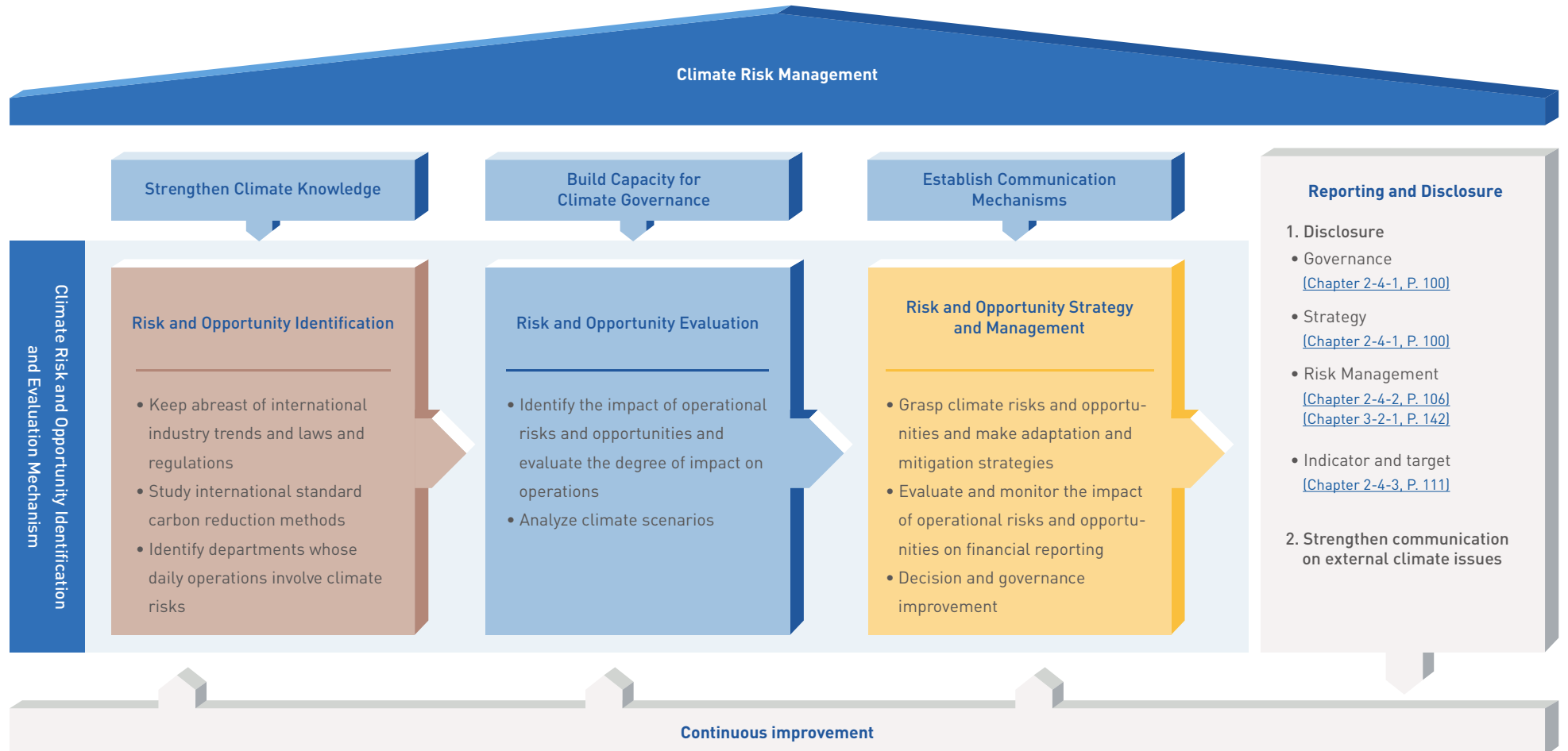
Note 2: Y-axis represents the degree of impact and opportunity of the issue on CAL.

● The size of the circle represents the adaptability of CAL to the issue (larger circle means better action and adaptation).

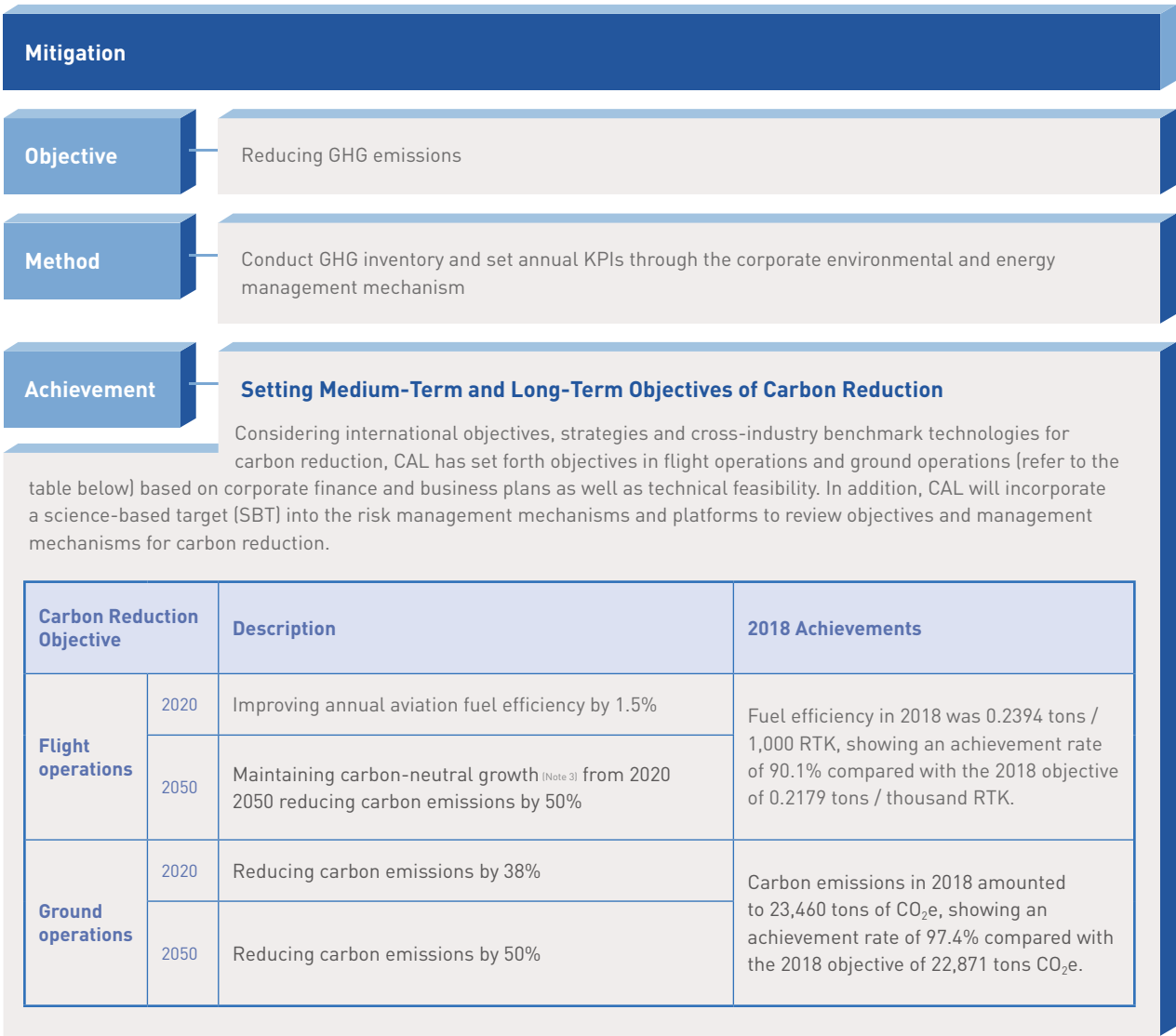
2-4-2 Climate Change Mitigation and Adaptation

Recognizing the direct impact and importance of climate issues on the aviation industry, CAL has set three objectives in flight operations and ground operations in response to the voluntary carbon reduction initiatives of the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA), and civil aviation associations of the Republic of China. In 2018, CAL further introduced the Task Force on Climate-Related Financial Disclosures (TCFD) and planned to establish the TCFD Task Force, to facilitate early identification of risks and opportunities and improve carbon management and adaptation to the climate. In addition, CAL was invited by TCFD to participate in the TCFD project in September 2018, making it the first airline in Taiwan to [support TCFD](#).

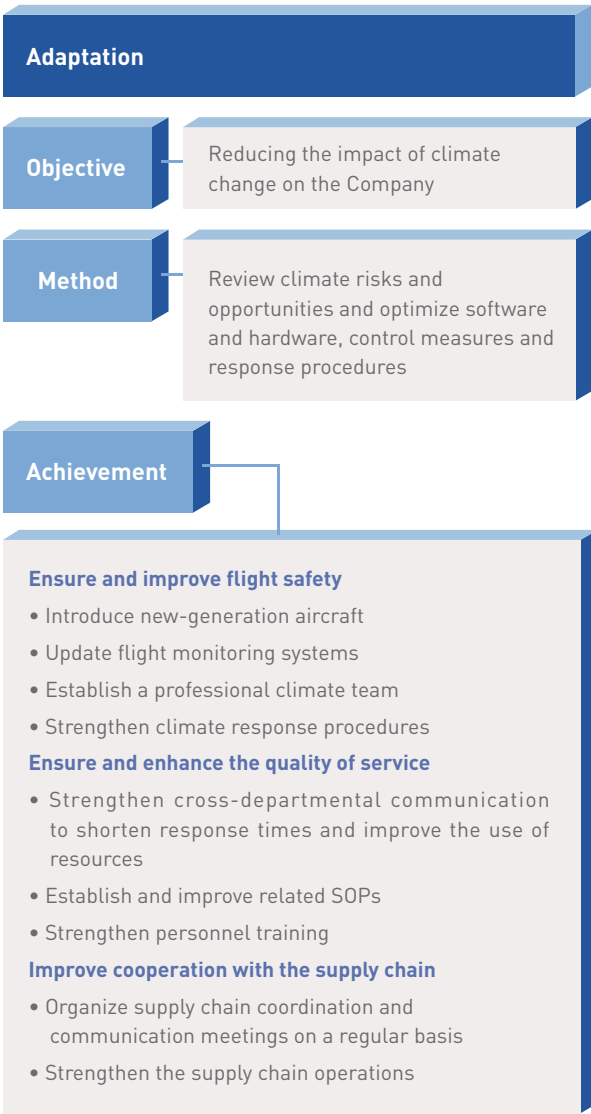
Climate Risk Management



Climate Change Mitigation and Adaptation



Note 1: The base year of aviation fuel efficiency and ground operations is 2009.
 Note 2: The base year of flight operations is 2005.
 Note 3: In line with the carbon-neutral growth set by the goal of ICAO CORSIA (CNG 2020).
 Note 4: For more information on performance of carbon reduction, please refer to [Objectives and Plans](#) of Management Approach in 2-4 Environment.



Properly analyze and manage climate risks and opportunities

Issue: International regulations pertaining to environmental protection and carbon management (such as International Civil Aviation Organization (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and EU ETS)			
Type of Risk	Duration of Impact (Level of Impact)	Aspect of Impact	
Transformation risk	Short-term and medium-term (Medium)	Business development / Passenger service / Cargo service / Flight safety / Supply chain	
Risk and Financial Impact	Opportunity and Financial Benefits	Management Method	Authority / Review
<ul style="list-style-type: none"> Carbon management measures have increased, leading to an increase in compliance costs Governments have levied taxes for environmental protection and energy, leading to an increase in operating costs Authorities in charge of environmental protection have regulated the declaration and control of carbon emissions for the transportation sector (including air transport), leading to an increase in administrative costs Countries have implemented stricter punishments for environmental violations, leading to an increase in financial risks 	<ul style="list-style-type: none"> Improve fuel efficiency and reduce costs of energy purchase, offsets, and compliance Gain extra earnings derived from the sale of carbon rights Implement a carbon emissions information system to improve work efficiency and reduce administrative costs 	<ul style="list-style-type: none"> Enhance employee training to strengthen the ability to identify risks and opportunities Communicate with the public sectors and international organizations Establish a carbon emission monitoring and management system Renew fleets and equipment Plan and implement measures for carbon reduction Follow trends of fluctuations in the carbon market and manage carbon rights 	<ul style="list-style-type: none"> The President makes decisions to ensure the corporate sustainable development Business operations and environmental meetings review the countermeasures of Corporate Development Office, Corporate Safety Office, Finance Division, and business units

Issue: Energy transformation			
Type of Risk	Duration of Impact (Level of Impact)	Aspect of Impact	
Transformation risk	Medium-term and long-term (High)	Business development / Passenger service / Cargo service / Flight safety / Supply chain	
Risk and Financial Impact	Opportunity and Financial Benefits	Management Method	Authority / Review
<ul style="list-style-type: none"> Oil prices have increased, leading to an increase in oil costs Long-term oil supply may be insufficient, leading to flight abnormalities 	<ul style="list-style-type: none"> Increase energy efficiency and reduce energy expenditure Introduce new fleets and facilities to enhance brand competitiveness and revenue Use alternative fuels to enhance brand efficiency and revenue 	<ul style="list-style-type: none"> Ensure stable supply of oil Continue to evaluate the introduction of new technologies (new energy-saving flights and fuel-saving technologies) Improve depreciation planning and financial management Promote the domestic development of sustainable aviation fuels 	<ul style="list-style-type: none"> The President makes decisions to ensure the corporate sustainable development Business operations and environmental meetings review the countermeasures of the Corporate Development Office, Corporate Safety Office, and the Finance Division

Issue: Corporate reputation and low-carbon image			
Type of Risk	Duration of Impact (Level of Impact)	Aspect of Impact	
Transformation risk	Short-term and medium-term (Low)	Business development / Passenger service / Cargo service	
Risk and Financial Impact	Opportunity and Financial Benefits	Management Method	Authority / Review
<ul style="list-style-type: none"> Consumers value environmental protection and carbon reduction, causing an impact on the brand trust and revenue The increasing awareness of carbon reduction has changed the demand for air transport 	<ul style="list-style-type: none"> Facilitate communication with stakeholders about CAL's concept and practice of environmental protection to pursue recognition and support and improve corporate reputation and brand value Support and conform to the government's environmental policies and enhance industrial cooperation to improve corporate competitiveness 	<ul style="list-style-type: none"> Continue to strengthen communication with stakeholders and participate in scientific research and international evaluation of environmental sustainability to improve the corporate image of environmental sustainability Strengthen employee training on environmental protection and energy conservation and organize related activities to improve employees' awareness of environmental protection Enhance cooperation with low-carbon product suppliers at home and abroad to improve the supply chain sustainability 	<ul style="list-style-type: none"> The President makes decisions to ensure the corporate sustainable development Business operations and Corporate Sustainability Committee meetings review related departments

Issue: Other indirect social / economic impacts			
Type of Risk	Duration of Impact (Level of Impact)	Aspect of Impact	
Transformation risk	Medium-term and long-term (Medium)	Business development / Passenger service / Cargo service / Supply chain	
Risk and Financial Impact	Opportunity and Financial Benefits	Management Method	Authority / Review
<ul style="list-style-type: none"> Vector mosquitoes and infectious diseases have increased and attraction of eco-tours (due to changes in the ecosystem) has decreased, causing tourism and freight service to decrease The awareness of carbon reduction has increased, leading to a decrease in air transport Climate change has an impact on social economy and tourism, leading to a decrease in air transport 	<ul style="list-style-type: none"> The change in customer behavior has increased the demand for low-carbon air transport The image of environmental protection helps improve consumers' recognition and corporate competitiveness 	<ul style="list-style-type: none"> Launch an online booking system to increase convenience and reduce carbon emissions Improve fleets and aircraft equipment and introduce the Eco Travel Carbon Offsetting program to promote green / low-carbon opportunities Develop a variety of new products / services (such as direct flights) to improve performance and meet market needs Understand low-carbon economy and transport issues and market models to create opportunities and competitiveness 	<ul style="list-style-type: none"> The President makes decisions to ensure the corporate sustainable development Business operations and Corporate Sustainability Committee meetings review related departments, analyze material issues, and keep abreast of market trends and changes in the business environment

Issue: Risks of flight safety derived from increased frequency of extreme weather (such as typhoon, heavy rainfall, and snowstorm)			
Type of Risk	Duration of Impact (Level of Impact)	Aspect of Impact	
Physical risk	Short-term and medium-term (Medium)	Business development / Passenger service / Cargo service / Flight safety / Supply chain	
Risk and Financial Impact	Opportunity and Financial Benefits	Management Method	Authority/Review
<ul style="list-style-type: none"> Abnormal climate, such as floods, strong winds, rain, and fog, causes changes or cancellation of flights, blockage of ground access, and obstacles to freight transport, leading to an increase in operating costs (transfer and passenger arrangements) Extreme climate affects the supply of raw materials and market prosperity, leading to a decrease in passenger load and revenue 	<ul style="list-style-type: none"> Enhance the capability of emergency responses to improve the quality of service and reputation Handle customers' needs properly in case of changes or cancellation of flights due to extreme climate to benefit royalty and customer retention 	<ul style="list-style-type: none"> Expand and strengthen operating procedures and contingency plans and enhance operator training to improve coordination and operating efficiency across the organization Introduce weather professionals to increase the accuracy of weather forecasts and advance flight scheduling Improve coordination and partnership in the supply chain management to ensure safe freight and passenger transport 	<ul style="list-style-type: none"> The President makes decisions to ensure the corporate sustainable development Senior Vice President supervises, and System Operation Control Division convenes the safety management meetings of related departments for overall management and deployment

Issue: Effect of the rise in average temperature and uneven rainfall intensity on the headquarters and branches			
Type of Risk	Duration of Impact (Level of Impact)	Aspect of Impact	
Physical risk	Long-term (Low)	Business development / Passenger service / Cargo service / Flight safety / Supply chain	
Risk and Financial Impact	Opportunity and Financial Benefits	Management Method	Authority/Review
<ul style="list-style-type: none"> The rise in average temperature causes energy consumption and costs to increase Due to the change in rainfall pattern, droughts happen frequently and last longer, affecting water supply, quality of service, health and safety, and food safety and leading to increased costs 	<ul style="list-style-type: none"> Plan renewable energy to reduce the dependence on fossil fuels and electricity and derivative costs Develop or introduce water-saving measures in manufacturing processes, such as reducing water consumption and its cost Market the water-saving measures technology to increase revenue Improve service procedures and tools (such as new menus) and develop new ecological attractions to increase revenue and competitiveness 	<ul style="list-style-type: none"> Set annual goals of carbon reduction and take energy-saving measures to reduce unnecessary waste of resources and energy Plan renewable energy facilities and apply for renewable energy certificates Improve measures for water saving, water storage, and rainfall harvest Introduce the cleaning plan and obtain the agent right of regional markets Strengthen the management and quality of drinking water Improve service procedures and innovate the business model 	<ul style="list-style-type: none"> The President makes decisions to ensure the corporate sustainable development Business operations and environmental meetings review related departments

2-4-3 Achievements in Environmental Sustainability (GRI301-1, 303-2, 303-3, 303-4, 303-5)

In 2018, CAL continued to focus on the following tasks: improving environmental and energy management, strengthening carbon management, building capacity for supply chain environmental management, and promoting environmental awareness. The Corporate Environmental Committee, its five environmental management committees, and functional task forces convened meetings regularly or from time to time to improve environmental performance and ecological efficiency. For more information on environmental performance, refer to [Appendix - Environmental Performance](#).

TASK 1

Improving Environmental and Energy Management

In 2017, CAL conducted the transition of ISO 14001:2015 and completed the third-party verification. The life cycle perspective, stakeholder engagement, and risks and opportunities were integrated into the environmental management systems and management reviews. To better understand and respond to the global business risks, CAL planned and conducted the survey of environmental risks and opportunities at outstations in 2018 and included related results in the scope of risk management of the Corporate Environmental Committee.



Key Achievement 1: Survey of Environmental Risks and Opportunities at Outstations

- ✓ **Object:**
CAL conducted a survey at global outstations / offices through a questionnaire in 2018.
- ✓ **Objective:**
The purpose of the survey is to understand the environmental practices of outstations (including degree of compliance) and communicate CAL's environmental and energy policy.
- ✓ **Questions:**
 - 1st aspect: Environmental laws and regulations
 - 2nd aspect: Resource (energy) consumption and energy conservation practices
 - 3rd aspect: Handling of environmental incidents
- ✓ **Performance:**
 - 1. Coverage rate > 80%
 - 2. Understood key environmental controls and identified key environmental risks at outstations
 - 3. Kept abreast of global trends of issues at outstations, including cabin waste and use of GHG and energy
- ✓ **Follow-ups:**
 - 1. Establish guidelines and strengthen the communication of CAL's environmental and energy policy
 - 2. Collect information on the compliance of outstations and update of regional technical regulations to identify and control risks and opportunities immediately
 - 3. Keep abreast of international standard practices of environmental production and energy conservation



Key Achievement 2: Setting of Objectives of Low-carbon Operations

In 2017, the introduction of the elevator power regeneration system and power-saving measures at the Administration Building won CAL a Diamond-grade green building label granted by the Ministry of the Interior. In 2018, CAL continued to strengthen the management of waste and water resources, and its Crew Training Building won the Diamond-grade green building label once again.

To achieve low-carbon business operations in line with the government's renewable energy policy, since 2016, CAL has evaluated the installation of solar photovoltaic equipment at the headquarters and invited related government agencies and industries to discuss how to eliminate the safety concerns for flight takeoff / landing. Finally, the authorities in charge approved the installation of a solar photovoltaic system with a capacity of 99KW at the Simulator Building, which is expected to be inaugurated in 2019.

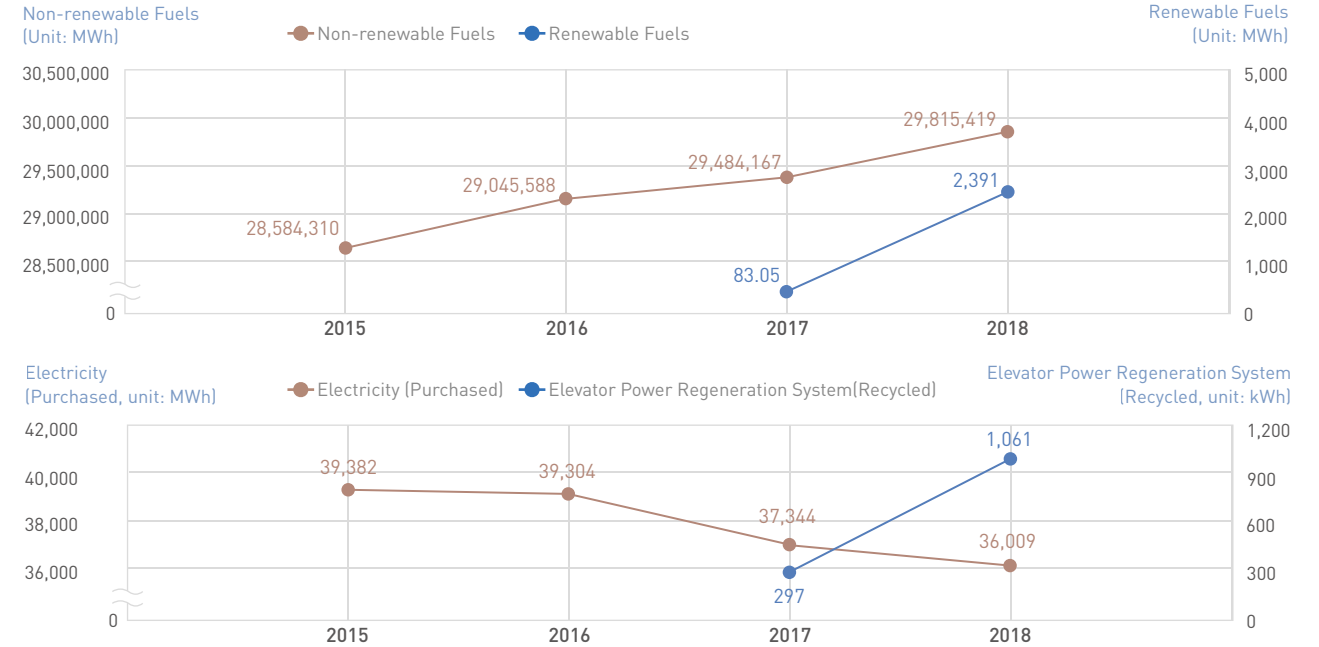
Resource Management

Use of Energy

In 2018, electricity used at each site went downward with the total consumption of 36,009 kWh, a decrease of 3.57% compared to 2017. To achieve the objective of carbon-neutral growth in the aviation industry after 2020, CAL will strive to improve the use of renewable energy. Since November 2017, CAL has taken the lead to add 10% sustainable aviation fuels to A350-900 aircraft after the 10th one.

As of the end of 2018, CAL has added 10% sustainable aviation fuels to five A350-900 aircraft. In terms of ground operations, two sets of the elevator power regeneration system have been installed at the Crew Training Building since Fourth Quarter of 2017; in addition, solar photovoltaic panels are expected to be inaugurated in 2019.

Energy Consumption



Note 1: Non-renewable fuels include gasoline, diesel, liquefied petroleum gas (LPG), liquefied natural gas (LNG), and aviation fuel. All CAL aircraft are counted as part of the calculation of aircraft fuel consumption.

Note 2: Renewable fuels include sustainable aviation fuels. Since November 2017, 10% sustainable aviation fuels have been added to A350 aircraft. As of the end of 2018, CAL has added 10% sustainable aviation fuels to five A350 aircraft.

Note 3: The areas where electricity is purchased are calculated include parks (CAL Park, Taipei Branch, and Songshan Branch), EMO (Hangar 2, Hangar 3, and repair/maintenance center), and Kaohsiung Branch; electricity in 2016 contains 54,920 MWh from the construction of Novotel Taipei Taoyuan International Airport II in CAL Park.

Note 4: Since November 2017, 2 sets of the elevator power regeneration system have been installed at the Crew Training Building with high utility of elevators. Electricity is recycled and reused through the anti-motoring effect and the internal grid.

Noise Management

Aviation noise pollution includes aircraft noise and airport noise it causes in turn, such as the roar of the engines during takeoff, noise while climbing, from discharging gases at cruising altitude, from engine fans while landing, and reflected horizontal echoes made by the buildings alongside the runway. As noiseless engines are currently in the process of development, CAL takes the following measures to reduce the impact of noise on local communities and front-line employees without prejudice to flight safety:

1. All CAL aircraft (777-300ER, 747-400, 737-800, A350-900, A330-300, and A340-300) have conformed to international noise standards for low-noise aircraft (noise level for Chapters 3 and 4 of ICAO Annex 16); in particular, noise of A350-900 is 16 dB lower than the current standards and 20% less than that of the same model of competitors.
2. Implement flight operations following the Noise Abatement Procedures posted by each airport;
3. Encourage the flight crew to employ the continuous descent approach (CDA) to lower noise level and reduce fuel consumption;
4. Pay noise charges according to regulations of each country’s airports on noise prevention;
5. Collect international information through international exchange platforms, such as IATA, to continue to carry out noise reduction.

Use of Water Resources (GRI 303-1)

In 2018, CAL consumed 148,216 L of water, an increase of 4.93% compared to 2017, mainly due to the pipe leakage in the construction near the EMO, which was repaired immediately after discovery, and increased use of air-conditioning in summer. To enhance water resources management, CAL will continue to control the overall water consumption by improving management and monitoring measures, keeping track of the use of water resources, and identifying risks and opportunities relating to water resources.

Water Resources Consumption

Water Resources Consumption					
Item	Unit	2015	2016	2017	2018
Water Con-sumption	1,000 tons	135.72	136.35	141.26	148.22
Amount Recycled	1,000 tons	1.42	1.59	1.89	31.94
Recycling Rate (Note1)	%	1.05%	1.17%	1.34%	21.55%

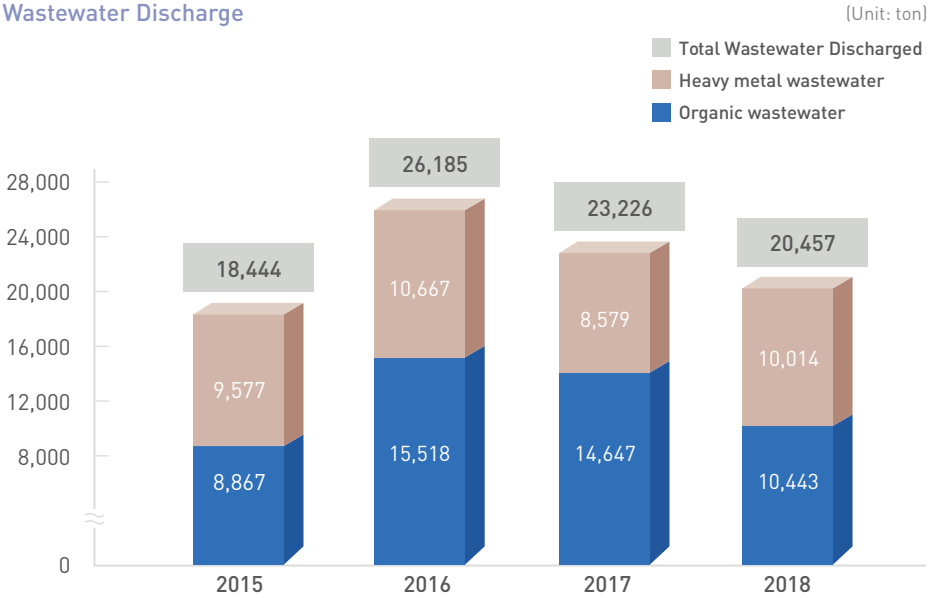
Note 1: Water is sourced from Taiwan Water Corporation. The scope of water consumption covers the following areas: CAL Park, EMO, Songshan Branch, and Taipei Branch.

Note 2: In 2018, water meters were installed at CAL Park. EMO and CAL Park were included in the calculation of the amount of recycled water. In and before 2017, only EMO was included in the calculation of the amount of recycled water.

Wastewater Management and Recycling (GRI 306-1)

Wastewater is bound to be produced in the aircraft maintenance process, which causes heavy damage to our environment and needs to be properly treated before discharge. Based on the concept of full recycling and treatment, CAL has established two wastewater treatment plants in the maintenance park to handle electroplating wastewater (containing heavy metals such as chromium and cadmium) produced in the engine maintenance process and organic wastewater produced in the aircraft maintenance process through tertiary treatment respectively before discharge to the sewage treatment system at Taiwan Taoyuan International Airport. In the first line of control, well-qualified employees are trained to examine the temperature, hydrogen ion, conductivity, grease, and hexavalent chromium of effluents on a regularly basis. Wastewater is also included in the second line and third line of control over corporate environmental risks to be closely monitored.

Wastewater Discharge



Note 1: Everyday sewage is monitored according to the government’s environmental protection regulations, collected, and sent through the sewage systems to the sewage treatment plants at the Taiwan Taoyuan International Airport, Taipei City, and Kaohsiung City to be processed.

Note 2: Water is sourced from Taiwan Water Corporation.




Pollution Prevention

Air Pollution (GRI 305-7)


In gas emitted by aircraft engines, greenhouse gas leads to climate change; other pollutants, such as NO_x, also have a great impact on local air quality. Since 2014, CAL has introduced 777-300ER and A350-900 to replace A340-300 and part of 747-400. Mandarin Airlines has planned to introduce nine ATR72-600 aircraft. In 2017 and 2018, 3 and 2 ATR aircraft were introduced, respectively; in addition, four ATR aircraft are expected to be introduced in 2019-2020. By introducing these next-generation fleets, CAL improved fuel efficiency and reduced NO_x emitted at take-off and landing.

SO_x and NO_x Emissions of CAL Group

Passenger Aircraft

Item		Unit					Unit						
			2015	2016	2017	2018		2016	2017	2018	2016	2017	2018
SOx	Emissions	Ton	63.23	58.50	57.82	64.46	Ton	19.78	22.12	26.62	9.96	13.19	15.52
	Emission efficiency	G / RTK	0.0149	0.0133	0.0126	0.0134	G / RTK	0.1330	0.1453	0.1833	0.0420	0.0413	0.0416
NOx	Emissions	Ton	659.13	609.79	602.70	671.94	Ton	206.16	230.61	277.53	47.66	103.78	161.77
	Emission efficiency	G / RPK	0.0178	0.0160	0.0150	0.0161	G / RTK	1.3860	1.5144	1.9107	0.4374	0.4303	0.4335

Freight Aircraft

Item		Unit				
			2015	2016	2017	2018
SOx	Emissions	Ton	12.54	12.59	13.26	13.79
	Emission efficiency	G / RTK	0.0028	0.0029	0.0028	0.0029
NOx	Emissions	Ton	130.66	131.24	138.17	143.74
	Emission efficiency	G / RTK	0.0291	0.0302	0.0295	0.0300

Note 1: SO_x is calculated based on the methodology of the American Environmental Protection Agency:
Total annual emissions = Number of flights x 0.000891, where 0.000891 is the emission factor (Tons / LTO).

Note 2: NO_x is calculated based on the methodology of the American Environmental Protection Agency:
Total annual emissions = Number of flights x 0.009288, where 0.009288 is the emission factor (Tons / LTO).

Note 3: LTO refers to the landing take-off.

Note 4: Mandarin Airlines and Tigerair Taiwan had no freight aircraft.

Waste Management (GRI 306-2)

CAL manages waste according to five main principles: refuse, reduce, reuse, recycle, and repair. CAL's objective is to recycle 100% of waste and increase the waste recycling rate year by year. For more information on objectives, refer to [Commitment and Long-Term Goals](#) in this chapter. Considering air transport as the core business of the aviation industry, CAL has attended meetings organized by the IATA Cabin Waste Task Force. Since 2017, CAL has collected the total weight of cabin waste and waste recycled as the basis for future management strategies. In 2018, waste produced from ground operations was also added to the scope of collection.

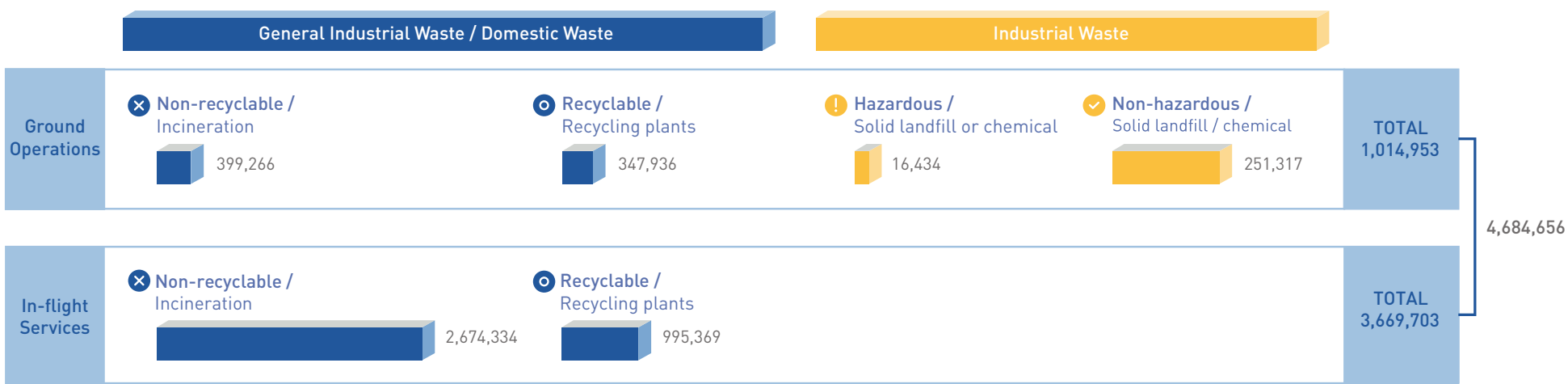
Waste Information

(Unit:kg)

Item		Operation	Actions Taken	2015	2016	2017
Ground Operations	General industrial waste / domestic waste	General maintenance / everyday life use	Appoint certified waste disposal companies to clear away waste, keep a record of disposal, and regularly report to the government according to the law (physical / burning / heat treatments)	380,662	419,689	456,997
	Hazardous industrial waste	Needs of emergency power in flight and ground operations	Appoint certified waste disposal companies to clear away waste, keep a record of disposal, and regularly report to the government according to the law (chemical / solid landfill)	12,728	13,430	16,758
	Cadmium-containing batteries	Maintenance of aircraft and engines	Appoint certified waste disposal companies to clear away waste for export and report to the government routinely according to the law	1,445	1,920	1,782
In-flight services	General industrial waste / domestic waste	In-flight catering and supplies	Appoint certified waste disposal companies to clear away and destroy kitchen waste in accordance with international quarantine regulations and collect, sort, and send domestic waste to the incinerators at airports for incineration	-	-	3,417,870
Total (Non-recyclable Amount)				394,835	435,039	3,893,407

Waste Information in 2018

(Unit:kg)



Note 1: The scope of ground operations for 2015-2017 includes EMO and CAL Park.

Note 2: Since 2017, the total cabin waste returning to Taoyuan has been included in the statistics.

Note 3: The scope of collection of data relating to ground operations in 2018 is described below:

- General industrial waste / domestic waste: EMO, CAL Park, Kaohsiung Branch, and VIP rooms of four stations (Taoyuan, Songshan, Kaohsiung and Tainan).
- Industrial waste: Hazardous industrial waste - Type A / B / C waste stipulated in the Standards for Defining Hazardous Waste established by the Environmental Protection Administration, Executive Yuan and cadmium-containing batteries; Non-hazardous industrial waste - Type D / R waste stipulated in the Standards for Defining Non-hazardous Waste established by the Environmental Protection Administration, Executive Yuan.

Note 4: Actions taken are described below:

- Recyclable: Waste disposal companies are entrusted to dispose of recyclable waste on a regular basis and send waste to qualified recycling plants for disposal;
- Non-recyclable: Non-recyclable waste is handled in accordance with the law based on the following types of waste:
 - General industrial waste / domestic waste, hazardous industrial waste, and cadmium-containing batteries;
 - In-flight service waste: Certified third-party companies are appointed to clear away and destroy kitchen waste in accordance with international quarantine regulations and collect, sort, and send domestic waste to the incinerators at airports for incineration.
- Cabin waste and ground waste: Third-party waste disposal companies are appointed to clear away cabin waste and ground waste through the incineration plant converting heat to generate electricity. In 2018, the total amount of cabin waste and ground waste reached 3,341,350 kg, including 2,288,799 kg of waste produced from conversion from incineration to electricity and 1,052,551 kg of waste produced from incineration and other disposal.

Environmental Expenditure

In accordance with the Taoyuan City Self-government Ordinance for Developing a Low-Carbon City that took effect in 2017, CAL integrated 88 Category I, Category II and Category III eco-products. The main reason for the increase in green procurement in 2018 compared to 2017 was the replacement of apron repair vehicles. Every year, CAL also invests in green facilities, promotes maintenance projects, and pays for waste disposal and noise prevention.

CAL Investment in Green Facilities and Green Procurement

(Unit: TWD 1,000)

Item	2015	2016	2017	2018
Capital Investments (Note 1)	16,798	13,993	22,769	24,038
Operating Expenses (Note 2)	7,294	13,385	11,730	27,598
Waste Disposal	2,417	4,164	3,315	4,536
Noise Prevention	181,704	185,864	188,485	190,357
Total Investment Amount	208,213	217,406	226,299	246,529

Note 1: Green facilities include the depreciation of pollution prevention equipment, operational maintenance, hardware investments, environmental testing, and related projects.

Note 2: Green procurement includes Category I, II, and III products prescribed in the Regulations for Priority Procurement of Eco-Products (dated January 15, 2001).

TASK 2




Strengthening Carbon Management [GRI 302-1, 302-2, 302-4, 302-5, 305-1, 305-2, 305-3, 305-5]

In 2012, CAL signed the OnePointSM, a low-carbon solution agreement, with GE Group to develop a strategy for improving fuel efficiency through its patented decision-making software and technology, aiming to increase the annual fuel efficiency by 1.5 percent on average by 2020.

In 2018, CAL developed a plan for passenger / freight transport scheduling optimization, leading to an increase in total fuel consumption by 28,823 tons (1.28%) compared to 2017; revenue ton kilometer (RTK) increased 254,573 thousand ton-km (2.74%) compared to 2017; the overall fuel efficiency was 0.2394 tons / 1,000 RTK. CAL did not meet the target set for 2018 (0.2179 tons / 1,000 RTK) but achieved an increase of 1.44% compared to 2017.

GHG Emissions of CAL Group

(Unit: Tons CO₂e)

Company	GHG Scope	Item	2015	2016	2017	2018
	SCOPE 1	Flight operations	6,929,355	7,042,520	7,149,309	7,229,903
		Ground operations	5,064	4,663	5,004	3,511
	SCOPE 2	Ground operations	20,676	20,831	20,677	19,949
	SCOPE 3	Ground operations	303,273	2,070,003	1,627,649	1,644,656
	SCOPE 1	Flight operations	294,735	263,016	259,695	255,241
	SCOPE 1	Flight operations	106,493	233,927	284,791	336,684

Note 1: The statistics contain 100% of the aviation fuels used by CAL, Mandarin Airlines, and Tigerair Taiwan.

Note 2: GHG emissions assessment agencies: BSI (2011-2013, 2015-2016) and DNV GL (2014, 2017, 2018).

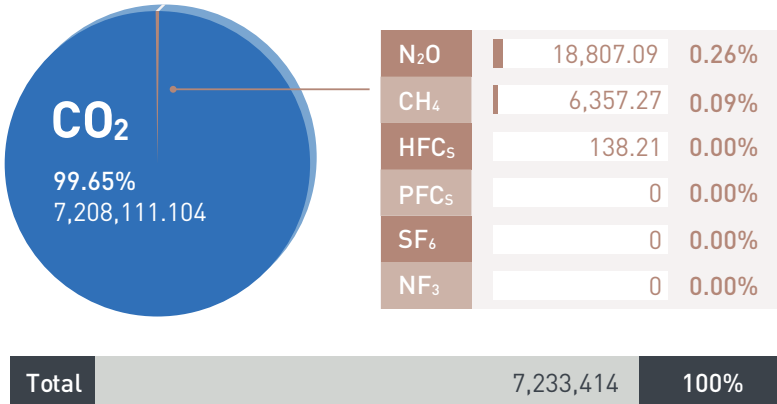
Note 3: The calculation range of Scope 3 is according to the 15 categories of GHG protocol, covering products purchased, capital goods, and fuel and energy activities not included in Scope 1 and Scope 2, transportation and distribution, waste treatment, employee commuting, lease assets, and investments. The emissions of energy activities, lease assets, and employee commuting (1,644,656 tons CO₂e) in 2018 passed external verification.

Note 4: In line with the revised power factor of the Energy Bureau, CAL updated the total GHG Scope2 emissions of 2015-2017.

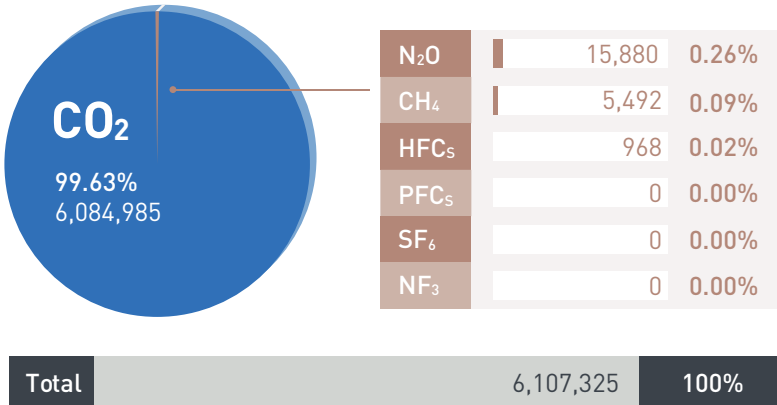
GHG Emissions

(Unit: Tons CO₂e / Year)


2018





2009



Aviation Fuel Efficiency (GRI 302-3, 305-4)

	Item	2009	2015	2016	2017	2018	2018 Compared to 2017	2018 Compared to 2009
	Fuel Consumption (Ton)	1,927,803	2,189,971	2,225,231	2,256,114	2,284,937	+28,823	+357,134
	CO ₂ Emissions (Ton)	6,099,820	6,929,355	7,009,478	7,106,760	7,197,551	+90,791	+1,097,731
	Transport Volume (1,000 RTK)	7,721,089	8,625,831	8,727,407	9,289,687	9,544,260	+254,573	+1,823,170
	Fuel Efficiency (Fuel / 1,000 RTK)	0.2497	0.2539	0.2550	0.2429	0.2394	-1.44%	-4.12%
	Carbon Emission Intensity (Ton CO ₂ / 1,000 RTK)	0.7865	0.7997	0.8032	0.7650	0.7541	-1.44%	-4.12%

 (Data)	Item	2015	2016	2017	2018	2015	2016	2017	2018
	Fuel Consumption (Ton)	93,149	83,124	82,075	80,667	35,451	73,931	90,006	106,406
	CO ₂ Emissions (Ton)	294,735	263,016	259,694	255,241	112,171	233,927	284,790	336,700
	Transport Volume (RTK)	180,588,442	148,746,615	152,280,881	145,250,697	131,718,937	237,326,458	319,553,946	373,184,769
	Fuel Efficiency (Fuel / 1,000 RTK)	0.5158	0.5588	0.5390	0.5554	0.2691	0.3115	0.2817	0.2851

 (Data)	Item	2015	2016	2017	2018	2015	2016	2017	2018
	Carbon Emission Intensity (Ton CO ₂ / 1,000 RTK)	1.6321	1.7682	1.7054	1.7572	0.8516	0.9857	0.8912	0.9022

Note 1: The lower the fuel efficiency and the carbon emission intensity, the better the performance.

Note 2: Carbon emission intensity (ton CO₂e / 1,000 RTK) = GHG emissions / Total RTK.

Key Achievement : Seminar on Sustainable Aviation Fuels

In response to the international trends of sustainable aviation fuels and technological development, CAL held the Seminar on Sustainable Aviation Fuels (SAF) and Expert Consultation Meeting at Novotel Taipei Taoyuan International Airport on December 21, 2018. Experts from the government, industry, and academia in Taiwan were invited to share international trends and domestic practices and work together to develop a strategy for SAF in the aviation industry.

More than 50 environmental experts from the Civil Aeronautics Administration, Environmental Protection Administration, Industrial Technology Research Institute, Taiwan Power Company, Formosa Plastics Group, domestic airlines, and academia attended the seminar. The agenda of the seminar covered the international trends of SAF, A350-900 added with biofuels, development and strategy for biofuels in Taiwan, and technological development of biofuels in Taiwan; the expert consultation meeting explored in depth the bottlenecks and future strategies for the supply of SAF in Taiwan's aviation industry.



TASK 3

Building Capacity for Value Chain Environmental Management

To achieve the objectives of sustainable development, CAL endeavors to improve its capacity for sustainable environmental management and leads the value chain toward sustainability. In 2018, CAL continued to collect the GHG emissions across the Group and critical suppliers and implement ISO 14001:2015 by taking into account the life cycle perspective and the context of the organization to strengthen the value chain's capacity for environmental management. In addition to communicating the objectives of the environmental and energy policy, CAL also initiated the Environmental Seed Development Plan, which requested environmental seeds across the Group to be appointed to participate in training on environmental, energy, and climate risk management in hopes of building the capacity for environmental and energy risk management, and the Value Chain Environmental Risk Assessment Mechanism, which was tried out in China Pacific Catering Services and China Pacific Laundry Services Ltd. based on the industry and international practices to strengthen the environmental risk management.



Key Achievement 1:

Pilot Run of Value Chain Environmental Risk Assessment Mechanism

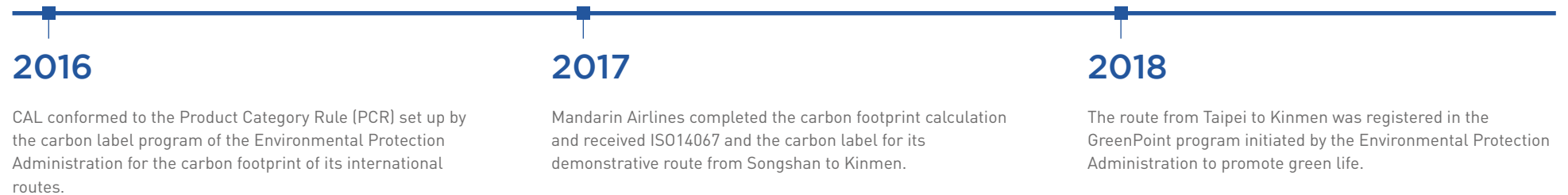
- ✓ **Object:**
11 critical value chain companies
- ✓ **Objective:**
The purpose of the assessment is to understand the environmental practices (including degree of compliance) and risks and opportunities in each industry
- ✓ **Questions:**
1st aspect: Environmental management
2nd aspect: Plan (P)
3rd aspect: Do (D)
4th aspect: Check (C)
5th aspect: Act (A)
- ✓ **Performance:**
 1. Coverage rate: 100%
 2. Classified industrial characteristics for core operations
 3. Controlled key environmental risks and opportunities
 4. Analyzed the environmental risk level
 5. Developed a risk management strategy
- ✓ **Follow-ups:**
 1. Establish guidelines and organize training on key environmental risk management
 2. Hold value chain environmental management meetings to address concerns through two-way communication



Key Achievement 2: Promotion of Environmental Practices of Value Chain Companies

Cooperating with value chain companies, CAL endeavored to achieve sustainable development goals and improve the overall quality of service and competitiveness across the Group.

1. Mandarin Airlines continued to implement the demonstrative route and promote the concept of green life



2. Dynasty Aerotech Int. introduced eco-cleaning technology to promote environmental sustainability in the transportation industry

CAL Group attaches great importance to water resources. Based on the characteristics of the aviation industry, aircraft cleaning is one of the high water consumption operations. In 2015, Dynasty Aerotech Int., having engaged in aircraft cleaning for a long time, signed the letter of intent with UUDS, making it Taiwan's only company to introduce eco-cleaning technology, Ecoshine.

Using nano-grade dry cleaning agents to clean aircraft by block, Ecoshine saves 99% of water consumption and has 96% biodegradable solvents; its low demand for cleaning sites and high cleaning effect extend the frequency of cleaning and shorten cleaning time, making it highly recognized by enterprises. Since 2016, 24 enterprises have used Ecoshine. Its outstanding effect won it the Environmental Excellence Award in the 12th Taoyuan City Outstanding Enterprise Award in 2018.



Ecoshine

TASK 4

Promoting Environmental Awareness

To implement the environmental and energy policy statement, CAL organizes the environmental training system every year to develop employees' awareness of environmental protection. Training programs are organized online or offline in Taiwan. To consolidate a sustainable brand image, CAL communicates the corporate concept and performance of environmental protection with stakeholders through social media and in-flight magazines in hopes of creating and spreading the awareness of green consumption.

Shape a culture of environmental protection

Item	Environmental training for all employees	Professional environmental training
Operation	Improve employees' identification and awareness of environmental sustainability and help develop good conduct and business habits, laying the foundation of environmental and energy management across the CAL Group.	<ul style="list-style-type: none"> Organize training on environmental and energy management for the related personnel of the Company and affiliates Appoints trainees to participate in external training and seminars as needed
2018 Achievements	<p>Environmental education CAL attaches great importance to environmental education for employees and requests all employees to participate in environmental management training.</p> <ol style="list-style-type: none"> In 2018, CAL organized training on the new environmental management system for all employees (including the stationed personnel of affiliates). The number of trainees reached 6,181. CAL also communicated with new employees regarding the corporate policies and approaches to environmental protection and energy conservation in the course, CAL and I. The achievement rate reached 100%. <p>Knowledge-based education</p> <ol style="list-style-type: none"> Environmental knowledge: In 2018, CAL published six articles and one ecological conservation report by E-mail or internal platforms. Environmental contest: In 2018, CAL called for all employees to contribute to the Environmental Icon Design contest. A total of 57 contributions were received, and 1,288 employees participated in voting. Cross-industry communication / visits: In 2018, CAL organized three crossindustry communication / visits to learn from other enterprises regarding the 	<p>practices of environmental sustainability and to promote CAL's concept of environmental protection.</p> <ol style="list-style-type: none"> The 4th Environmental Seed Development: Participate in this Taiwan University plan, and strengthen student's knowledge of corporate sustainability management.  <p>Visit to leading industry - TSMC</p>  <p>Cross-Industry Communication with Association of Atmosphere Protection in Taiwan</p> <ul style="list-style-type: none"> Organized 1 Group-wide training course on environmental and energy laws and regulations and GHG, respectively Organized 2 sessions of the Seminar on ICAO CORSIA Organized 2 sessions of the Seminar on Carbon Footprint and GreenPoint

Build an image of environmental protection

Item	Promotion of awareness of green consumption			Build the industrial environmental awareness	
Operation	Promote environmentally friendly awareness and consumer behavior	Promote green consumption	Optimize service processes and reduce waste and waste processing costs	Organize seminars	
2018 Achievements	<ul style="list-style-type: none"> • Closed windows in summer to reduce the costs of the Auxiliary Power Unit (APU) and airport energy consumed • Improved the labels of in-flight supplies, such as encouraging customers to reuse consumables • Selected 12 environment and ecology themed videos to play on the plane • Published 8 articles and reports via social media • Printed menus by recycled paper and soy ink and marked an environmental slogan on the last page of the menu for long-haul flights • Added the warning of an embargo on transport of endangered species on the Company website • The 2017 Annual Report was printed by 100% recycled paper and soy ink and marked with an environmental slogan. • The annual report is printed based on the need of each department. In terms of the volume printed, the Chinese and English version of the 2017 Annual Report was 300 and 400 less than that of the 2016 Annual Report, respectively. E-books are also encouraged. • Published CAL's environmental practices and electronic and mobile approaches to carbon reduction on in-flight magazines • Marked the Taipei-Kinmen carbon label on the website of Mandarin Airlines, supplies, check-in counter, boarding pass, in-flight magazines 	<ul style="list-style-type: none"> • Since July 2017, eco-friendly products in the duty-free and home-delivery sales catalogs have been marked "Eco-friendly." • Updated and disclosed the carbon footprints of routes • Established and promoted the Eco Travel Carbon Offsetting Program 	<ul style="list-style-type: none"> • Adopted local ingredients for in-flight meals and Group catering and put a ban on food ingredients from endangered species • Implemented waste management • Incorporated the concept of environmental protection into the design of in-flight meals and supplies • Promoted and implemented electronic and information service • Adopted lightweight paper to save the weight and printing ink of in-flight magazines 	<ul style="list-style-type: none"> • Helped the Flight Safety Foundation organize the ICAO CORSIA Workshop in response to international regulations 	<ul style="list-style-type: none"> • Organized the Seminar on Sustainable Aviation Fuels to reach a consensus



Key Achievement 1:

Environmental Animation - Fly to ECO

In 2018, CAL worked with a local animation company to release an environmental animation, [Fly to ECO](#), featuring its environmental practices in the recent years through social media and an in-flight video in hopes of communicating with stakeholders regarding CAL's environmental performance and encouraging passengers to join CAL in various environmental initiatives. The animation won the Best Environmental Resources Award, the Outstanding Social Inclusion Award, the Outstanding Business Management Award, and the Outstanding Creativity Award in the 2019 Taipei Golden Eagle Micro-movie Festival.



Fly to ECO





Key Achievement 2: Eco Travel Carbon Offsetting Program

CAL pays attention to global warming and climate change with practical actions. On November 20, 2018, CAL launched the [Eco Travel Carbon Offsetting Program](#). When purchasing tickets on the official website, passengers can use the carbon footprint calculation tool linked to the official website to calculate the carbon footprints of their flights. Participating in ECO TRAVEL allows passengers to offset the carbon footprints or CO₂ emissions generated by their flights through eco-friendly and sustainable projects, ultimately achieving carbon-neutral or zero carbon flights.



Join Eco Travel Carbon Offsetting

What's Next

1. CAL will implement the transition of ISO 50001 and ISO 14064 to comply with international standards.
2. CAL will continuously implement the environmental risk assessment for outstations and suppliers and advance the capacity for environmental risk management.
3. Improve the capacity for compliance with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
4. CAL will build the capacity for financial disclosures relating to climate and environmental risks.
5. CAL will review the objectives of carbon reduction in flight and ground operations to reduce carbon footprints.
6. CAL will optimize the management mechanisms for monitoring, declaring, and inspecting carbon emissions and offsets to achieve the carbon-neutral growth in flight operations.
7. CAL will improve water resources risk management and enhance the capacity for resource efficiency.
8. CAL will develop a strategy to use SAF.

2-5 Society

HIGHLIGHTS



35.9 million

Invested TWD 35,904,946 in charity activities throughout 2018.



500 senior citizens

Provided care for 500 disadvantaged senior citizens in four events throughout 2018.



Over 2,700 students

From 2014 to now, CAL's Love All Around team has visited more than 12 cities or counties, 22 villages and towns, and 42 elementary and junior high schools as well as social welfare organizations in Taiwan to help 2,726 students.



40,000 students

Sponsored book programs for 90 schools throughout Taiwan to help approximately 40,000 students.



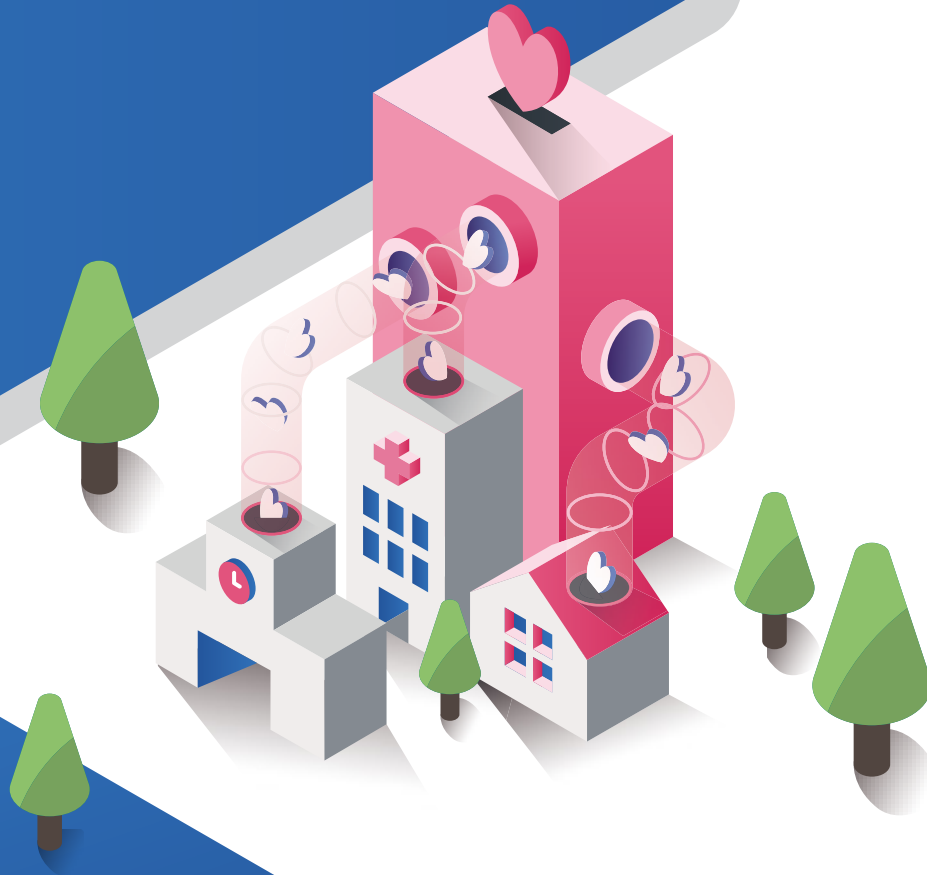
2nd Time Social Inclusion Award

Recognized with the Social Inclusion Award of 2018 Taiwan Corporate Social Sustainability Awards (TCSA) for the second consecutive year.



3rd Time Reader's Digest Trusted Brand

Tigerair Taiwan, China Airlines Group's subsidiary, won a Platinum Award in the low-cost carrier category from 2018 Reader's Digest Trusted Brand for the three consecutive years, low-Cost Airline Award of International Finance Magazine for the first times, and nominated for two awards from the World Travel Awards.



Management Approach GRI 103-1, 103-2, 103-3

Importance of Material Issues

No support from the society, no CAL. What makes CAL successful is the support of the society. Upholding the core philosophy of “taking from society and giving back to society”, CAL continues to contribute to society in the hope of creating love while fulfilling its corporate responsibility in Taiwan.

2020

1. Increasing the proportion of educational sponsorships
2. Calculating SROI (social return on investment)

2025

1. Developing opportunities for students to receive international education
2. Promoting economic growth and employment assistance in underdeveloped areas / developing countries

2030

1. Improving the quality of education in underdeveloped areas / developing countries
2. Enhancing the benefits of sponsorships regarding improving society

Unit in Charge

Corporate Sustainability Committee-Society Task Force

Management Mechanisms

- The meeting of Corporate Sustainability Committee, at least twice a year
- Society Task Force reports to Corporate Sustainability Committee, every quarter

Objectives and Plans

Pillars	KPI	2018			2019 Objectives
		Objectives	Performance	Achievement <small>[Note 4]</small>	
Enhance the overall quality of national education	Number of students receiving education in the remote area	Continue elevating education quality in remote and underdeveloped areas	40,935 students <small>[Note 1]</small>	132%	Increasing investment in education resources and learning opportunities for disadvantaged students
	Number of discounted ticket bought by domestic and international students	Keep promoting the international development of high education, and increase the international education chances for domestic students	1,995 domestic and international students <small>[Note 2]</small>	-30%	Increasing discounts for student tickets to promote opportunities for international education
Raise the Taiwan's visibility in the world	Number of sponsoring international activities	Rise international engagement of Taiwan local brands to promote tourism in Taiwan	Sponsored 26 international Activities (148 flight tickets) <small>[Note 3]</small>	423%	Promoting international visibility of local brands and CAL

Note 1: In 2018, 40,935 students benefited (=1,695 beneficiaries from volunteer teaching + 39,240 beneficiaries from knowledge-sharing platforms of Global Vision).

Note 2: According to statistics on the Company website, the sales of student tickets decreased slightly due to market changes and trends.

Note 3: The visibility of local brands increased significantly due to the expanded coverage of 2018 objectives and projects.

Note 4: Achievement is the percentage of growth compared to the 2017 performance.


Commitment and Long-Term Goals

- **Commitment**
CAL continues to fulfill its responsibility as a corporate citizen by investing resources in social welfare to mitigate social issues and improve society.


Long-term Goals



Grievance Mechanism

- Investor Relations and Media Contacts Investors Service – [Investors Service Website](#)
 - Charitable Activities: Corporate Communications Office – E-mail: tpepp@china-airlines.com
- 

Investors Service Website



Stakeholder Contact

2-5-1 Social Sustainability Strategy

As a corporate citizen and as the leader of Taiwan's aviation industry, CAL commits itself to contributing to society and to creating social value as part of its corporate social responsibility. CAL focuses its sustainability strategy on brand awareness through enhancing the internationalization of local education and elevating the visibility of local brands. In 2019, CAL will plan to adopt a strategy to promote social equality for the disadvantaged. These are done in hopes of improving the overall quality of national education, learning resources in remote areas, and visibility of local brands in Taiwan. With this sustainability strategy in place, CAL aims to achieve social sustainability in line with the United Nations SDGs 4 and SDGs 8 standards.

CAL Social Sustainability Strategy



2-5-2 Assuming Social Responsibility

CAL bases its strategy for social sustainability on fulfillment of its social responsibilities. As a corporate citizen in Taiwan, CAL bears a responsibility not only for stimulating economic development but also for enforcing its commitment to social sustainability via utilization of its core strengths and capabilities.

Theme	Item	2018 Performance	
		Number of Goods and Materials Delivered / Beneficiaries	Amount Invested (TWD)
Humanitarian Relief	In-flight physician project	590 beneficiaries	3,867,373
	Delivery of relief supplies to Sulawesi, Indonesia for earthquake relief; delivery of relief supplies to Laos for floods; and donations to Hualien for earthquake relief	1,143 boxes	
Caring for the Disadvantaged	Disadvantaged students, communities and senior citizens	2,074 beneficiaries	769,338

Note: The above items and results are not limited to Mandarin Airlines and Tigerair Taiwan.

Humanitarian Relief

In 2018, CAL delivered relief supplies to victims of an earthquake in Sulawesi, Indonesia, as well as to people in Laos who were impacted by the bursting of a dam and subsequent flooding. CAL also made a donation to earthquake victims in Hualien, utilizing its resources to save people in need of relief amid this emergency. In addition, CAL worked with the Taiwan Medical Association and the Pau Jar Charity Foundation to initiate an in-flight physician project. This engages physicians to provide in-flight assistance with flight attendants and ground medical teams for the passengers in case of emergency.

Caring for the Disadvantaged

In addition to making donations, CAL has endeavored to fulfill social equality

and development through its resources and specializations. This has been done in the hope of helping the disadvantaged to improve their quality of life and their education levels.

Disadvantaged Students and Communities

CAL's Love All Around team consists of CAL employees to voluntarily visit schools in remote areas for spreading love and sharing knowledge during their days off. Since 2014, they have visited 12 cities / counties, 22 villages, and 42 elementary and junior high schools in Taiwan and provided care for 2,726 students. In addition, CAL integrated its core competence and worked with Taiwan Taoyuan International Airport to organize camps with two batches and aviation safety trips with four batches. A total of 178 preschool students were thus invited to learn the importance of aviation safety. CAL employees also volunteered to visit remote schools in Taitung (Taiwan) and introduce the aviation industry to 297 students. Moreover, our flight attendants organized 11 fundraising activities and charity bazaars to provide necessary assistance for disadvantaged organizations, with the number of beneficiaries totaling 481.



Love All Around Members Interact with Students



Taiwan Taoyuan International Airport Experience Camp



Aviation Safety Trip



CAL Employees Interact with Students in Taitung



Flight Attendants Participate in Senior Charity Event at Renai Senior Citizens' Home

To fulfill its social responsibilities, Mandarin Airlines donated secondhand information equipment including 63 personal computers, 27 LCD displays, 2 notebooks, and 10 printers. These were given to students in remote areas, and carried out through a computer recycling project under the ASUS Foundation.

Mongolia's Children of Blue Sky Choir promotes sustainability issues such as poverty and hunger alleviation, gender equality, education, and a sound quality of life through its concerts. In order to help their efforts, CAL and Mandarin Airlines sponsored domestic and international flight tickets for 22 children and 4 staff members.



Mandarin Airlines Donates Secondhand Computers to Remote Areas



CAL and Mandarin Airlines Sponsor Mongolian Blue Sky Choir's Three Concerts in Taiwan

Charitable activity, “Please donate your invoices to help people in persistent vegetative states (PVS).”, has been promoted by the Genesis Social Welfare Foundation (Taiwan) for 25 years. With the implementation of electronic receipts, however, donation of such receipts has decreased year by year. In response, Tigerair Taiwan has cooperated with the Genesis Social Welfare Foundation to offer flight tickets at its charity carnival and traffic safety promotion event so as to encourage the public to donate receipts for sustainable service of PVS care .



Charity Carnival Event Poster

Senior Citizens

CAL has long partnered with the Huashan Social Welfare Foundation (Taiwan) to provide care for senior citizens in Taiwan. In 2018, CAL continued to engage in social sustainability by organizing three events for 400 senior citizens. In addition, our volunteers visited senior citizens and offered them gifts during festivals for delivering care and making warm-hearted atmosphere in order to enforce the social sustainability.



CAL Volunteer Assists Senior Citizen in Putting on Hand-Knitted Gloves



CAL, Huashan Social Welfare Foundation and Senior Citizens Celebrate Festivals

2-5-3 Supporting Social Development

Having long attached importance to education and sports promotions, CAL continuously invests its resources in social development to ensure substantial improvements in children's education while promoting the steady development of local athletes and increasing opportunities for participation in international contests.

Theme	Item	2018 Performance	
		Number of Participants / Beneficiaries	Amount Invested (TWD)
Education	Volunteer teaching and knowledge-sharing platform at elementary schools	40,170	369,187
Sports Activity	2018 Women's Tennis Association (WTA); 2018 Santaizi ATP Challenger; 2018 IESF Esports World Championship; 2018 Taiwan Legend Championship; pitcher Wei-yin Chen; basketball player Jeremy Lin; extreme marathoner Tommy Chen; tennis players Chun-hsin Tseng, Kai-chen Chang, Chi-sheng Chuang, and Yu-hsiu Hsu; volleyball player Pei-hung Huang; basketball player Yong-sheng Wu; the Pauian Archiland Basketball Team; and the Formosa Dreamers	806,296	18,624,702
Environmental Sustainability	Coastal cleanup	425	348,470
	Leopard cat conservation plan	50	4,000,000
	Corporate animal adoption plan	-	470,000

Note: The above items and results are not limited to Mandarin Airlines and Tigerair Taiwan.

Education

CAL is deeply aware of the importance of education. Based on the spirit of giving back to society, CAL has endeavored to cultivate students' learning habits through volunteerism since 2010. Beginning in 2013, CAL has also established long-term partnerships with colleges and universities in Taiwan to provide expertise and hands-on practice in the hope of achieving mutual benefits for both industry and academia.

Industry-Academia Partnership

In support of the industry-academia partnership and talent cultivation policy promulgated by Ministry of Education in Taiwan, CAL offers training courses related to the aviation industry through maintenance professionals, aviation specialists, and campus education by sharing its wealth of resources and practical experience. In 2018, CAL trained 109 aviation specialists; in addition, CAL co-organized 2018 Explore Taiwan 120h - Corporate Sustainability event with the CTCI Education Foundation, the Center for Corporate Sustainability, and the Seed Training Program, in cooperation with the College of Management of National Taiwan University. This aimed to share the Company's ideas and practices in corporate sustainability. In the future, CAL will continuously offer training courses on fundamental maintenance, and will provide highly trained aviation specialists through industry-academia partnerships.



2018 Explore Taiwan 120h - Corporate Sustainability



Seed Training Program Organized by the College of Management of National Taiwan University

Off-Campus Internships

To enhance the future employment competitiveness of Taiwanese personnel and to develop potential aviation specialists, Mandarin Airlines led students of the Department of Tourism, Leisure and Hospitality Management of National Chi Nan University as well as teachers and students of Minsheng Junior High School in Taipei to visit Taipei Songshan Airport and Taichung International Airport. Thereby, students learned the practices of pilots, flight attendants, ground staff, and maintenance personnel and the regulations of the National Immigration Agency, of Customs, and of the Bureau of Animal and Plant Health Inspection and Quarantine.



Mandarin Airlines Leads Teachers and Students of Minsheng Junior High School to Visit Taipei Songshan Airport



Teachers and Students of Minsheng Junior High School Learn In-Flight Service Procedures



The Department of Tourism, Leisure and Hospitality Management of National Chi Nan University Visits Mandarin Airlines



Teachers and Students of the Department of Tourism, Leisure and Hospitality Management Complete One-Day Internship at Taichung International Airport

Volunteer Teaching

Since its founding in 2011, the CAL Volunteer Club has taught aviation, English and related knowledge every year to the students of neighboring schools in order to keep up with the times and to cultivate students' international outlooks. In 2018, 33 volunteers organized six sessions totaling 18 hours in HsiHai Elementary School, Zhuwei Elementary School, Shan Fong Elementary School, and Guolin Elementary School in Dayuan District, Taoyuan and taught 930 students.



Aviation Education - Volunteers and Students



Volunteer Teaches Students How to Wear Life Vest and Oxygen Mask

Knowledge-Sharing Platform at Elementary Schools

Since 2014, CAL has participated in the Knowledge-Sharing Platform project initiated by the Global Views Educational Foundation to subscribe to the "Global Kids Junior Monthly" to elementary school students in Taoyuan City, Taitung County, Nantou County, and Hualien County in the hope of cultivating students' independent reading habits. Around 39,240 students of 90 schools in Taiwan are benefited.

Note: Calculation of beneficiary students = Average students per elementary school from Statistic of Ministry of Education (Taiwan) x Schools donated by CAL

Flight Camp

Mandarin Airlines and Apex Flight Academy worked together to hold the Mandarin Airlines Flight Camp. This marked Taiwan's first flight camp

designed for people who dream of flying. With an aim of promoting flight training in Taiwan, the two-day camp covered ground operations, cabin navigation, simulator operations, and actual flight operations with a Diamond 40.



Mandarin Airlines Flight Camp Promotes Flight Training in Taiwan



The Camp Covers Ground Operations, Simulator Operations, and Actual Flight Operations

Sports Activity

CAL has been dedicated to the development of national sports for many years. It supports Taiwanese athletes' participation in international contests and co-organizes international events in hope of advancing Taiwan's sports environment and promoting Taiwan's international standing. In 2018, CAL has sponsored numbers of sports events and will continuously support Taiwanese teams and players.

Sponsorship	Item / Player
Sports Events	2018 Women's Tennis Association (WTA), 2018 Santaizi ATP Challenger, 2018 IESF Esports World Championship, and 2018 Taiwan Legend Championship
Athletes	Pitcher Wei-yin Chen; basketball player Jeremy Lin; extreme marathoner Tommy Chen; tennis players Chun-hsin Tseng, Kai-chen Chang, Chi-sheng Chuang, and Yu-hsiu Hsu; volleyball player Pei-hung Huang; basketball player Yong-sheng Wu; the Pauian Archiland Basketball Team; and the Formosa Dreamers

Note: The above items and results are not limited to Mandarin Airlines and Tigerair Taiwan.

Environmental Education

CAL has actively combined activities with social welfare and environmental education to pass on the importance of environmental protection for future generations and fulfill environmental sustainability.

Coastal Cleanup

In response to the International Coastal Cleanup Day, CAL employees clean up the Zhuwei Fishing Harbor every year to experience the importance of environmental protection in person. In 2018, a total of 425 CAL employees and dependents across the Group joined students from Tamkang University and the University of Kang Ning participated in this event to contribute to environmental protection.



CAL Joins Students in Responding to International Coastal Cleanup Day

Animal Conservation

To implement CAL's sustainable development goals, Mandarin Airlines and the Leopard Cat Association of Taiwan entered into a Memorandum of Cooperation

regarding Leopard Cat Conservation. This aims to exchange concepts of leopard cat conservation and promote animal conservation. Mandarin Airlines donated 5% of its sales of souvenirs during the 2018 Taichung World Flora Exposition to the Leopard Cat Association of Taiwan.



Chairman Nuan-hsuan Ho of CAL and the Mayor of Taichung City Witness the Signing of a Memorandum of Cooperation on Leopard Cat Conservation, Undertaken between Mandarin Airlines and the Leopard Cat Association of Taiwan



Mandarin Airlines Flight Attendants Demonstrate Cabin Service Featuring Taichung World Flora Exposition

In 2018, Tigerair Taiwan and the Taipei Zoo worked together continuously to promote a corporate animal adoption program. In addition, Tigerair Taiwan adopted leopard cats and Formosan clouded leopards. By doing this, Tigerair Taiwan expects to call on the public to value the conservation of tigers, leopard cats, and Formosan clouded leopards. Chairman Hong-chung Chang of Tigerair Taiwan and Director Shih-chien Chin of the Taipei Zoo also entered into the adoption declaration, which stated that Tigerair Taiwan would continue to support the Taipei Zoo's conservation program.



Tigerair Taiwan Animal Conservation Plan



Signing of Adoption Declaration

2-5-4 Creating a Sustainable Society GRI 201-1

CAL has long committed itself to social welfare and social development with its resources, in the hope of establishing a positive cycle of social investment and business development. For this purpose, CAL conducts a quantitative evaluation of social investments with financial data and makes timely adjustments of social investments based on the results of the evaluations, in hope of achieving social sustainability.

Social Investment Evaluation

Since 2015, CAL has applied the London Benchmarking Group (LBG) model to evaluate the effectiveness of social investment by quantifying the influence on society and on business. The LBG model provide detailed guidance on the resource allocation and avoid duplicate investments, and therefore CAL is able to meet the expectations of stakeholders and create the true value of social sustainability. For the contribution to social investments, CAL donated TWD 35,904,946 in 2018. Commercial initiatives, charitable events and community investments represented 82%, 14% and 4% of social investments, respectively. Social investments could be categorized into materials, money, volunteers, and management overhead, which represented 52%, 45%, 2% and 1%, respectively. For more information, refer to the table below.

Types of Social Involvement

Item	Amount (TWD)			2018	
	2016	2017	2018	Content	Percentage(%)
Commercial Initiatives	28,642,674	43,119,512	29,560,138	<ul style="list-style-type: none"> Supported public forums and cultural events Sponsored Taiwanese athletes in international events 	82
Charitable Events	13,497,703	1,250,200	4,964,813	<ul style="list-style-type: none"> Provided domestic and international disaster relief Sponsored educational events 	14
Community Investments	2,697,062	1,729,703	1,379,995	<ul style="list-style-type: none"> Organized supportive events for the disadvantaged Taught English at elementary schools Coastal cleanup 	4

Note: The above items and results are not limited to Mandarin Airlines and Tigerair Taiwan.

Input of Social Involvement

Item	Amount (TWD)			2018	
	2016	2017	2018	Content	Percentage(%)
Material Donations	31,899,877	17,274,055	18,684,751	• Donation of flight tickets and in-flight products	52
Monetary Donations	11,244,500	27,716,057	16,265,200	• Cash input for each event	45
Employee Volunteers	772,378	367,612	478,800	• Volunteers for park tours, teaching, and coastal cleanup	2
Management Overhead	914,684	741,691	476,195	• Overhead for various activities	1

Effectiveness of Social Involvement

Item	2016	2017	2018
Amount of Social Investments	43,399,664	77,555,512	114,870,682
Number of Beneficiaries	18,600	31,641	45,598
Volume of Media Exposure	111 / Number of Facebook fans: 668,386	214 / Number of Facebook fans: 814,733	192 / Number of Facebook fans: 927,693
Number of Flight Tickets Sponsored	626	271	381

Environmental / Social Effectiveness		
Sponsorship	Content / Reach	Amount (TWD)
Other Donations for Art and Charitable Events	World Vision Taiwan, 2018 Taiwan Lantern Festival, Eden Social Welfare Foundation, Down Syndrome Foundation R.O.C., Taiwan Concern Society, National Symphony Orchestra, 2018 Future Commerce, Huashan Social Welfare Foundation, and Make a Wish Association	11,502,266
Relief Supplies for Earthquake in Sulawesi, Indonesia, Relief Supplies for Floods in Laos, and Donations for Earthquake in Hualien	Delivery of relief supplies and donations	3,867,373 <small>(Note 1)</small>
Reunion Event	Approximately 300 beneficiaries	177,120 <small>(Note 2)</small>
Coastal Cleanup in Zhuwei, Taoyuan	Approximately 425 participants	348,470 <small>(Note 3)</small>
Aviation English Teaching	1,695 elementary school students	593,250 <small>(Note 4)</small>
Knowledge-Sharing Platform Project, Global Kids Junior Monthly, with Global Views	Approximately 39,240 elementary school students	662,400 <small>(Note 5)</small>
CAL Headquarters Visits	803 participants	260,000 <small>(Note 6)</small>
Benefits to Business Operations		
Indicator	Content / Reach	Amount (TWD)
Media Exposure	Media reports: 192 Number of Facebook fans: 927,693	19,200,000 <small>(Note 7)</small>
Number of Flight Tickets Sponsored	381	18,684,751
Revenue from Flight Tickets Sponsored	Flight tickets sponsored at a discount	28,519,365 <small>(Note 8)</small>
Revenue from Student Flight Tickets	1,955	31,053,669

The effectiveness of social involvement is calculated as follows:

Note 1: Shipping costs for the earthquake in Sulawesi, Indonesia (TWD 644,000) + shipping costs for floods in Laos (TWD 23,373) + donations to earthquake victims in Hualien (TWD 3,200,000) = TWD 3,867,373.

Note 2: Meals, and transportation, and miscellaneous fees (TWD 171,800) + personnel cost (10 volunteers * TWD 133 (basic hourly wage) * 4 hours) = TWD 5,320.

Note 3: Meals, and transportation, and miscellaneous fees (TWD 122,370) + personnel cost (425 volunteers * TWD 133 (basic hourly wage) * 4 hours) = TWD 348,470.

Note 4: Tuition: TWD 350 / lesson (1.5 hours) per student * 1,695 students = TWD 593,250.

Note 5: 184 magazines / month subscribed to * TWD 300 * 12 months = TWD 662,400.

Note 6: 26 visits * visiting fee (TWD 10,000) = TWD 260,000.

Note 7: The benefits of media exposure cannot be estimated and are thus calculated by ad placement: TWD 100,000 / ad * 192 ads = TWD 19,200,000.

Note 8: Total amount of flight tickets (TWD 35,752,565) - discount (TWD 7,233,200) = TWD 28,519,365.

Note 9: As the aforementioned effectiveness of social involvement is hard to quantify, the environmental / social effectiveness is presented by cost.

What's Next

1. CAL will increase the proportion of educational investments to 10%, such as student discounts, to increase opportunities for international exchanges, or work with non-profit organizations / groups to provide more opportunities for disadvantaged students.
2. CAL will invest resources such as flight ticket sponsorships or in-flight promotions toward international participation or visibility of local brands, and it will calculate SROI to identify and set objectives for local brand promotion.
3. CAL will increase opportunities for students to receive international education and participate in international events by sponsoring flight tickets and inviting students to share their experiences. This will also aim to promote CAL to maximize the benefits of participation and sponsorship.
4. CAL will promote economic growth and employment assistance in under-developed areas / developing countries and provide functional training for local residents by sponsoring flight tickets and cooperating with organizations / enterprises in Taiwan to improve the visibility of CAL.

CHAPTER

3

Sustainability Governance

3-1 Corporate Governance

3-2 Risk Management



3rd Time selected for DJSI Emerging Markets

The only Taiwanese airline selected for DJSI Emerging Markets for three consecutive years and ranked in 3rd place among the world's airlines.



3rd Time selected for FTSE4Good Emerging index

Selected for the FTSE4Good Emerging Index for three consecutive years.



Top 5% of TWSE / TPEx listed companies

Ranked in the top 5% of TWSE / TPEx listed companies in the fifth Corporate Governance Evaluation.



1st Time selected for FTSE4Good TIP Taiwan ESG Index

Selected for FTSE4Good TIP Taiwan ESG Index for the first year.



2nd Time selected for Taiwan EMP 99 Index and Taiwan HC100 Index

Selected in the Taiwan Employment Creation 99 Index and the Taiwan High Compensation 100 Index for two consecutive years.



3 New female directors added

Three new female directors added to the Board of Directors for increasing board diversification.

3-1

Corporate Governance

3-1-1 Governance Framework

(GRI 102-5, 102-10, 102-18)

Board of Directors

As the highest governing organization at CAL, the Board of Directors is responsible for supervising and resolving on crucial issues and guiding management. The composition of directors is diversified and talent-based. A total of eight male directors and three female directors (including one male independent director and two female independent directors) having expertise or experience in management of international companies have been elected in the 21st term of Board of Directors. The tenure of 21st term Board of Directors is three years from June 27, 2018 to June 26, 2021. Moreover, CAL convenes the Board meeting at least five times every year and may convene extraordinary meetings in case of emergencies.

As of 2018, shareholders holding more than 5% of CAL's shares are as follows

Major Shareholder	Contribution to Taiwan	Percentage of Shares Held
China Aviation Development Foundation	Striving for the development of Taiwan's aviation business, national traffic construction, research, and event promotion	34.45%
National Development Fund, Executive Yuan	Accelerating industrial innovation, economic transformation, and national development	9.59%

Note: For experience / education, concurrent posts, expertise, field of experience, compliance of independence, and the operations of the Board of Directors, refer to the [CAL's Annual Report](#).

Functional Committees of the Board

The Board of Directors has three functional committees: the Remuneration Committee, the Audit Committee, and the Risk Management Committee which help the Board of Directors perform its duties and convene meetings, exercise functional authority conferred by the Board of Directors and the law, and review and discuss related issues in accordance with the charters approved by the Board of Directors. Corresponding conclusions and recommendations are then submitted to the Board of Directors for final resolutions.

Functional Committees



Audit Committee

Frequency of Meetings : At least once every quarter

Composed of all independent directors and is responsible for helping the Board of Directors perform its duties, including supervision of fair presentation of CAL's financial statements, selection (dismissal), independence and performance of CPAs, implementation of internal controls, and compliance with corporate laws and regulations, as well as other statutory tasks.



Remuneration Committee

Frequency of Meetings : At least twice every year

Helping evaluate the overall remuneration and welfare policy for directors and executives on a regular basis.



Risk Management Committee

Frequency of Meetings : Once every quarter

Helping the Board of Directors review the establishment, implementation, and countermeasures of CAL's overall strategy for risk management in terms of finance, economy, and flight safety.

General Audit Office

To enforce corporate sustainability, the General Audit Office is responsible for auditing the corporate governance system to prevent fraudulent activities and corruption. The results of audits are continually followed and required to be corrected by the given time limit. The audited cases in 2018 are summarized below by category. All of the cases have been corrected and reported to the General Audit Office for approval.

Audited Cased in 2018

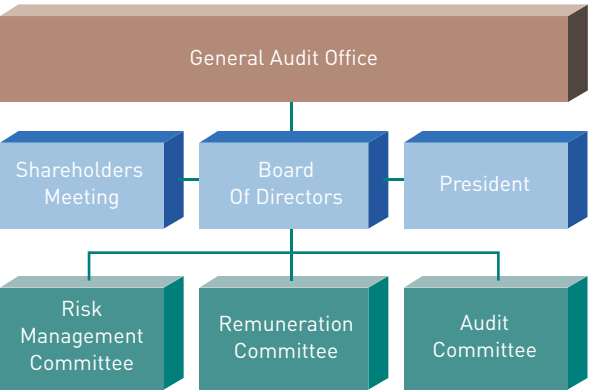
Type of Cases	Number of Cases Audited	Number of Comments	Number of Corrections
Head Office	20	125	125
Branch	47	285	285
Subsidiary	13	80	80
Transaction in Derivative Products	12	None, all complying with regulations	-
Procedures for Lending Funds and Making Endorsements / Guarantees	4	None, all complying with regulations	-
Subsidiary Supervision and Management	1 (Note 1)	3 (Note 2)	3 (Note 3)
Information and Communication Security Inspection	1 (Note 1)	2 (Note 2)	2 (Note 3)
Procedures for Meetings of Board of Directors / Audit Committee / Remuneration Committee	1	1	1

Note 1: Incorporated into the number of cases audited at the Head Office.
 Note 2: Incorporated into the number of suggestions at the Head Office.
 Note 3: Incorporated into the number of corrections at the Head Office.

The General Audit Office has also established a whistle-blowing mechanism to report fraudulent activities and unethical conduct. If it is found that an employee of CAL or its affiliates is misusing his / her position to take bribes or behave in violation of his / her duties for the purpose of obtaining unlawful benefits for himself / herself or others, thereby causing losses to CAL's property or reputation, an employee or an external partner (e.g., a supplier) is encouraged to report this matter through the management

mechanism or through the independent mailbox (auditor@china-airlines.com) published on the website (Stakeholder Contact-Business Conduct) and in the Annual Report (Corporate Governance Report-Corporate Governance).

Corporate Governance Framework



3-1-2 Regulatory Compliance

(GRI 102-16, 103-1, 103-2, 103-3, 205-2, 412-2)

Internal Regulations and Code of Conduct

As regulatory compliance and integrity are the basis of business management, CAL shapes its corporate culture and value through the formulation of internal regulations and codes of conduct that attach great importance to business integrity. To establish sound corporate governance as its business foundation, CAL has set the Code of Corporate Governance, the Board Directors Code of Ethical Conduct, Executive Code of Ethical Conduct, the Procedure for Handling Material

Inside Information, the Ethical Corporate Management Best Practice Principles, and the Procedures for Ethical Management and Guidelines for Conduct. CAL fully complies with related laws and regulations and also commits itself to the following six major principles: protecting shareholders' rights and interests; strengthening Board of Directors functions; adhering to regulations concerning the Board; adopting decision-making procedures of the Board (including avoidance of conflicts of interests); respecting stakeholders' rights and interests; and enhancing information transparency. In addition, Board Directors Code of Ethical Conduct and Employee Code of Conduct were set for ensuring the board of directors and employees to behave ethically and comply with the laws including anti-corruption. In order to make partners behave in the same way, CAL set the CAL Code of Conduct in 2017 and implemented the training covering anti-corruption with two batches (First batch: In 2017, 6,382 employees attended 3,191 training hours in total Two batch: In 2018, 4,795 employees attended 2,398 training hours in total). The number of trainees and the training hours of the two batches totaled 11,177 and 5,589 respectively (Training rate is around 84%). Other batches have been scheduled to be held by June 2019. Moreover, we also announce the CAL Code of Conduct through official missive. As suppliers are important partners of CAL, CAL requests suppliers to sign and implement the Supplier Code of Conduct regarding compliance and anti-corruption.

List of Internal Regulations

Name	Regulating Object(s)	Objective
Code of Corporate Governance	CAL and its subsidiaries	To establish a sound corporate governance system
Ethical Corporate Management Best Practice Principles	Directors, managers, employees, and appointees of CAL and those having substantial control	To strengthen CAL's corporate culture that values business integrity and to improve the business environment for sustainable development
Procedures for Ethical Management and Guidelines for Conduct	Directors, managers, employees, and appointees of CAL and its subsidiaries and those having substantial control	To implement the policy of business integrity, to actively prevent fraudulent conduct, and to regulate matters that should be taken care of by employees when performing business
Procedure for Handling Material Inside Information	Directors, managers, and employees of CAL and those knowing CAL's material inside information due to their identity, occupation or control	To avoid improper disclosure of information and to ensure the consistency and correctness of information published by CAL
Board Directors Code of Ethical Conduct	All directors	To regulate the ethics and conduct of directors when performing their duties in pursuit of CAL's maximum benefits and sustainable development
Executive Code of Ethical Conduct	CAL's representative (Chairman) and managers (including President, Senior Vice President and equivalents, head of Finance Department, head of Accounting Department, and officers managing affairs and having the right to sign on behalf of the Company)	To guide executives to follow the ethics and conduct and to help stakeholders better understand the Company's code of ethics
Employee Code of Conduct	All employees	To guide employees to follow the codes of conduct covering anti-corruption in the workplace
CAL Code of Conduct	Employees and suppliers of the Company and its subsidiaries, any foundation to which the Company's direct or indirect contribution of funds exceeds 50 percent of the total funds received, and other institutions or juridical persons which are substantially controlled by the Company.	To guide the CAL Group to follow related laws and regulations and shape a corporate culture that creates sustainable value for stakeholders
Supplier Code of Conduct	All suppliers and contractors	To achieve the goal of sustainable supply chain management, so as to increase the sustainability of a large number of suppliers

3-2

Risk Management

(GRI 102-15)

3-2-1 Risk Management Mechanisms

(GRI 102-11)

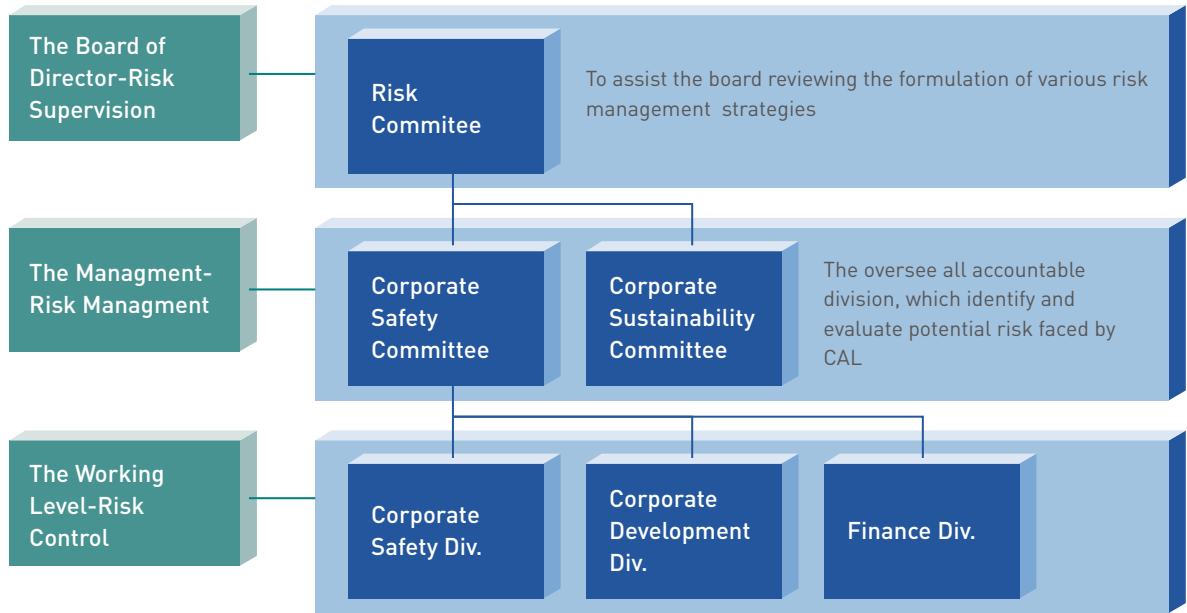
Risk Governance and Structure

Risk management is at the core of a company's sustainable development. Facing increasingly new types of risks, the Company's Board of Directors has set up the Risk Committee to help review the formulation, implementation, and countermeasures of risk management strategies; units in charge are also required to manage and control the major types of risks. In addition, risks involving safety and business operations are at the management level and cross-departmental. The Corporate Safety Committee and the Corporate Sustainability Committee have been established under the President; units in charge are responsible to identify and evaluate potential risks faced by CAL, propose countermeasures, and report results to related committees and meetings on a regular basis.

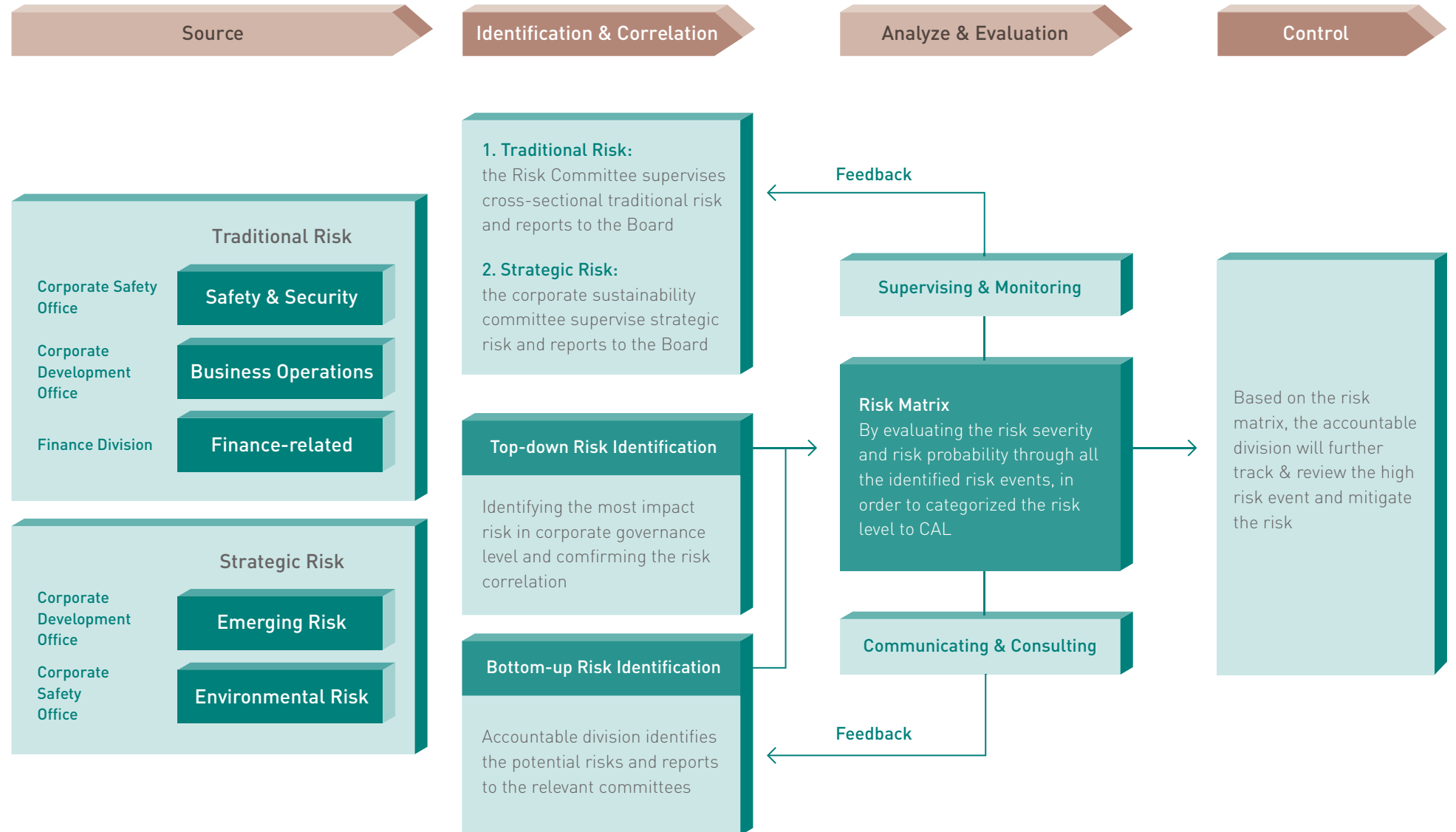
Enterprise Risk Management Framework and Procedures

CAL's risk management framework complies with the framework of Enterprise Risk Management (ERM), where a multi-level organizational approach is adopted to manage and control the overall risks of CAL. The framework emphasizes the inter-correlations between different risks to reduce the overall impact. The framework identifies traditional risks and risks of medium / long-term strategies. All risk impacts and countermeasures are analyzed and proposed through event identification, risk analysis, risk assessment, and risk control, and then followed up and reviewed by the Risk Management Committee and the Corporate Sustainability Committee.

Risk Governance and Structure of CAL



CAL ERM Model and Procedure



3-2-2 Risk Identification and Responses

Considering the business environment and daily operations in the aviation industry, CAL manages risk in three major aspects (safety & security, business operations, and finance) to reduce risks, enhance crisis management, protect the rights and interests of stakeholders, and strengthen resilience for the sake of sustainable management. The three major aspects of risk management are summarized below:

Safety and Security Risk Management

Safety is the foundation of the aviation business. Customer trust can only be earned by having an outstanding record of flight safety. The Corporate Safety Office reviews and evaluates internal and external operating risks with respect to flight operations, maintenance, cabin services, and ground operations based on the Safety Management System (SMS) and the procedures for safety and security risk management; and it proposes corrective measures.

Business Operations Risk Management

The aviation industry faces an ever-changing business environment. Apart from major political and economic turmoil, internal and external contingencies may also have a considerable impact on CAL's business operations. The Corporate Development Office conducts an analysis of potential events which have a significant impact on CAL's operations with respect to national / international politics and economy, aviation industry, and CAL's internal operation. Results of the analysis are then used to develop specific countermeasures, so as to reduce the impact on the Company's business strategies and annual business plan.

Financial Risk Management

Domestic and international economic and financial situations can also affect CAL's operating results. In particular, interest rates, currency exchange rates, inflation, and fuel represent the major costs of airlines. These costs are very sensitive to external factors and can become quite volatile. Therefore, the Finance Division confines the said major costs to a certain range using financial hedging instruments, monitors financial risks on a regular basis, and develops related strategies and measures to achieve the goal of financial risk management.

APPENDIX

- Customer Satisfaction Table in 2018
- Management of Material Human Rights Issues in 2018
- Environmental Performance
- GRI Content Index
- The United Nations Global Compact Comparison Table
- Independent Limited Assurance Report

Customer Satisfaction Table in 2018

Passenger Satisfaction (Note 1)

Item	2016	2017	2018
Yearly Goal	84.7	85.2	85.1
Passenger Satisfaction	83.6	85.1	87.2

Historical Passenger Satisfaction on Service Items (Note 1)

Item	2016	2017	2018	2019 Objectives
Airport Service	87.6	87.2	89.0	89.1
Cabin Crew	88.5	86.8	88.9	88.9
Cabin Environment	86.5	86.8	88.7	88.8
Inflight Catering Service	78.2	79.9	82.6	82.7
Inflight Entertainment	84.4	82.7	84.8	84.8

Freight Customer Satisfaction

Item	2016	2017	2018
Yearly Goal (%)	88.0	88.0	88.0
Freight Customer Satisfaction (%)	87.6	87.6	87.3

Maintenance Customer Satisfaction (Note 2)

Item	2016	2017	2018
Yearly Goal	8.40	8.40	8.40
Maintenance Customer Satisfaction	8.75	8.77	8.68

Note 1: The full score is 100.

Note 2: The full score is 10.

Management of Material Human Rights Issues in 2018 [GRI 412-1]

Object	Human Rights Issues	Management Measures	Corrective Measures
Employees	Freedom of Speech	<ul style="list-style-type: none"> CAL has set up a variety of communication channels, such as an employee grievance mailbox, a sexual harassment grievance mailbox, grievance hotlines, a "speak out" mailbox, and an internal company communication software known as Team+. 	<ul style="list-style-type: none"> The Company helps employees propose to maintain their rights and interests according to laws and regulations and provides them with assistance as needed. When the grievance system is blocked, the Company immediately removes hurdles and requests employees to lodge their complaints in writing or by phone.
	Privacy	<ul style="list-style-type: none"> CAL has established a personal information management system that contains procedures for collecting, processing, and using personal information. 	<ul style="list-style-type: none"> CAL has established a personal information management system that contains personal information incidence response procedures.
	Protection of Labor Conditions	<ul style="list-style-type: none"> The ban on forced labor is included in the human rights policies. The personnel business manual and the working rules have also included regulations governing the performance of duties. Labor-management meetings at the Head Office and divisions / departments are held to negotiate the enhancement of labor conditions. Regular meetings of the Occupational Safety and Health Committee, the Meal Committee, and the Pension Committee are held to protect labor conditions and the work environment. 	<ul style="list-style-type: none"> CAL has established diversified grievance channels to ensure that damage to the rights and interests of employees can be immediately and properly handled. Functional committees which employees participate in have been established to review and improve infringement on labor conditions.
	Labor Union and Collective Bargaining	<ul style="list-style-type: none"> The human rights policy clearly states that employees have the freedom of negotiations and association. In accordance with the labor union charter, each employee can become an ex officio member of the corporate labor union and may participate in labor union affairs or be directly elected as a cadre member. Employees may also join external labor unions as they wish. CAL holds meetings with the corporate labor union on a regular basis. CAL is also open to negotiations with external labor unions. 	<ul style="list-style-type: none"> CAL respects the autonomy of labor unions according to the law.
Suppliers	Freedom of Speech	<ul style="list-style-type: none"> Contact information is available at Stakeholder Contact on CAL's website. CAL organized the annual supplier conference to ensure smooth communication. 	<ul style="list-style-type: none"> The Company has a comprehensive supply chain sustainable management framework. Currently, high-risk issues are mainly audited, guided, and improved through on-site review.
	Privacy	<ul style="list-style-type: none"> CAL has established a policy statement on sustainable supply chain management, which requests all suppliers to implement sustainable supply chain management based on the essence of information security. CAL has established procedures for entrusted personal information management, which state the instructions and scope of responsibility for entrusted third parties (suppliers) to handle personal information. 	

Object		Human Rights Issues	Management Measures	Corrective Measures
Suppliers		Protection of Labor Conditions	<ul style="list-style-type: none"> CAL has established a policy statement on sustainable supply chain management, which requests all suppliers to implement sustainable supply chain management based on the essence of human rights and labor conditions. 	<ul style="list-style-type: none"> The Company has a comprehensive supply chain sustainable management framework. Currently, high-risk issues are mainly audited, guided, and improved through on-site review.
		Labor Union and Collective Bargaining	<ul style="list-style-type: none"> CAL has established a policy statement on sustainable supply chain management, which requests all suppliers to implement sustainable supply chain management based on the essence of collective bargaining. CAL conducts the SAQ to examine whether suppliers hold scheduled or unscheduled labor-management meetings. 	
Customers	Passenger Transport (Member) Customers	Freedom of Speech	<ul style="list-style-type: none"> CAL has set up various communication channels including a customer service hotline, mail, passenger's comments, Facebook, e-mails, and an online customer feedback system. An online satisfaction survey was conducted. CAL has set up regulations governing the handling of customer feedback. All opinions are entered in the Customer Service System (CSS) and replied with detailed explanations within the given period of time. 	<ul style="list-style-type: none"> The Company's system has a backup mechanism that can take over any time in case of system interruptions.
		Privacy	<ul style="list-style-type: none"> CAL has established a personal information management system that contains procedures for collecting, processing, and using personal information. 	<ul style="list-style-type: none"> CAL has established a personal information management system that contains personal information incidence response procedures.
		Protection of Labor Conditions	Not applicable	Not applicable
		Labor Union and Collective Bargaining	Not applicable	Not applicable
	Cargo Transport Customers	Freedom of Speech	<ul style="list-style-type: none"> Contact information on each site is available on the cargo transport website to allow customers to express their opinions. 	<ul style="list-style-type: none"> The Company's system has a backup mechanism that can take over any time in case of system interruptions.
		Privacy	<ul style="list-style-type: none"> CAL has established a personal information management system that contains procedures for collecting, processing, and using personal information. 	<ul style="list-style-type: none"> CAL has established a personal information management system that contains personal information incidence response procedures.
		Protection of Labor Conditions	Not applicable	Not applicable
		Labor Union and Collective Bargaining	Not applicable	Not applicable

Environmental Performance

Item	Unit	Unit	2015	2016	2017	2018	2018 Compared to 2017	Performance	2018 Objective	Achievement Rate	2019 Objective
Scope 1 GHG emissions	Flight operations	Tons of CO ₂ e	6,929,355	7,042,520	7,149,309	7,229,903	1.11%	▼	7,232,469	100.0%	7,325,326
	Ground operations		5,064	4,663	5,004	3,511					
Scope 2 GHG emissions (Note 1)	Ground operations	Tons of CO ₂ e	20,676	20,831	20,677	19,949	-3.52%	▲	18,297	91.0%	18,170
Scope 3 GHG emissions (Note 2)	Ground operations	Tons of CO ₂ e	303,273	2,070,003	1,627,649	1,644,656	1.04%	▼	N / A (Note 3)	100%	N / A (Note 3)
Aviation Fuel Consumption	All aircraft (Non-Renewable Energy)	Ton	2,189,971	2,225,231	2,256,114	2,284,937	1.28%	▶	Management by aviation fuel efficiency		
	Sustainable Aviation Fuel	Ton	N / A		7.96	20.4	156.28%	▲	20.4	100%	N / A
Aviation Fuel Efficiency	Passenger aircraft	L / RPK*100	4.7062	4.6625	4.4457	4.3188	-2.85%	▲	4.3790	101.4%	4.2540
	Freight aircraft	L / FRTK	0.2211	0.2249	0.2213	0.1642	-25.81%	▲	0.218	132.8%	0.1617
	All aircraft (Note 4)	Tons /1,000 RTK	0.2539	0.2550	0.2429	0.2394	-1.44%	▲	0.2179	90.1%	0.2147
Energy Consumption	Fossil fuels	MWh	28,584,310	29,045,588	29,484,167	29,815,419	1.12%	▼	29,879,182	99.9%	29,430,994
	Electricity purchased	MWh	39,382	39,304	37,344	36,009	-3.57%	▲			
	Elevator power regeneration	kWh	N / A		297	1,061	257.24%	▲	Full operation	100%	Full operation

Note 1: The calculation range of Scope 3 is according to the 15 categories of GHG protocol, covering products purchased, capital goods, and fuel and energy activities not included in Scope 1 and Scope 2, transportation and distribution, waste treatment, employee commuting, lease assets, and investments. The emission of energy activities, lease assets, and employee commuting (1,644,656 tons CO₂e) in 2018 passed external verification.

Note 2: The total aviation fuel consumption of all aircraft fuel efficiency includes training aircraft and maintenance. The fuel consumption of passenger and freight aircraft only includes passenger and freight aircraft fuel. The fuel efficiency target value of passenger and cargo aircraft is 1.5% lower than the previous year, and the fuel efficiency goal of the whole fleet is 12.7% compared with the base year in 2009.

Note 3: Calculate 15 categories (GHG protocol Scope3)

Note 4: In line with the revised power factor of the Energy Bureau, CAL updated the total GHG Scope2 emissions of 2015-2017.

Item	Unit	Unit	2015	2016	2017	2018		2018 Compared to 2017	Perfor- mance	2018 Objective	Achieve- ment Rate	2019 Objective
Water Resources	Water consumption	1,000 tons	135.72	136.35	141.26	148.22		4.92%	▼	139.41	93.7%	147.104
	Recycled water <small>(Note 5)</small>	1,000 tons	1.42	1.59	1.89	31.94		1589.95%	▲	31.75	100.6%	31.75
	Recycling ratio <small>(Note 6)</small>	%	1.05%	1.17%	1.34%	21.55%		1510.64%	▲	22.77%	105.4%	21.58%
	Heavy metal wastewater	Ton	9,577	10,667	8,579	10,014		16.73%	▼	N / A	N / A	N / A
	Organic wastewater	Ton	8,867	15,518	14,647	10,443		-28.70%	▲	N / A	N / A	N / A
Cabin waste <small>(Note 7)</small>	Amount produced <small>(Note 8)</small>	Kg	N / A		3,417,870	Amount produced <small>(Note 5)</small>	3,669,703	7.37%	▼	Total controllable waste 3,845,473 kg	113.2%	Total controllable waste without incineration and conversion of electricity 1,049,925 kg
	Recycled	Kg			1,068,483	Recycled	995,369	-6.84%	▼			
	Recycling ratio	%			31.26%	Recycling ratio	27.12%	-4.14%	▼			
Ground Waste <small>(Note 7 / Note 9)</small>	General industrial waste/ domestic waste	Kg	380,662	419,689	456,997	General industrial waste / domestic waste	747,202	N / A		Total controllable waste 3,845,473 kg	113.2%	Total controllable waste without incineration and conversion of electricity 1,049,925 kg
	Hazardous industrial waste	Kg	12,728	13,430	16,758	• Hazardous industrial waste • Non-hazardous industrial waste • Cadmium-containing batteries	267,751					
	Cadmium-containing batteries	Kg	1,445	1,920	1,782							
	Recycled	Kg	N / A		298,934	Recycled	347,936	16.39%	▲			
	Recycling ratio	%			62.86%	Recycling ratio	34.28%	-28.58%	▼			
NOx	Passenger Aircraft	g / RPK	0.0178	0.0160	0.0150	0.0161		7.33%	▼	0.0148	91.22%	0.0159
	Freight Aircraft	g / RTK	0.0291	0.0302	0.0295	0.03		1.69%	▼	0.0291	96.9%	0.0296

Note 5: In 2018, water meters were installed at CAL Park, EMO and CAL Park were included in the calculation of the amount of recycled water. In and before 2017, only EMO was included in the calculation of the amount of recycled water.

Note 6: Recycling ratio = Total amount of recycled water / Total consumption of water resources.

Note 7: Since 2017, data relating to cabin waste has been collected.

Note 8: The scope of collection of data relating to ground operations in 2018 is described below:

- General industrial waste / domestic waste: EMO, CAL Park, Kaohsiung Branch, and CAL VIP Lounges of four airports (Taoyuan, Songshan, Kaohsiung and Tainan).
- Industrial waste: Hazardous industrial waste—Type A / B / C waste stipulated in the Standards for Defining Hazardous Waste established by the Environmental Protection Administration of the Executive Yuan and cadmium-containing batteries; non-hazardous industrial waste—Type D / R waste stipulated in the Standards for Defining Non-hazardous Waste established by the Environmental Protection Administration of the Executive Yuan.

Note 9: The disposal of cabin waste and ground waste (non-recyclable) is entrusted to a third party through the incineration plant converting heat to generate electricity. In 2018, the total amount of cabin waste and ground waste reached 3,341,350 kg, including 2,288,799 kg of waste produced from conversion from incineration to electricity and 1,052,551 kg of waste produced from incineration and other disposal.

GRI Content Index (GRI 102-55)

GRI Standard	Disclosure		Page Number & Response
GRI 101: Foundation			
General Disclosures			
GRI 102: General Disclosures	Organizational Profile		
	102-1	Name of the organization	5
	102-2	Activities, brands, products, and services	11
	102-3	Location of headquarters	11
	102-4	Location of operations	11
	102-5	Ownership and legal form	139
	102-6	Markets served	11
	102-7	Scale of the organization	11
	102-8	Information on employees and other workers	64
	102-9	Supply chain	91
	102-10	Significant changes to the organization and its supply chain	139
	102-11	Precautionary principle or approach	142
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	Strategy		
	102-14	Statement from senior decision-maker	6
	102-15	Key impacts, risks, and opportunities	142
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	102-16	Values, principles, standards, and norms of behavior	140

Referred to latest version 2018
(GRI 303 and GRI 403 referred to latest version 2018, others referred to version 2016)

GRI Standard	Disclosure		Page Number & Response
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	Stakeholder engagement		
	102-40	List of stakeholder groups	19
	102-41	Collective bargaining agreements	76, 81
	102-42	Identifying and selecting stakeholders	19
	102-43	Approach to stakeholder engagement	19
	102-44	Key topics and concerns raised	19, 38, 46
	Reporting Practice		
	102-45	Entities included in the consolidated financial statements	5
	102-46	Defining report content and topic Boundaries	15
	102-47	List of material topics	15
	102-48	Restatements of information	No restatement
	102-49	Changes in reporting	No change
	102-50	Reporting period	5
	102-51	Date of most recent report	5
	102-52	Reporting cycle	5
	102-53	Contact point for questions regarding the report	5
	102-54	Claims of reporting in accordance with the GRI Standards	5
	102-55	GRI content index	151
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GRI Standard	Disclosure		Page Number & Response
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Economic			
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundary	15, 37, 56, 89, 97, 125, 140
	103-2	The management approach and its components	37, 56, 89, 97, 125, 140
	103-3	Evaluation of the management approach	37, 56, 89, 97, 125, 140
GRI 201: Economic Performance	201-1	Direct economic value generated and distributed	12, 132
	201-2	Financial implications and other risks and opportunities due to climate change	105
	201-3	Defined benefit plan obligations and other retirement plans	76
	201-4	Financial assistance received from government	No major financial assistance
GRI 202: Market Presence	202-2	Proportion of senior management hired from the local community	64
GRI 204: Procurement Practices	204-1	Proportion of spending on local suppliers	92, 95
GRI 205: Anti-corruption	205-2	Communication and training about anti-corruption policies and procedures	140
	205-3	Confirmed incidents of corruption and actions taken	No such as things happened
GRI 206: Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	48

GRI Standard	Disclosure		Page Number & Response
Environmental			
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundary	15, 89, 97
	103-2	The management approach and its components	89, 97
	103-3	Evaluation of the management approach	89, 97
GRI 301: Materials	301-1	Materials used by weight or volume	111
GRI 302: Energy	302-1	Energy consumption within the organization	116
	302-2	Energy consumption outside of the organization	116
	302-3	Energy intensity	118
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	302-5	Reductions in energy requirements of products and services	116
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	303-2	Management of water discharge-related impacts	111
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	303-5	Water consumption	111
GRI 305: Emissions	305-1	Direct (Scope 1) GHG emissions	116
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	305-3	Other indirect (Scope 3) GHG emissions	116
	305-4	GHG emissions intensity	118
	305-5	Reduction of GHG emissions	116
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	114

GRI Standard	Disclosure		Page Number & Response
GRI 306: Effluents and Waste	306-1	Water discharge by quality and destination	113
	306-2	Waste by type and disposal method	114
	306-3	Significant spills	No significant spills
GRI 307: Environmental Compliance	307-1	Non-compliance with environmental laws and regulations	No such as things happened
GRI 308: Supplier Environmental Assessment	308-2	Negative environmental impacts in the supply chain and actions taken	92
Social			
GRI 103: Management Approach	103-1	Explanation of the material topic and its Boundary	15, 37, 56, 89, 140
	103-2	The management approach and its components	37, 56, 89, 140
	103-3	Evaluation of the management approach	37, 56, 89, 140
GRI 401: Employment	401-1	New employee hires and employee turnover	64
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	76
	401-3	Parental leave	76
GRI 402: Labor / Management Relations	402-1	Minimum notice periods regarding operational changes	76
GRI 403: Occupational Health and Safety	403-1	Occupational health and safety management system	85
	403-2	Hazard identification, risk assessment, and incident investigation	85
	403-8	Workers covered by an occupational health and safety management system	85

GRI Standard	Disclosure		Page Number & Response
GRI 403: Occupational Health and Safety	403-9	Work-related injuries	85
	403-10	Work-related ill health	85
GRI 404: Training and Education	404-1	Average hours of training per year per employee	72
	404-2	Programs for upgrading employee skills and transition assistance programs	43
GRI 405: Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	64
	405-2	Ratio of basic salary and remuneration of women to men	76
GRI 406: Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	58
GRI 407: Freedom of Association and Collective Bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	92
GRI 408: Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	No such as things happened
GRI 409: Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	No such as things happened
GRI 412: Human Rights Assessment	412-1	Operations that have been subject to human rights reviews or impact assessments	58, 147
	412-2	Employee training on human rights policies or procedures	140
	412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	No such as things happened
GRI 414: Supplier Social Assessment	414-2	Negative social impacts in the supply chain and actions taken	92
GRI 415: Public Policy	415-1	Political contributions	No such as things happened
GRI 418: Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	48

The United Nations Global Compact Comparison Table

Category	The Ten Principles of the UN Global Compact	Corresponding Section	Page Number
Human Rights	Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights.	2-2-1 Human Rights Management Framework	58-59
	Principle 2: make sure that they are not complicit in human rights abuses.	3-1-2 Regulatory Compliance 2-3-2 Sustainable Supply Chain Management	140-141 92
Labor	Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	2-2-1 Human Rights Management Framework	58-59
	Principle 4: the elimination of all forms of forced and compulsory labor.	2-2-1 Human Rights Management Framework	58-59
	Principle 5: the effective abolition of child labor.	2-2-1 Human Rights Management Framework	58-59
	Principle 6: the elimination of discrimination in respect of employment and occupation.	2-2-1 Human Rights Management Framework	58-59
Environment	Principle 7: Businesses should support a precautionary approach to environmental challenges.	2-4-2 Climate Change Mitigation and Adaptation	106-110
	Principle 8: undertake initiatives to promote greater environmental responsibility.	2-4-1 Governance of Environmental Sustainability	100-105
	Principle 9: encourage the development and diffusion of environmentally friendly technologies.	2-4-3 Achievements in Environmental Sustainability	111-123
Anti-Corruption	Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.	3-1-2 Regulatory Compliance	140-141

Independent Limited Assurance Report



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Independent Limited Assurance Report

To China Airlines Ltd.:

We were engaged by China Airlines Ltd. ("CAL") to provide limited assurance over the selected information attached in Appendix I on the Corporate Social Responsibility Report of CAL ("the Report") for the year ended December 31, 2018.

Reporting Criteria

CAL shall prepare the selected information in accordance with the Core Option of Global Reporting Initiative Standards ("GRI Standards") issued by Global Sustainability Standards Board as set forth in Appendix I.

Management's Responsibility for the Report

CAL is responsible for determining its objectives with respect to sustainable development performance and reporting, including the identification of stakeholders and material aspects, and using the reporting criteria to fairly prepare and present the information included in the Report. CAL is also responsible for establishing and maintaining internal controls relevant to the preparation and presentation of the selected information that is free from material misstatement, whether due to fraud or error.

Our Responsibilities

We performed our work in accordance with International Standard on Assurance Engagements (ISAE) 3000: "Assurance Engagement other than Audits or Reviews of Historical Financial Information" issued by the International Auditing and Assurance Standards Board and to issue an independence limited assurance conclusion on whether the selected information is free from material misstatement.

Independence, Professional Standards and Quality Control

We have complied with the independence and other ethical requirements of the Code of Professional Ethics for Certified Public Accountant in the Republic of China, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In addition, we applied Statements of Auditing Standard No. 46 - "Quality Control for Public Accounting Firms" in the Republic of China. Accordingly, we maintained a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements and professional standards as well as applicable legal and regulatory requirements.

KPMG, a Swiss entity, is a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.



Summary of Work Performed

Our main work on the selected information included:

- Obtaining and reviewing the report of CAL;
- Inquiring with responsible management level and non-management level personnel to understand the operational processes and information systems used to collect and process the information reported.
- Performing analytical procedures on the report, and if necessary, selecting samples, and testing the selected samples, in order to acquire sufficient and appropriate evidence based on the understanding of the above procedures.

The work described above are based on our professional judgment and consideration of the level of assurance and our assessment of the risk of material misstatement of the selected information, whether due to fraud or error. We believe that the work performed and evidence we have obtained are sufficient and appropriate to provide a basis of our conclusion. However, the work performed in a limited assurance engagement varies in nature and timing from, and is less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Inherent limitations

There are certain inherent limitations of CAL's internal controls over the selected information in the Report that may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Conclusion

Based on the work we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the selected information has not been properly prepared, in all material respects, in accordance with the Reporting Criteria.

Others

Our limited assurance report is made solely for CAL in accordance with the terms of our engagement. Our work has been undertaken so that we might state to CAL those matters we have been engaged to state in this limited assurance report and for no other purpose. We do not accept or assume responsibility to anyone other than CAL for our work or for this limited assurance report.

KPMG

Taipei, Taiwan (Republic of China)

Jun 14, 2019

Notes to reader

The limited assurance report and the accompanying selected information are the English translation of the Chinese version prepared and used in the Republic of China. If there is any conflict between, or any difference in the interpretation of, the English and Chinese language limited assurance report and the selected information, the Chinese version shall prevail.

No.	Corresponding Issue	Selected Information	GRI Standards
		<ul style="list-style-type: none">China Airlines identifies the board members and implements risk management mechanisms through three categories: "Procedures", "Financial" and "Operational", which comprise internal and external environmental change training, such as new regulations, new products, new aircraft, new flight operations, system problems, disaster, etc. Flight Operation Quality Assurance and regular evaluation are implemented to enhance pilots of the highest quality and ensure safety.	
	2-1-1 Flight Safety		GRI Standard 404-1
	Flight Crew Management, Professionalism	<ul style="list-style-type: none">Since Training and Objective: CAI has introduced evidence-based training. CAI has achieved 100% EBT for a total of 2,389 flight crew in 2018.	Programs for employee safety and health and employee assistance programs
	Training and Evaluation (2-1-1)	<ul style="list-style-type: none">Professionalism: CAI has implemented EBT with various types of simulators for flight training, CAI flight simulators and ground-water training facilities have been certified by international aviation authorities. The flight simulators are available for purchase and for commercial and international training.	
		<ul style="list-style-type: none">Competitive Training System: In 2018, 478 CAI flight crew have participated in a variety of theme train and long-term training courses, 64% of whom completed training.	
		<ul style="list-style-type: none">Providing professional service: CAI's commitment to customers: CAI communicates with customers and provides the best flight passenger service, flight service satisfaction survey, and maintenance service passenger survey and reviews the results of the survey, based on the feedback and advancement. In 2018, the satisfaction rates of passenger service, and CSO2 score is up to the objectives.	
	2-1 Total, 2018 (2-1-1)	<ul style="list-style-type: none">Passenger satisfaction score: 89.2Pass: The satisfaction score is 100%Flight satisfaction score: 87.76%CSO2: The full score is 100.	GRI Standards 102-41 Key topics and significant issues social customer satisfaction
	3-3-1 Employee Rights	<ul style="list-style-type: none">As of 2018, a total of 10,950 CAI employees participated in CAI's accounting for 99.95% of the total workforce. A total of 478 CAI flight crew members completed the mandatory Mandarin Union, accounting for 88.85% of the total workforce. The coverages of CAI and Mandarin Airlines' employees are 100%.	GRI Standards 103-41 Collective bargaining and employee representation

No.	Corresponding Section	Selected Information	OSR Standard
6	2.2.1 Health and Safety Workplace (P. 86-87)	<p>■ Occupational Health Statistics of C.S.G. Group in 2018 : 1. C.S.G.</p> <p>A. C.S.G. 1</p> <ul style="list-style-type: none"> - Number of annual disabling injuries : 08 - Absence days of annual disabling injuries : 1088 - FR : 2.25 (104-1.21) (average : 3.45) - OR : 32 (13-47) (average : 40) - Occupational Disease Rate : 0 - Absence Rate : 1.49% (104-1.94%) (average : 1.94%) - Number of Incidents Resulting in Work-related Fatalities : 0 - FR : 0.26 <p>B. Diseases</p> <ul style="list-style-type: none"> - Number of annual disabling injuries : 08 - FR : 2.52 - Occupational Disease Rate : 0 - Absence Rate : 1.88% - Number of Incidents Resulting in Work-related Fatalities : 0 	<p>OSR Standard 4.0-2</p> <p>Types of injury and cause of injury</p> <p>occupational diseases, loss days, and number of work-related fatalities</p>
		<p>C. Engineering & Maintenance Organization</p> <ul style="list-style-type: none"> - Number of annual disabling injuries : 0 - FR : 1.98 - Occupational Disease Rate : 0.04% - Number of Incidents Resulting in Work-related Fatalities : 0 	
		<p>D. Transport</p> <ul style="list-style-type: none"> - Number of annual disabling injuries : 0 - FR : 0 - Occupational Disease Rate : 0 - Number of Incidents Resulting in Work-related Fatalities : 0 	
		<p>E. Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	
		<p>- Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	
		<p>- Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	
		<p>- Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	
		<p>- Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	
		<p>- Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	
		<p>- Number of annual disabling injuries : 0</p> <p>- FR : 0</p> <p>- Occupational Disease Rate : 0</p> <p>- Number of Incidents Resulting in Work-related Fatalities : 0</p>	

No.	Corresponding Systems	Selected Information	CRF Number
5	Socioeconomic Supply Chain Management (P-80-81)	<p>E. Teaching :</p> <ul style="list-style-type: none"> Number of annual annual-shedding injuries : 0 Abstinence days of annual-shedding injuries : 0 FSI : 0 SR : 0 Occupational Disease : Abstinence Rate : 0.00% Rate : 0 FSI : 0 Number of Incidents : Resolving to Work-Related Function : 0 <p>F. Rescheduling :</p> <ul style="list-style-type: none"> Number of annual annual-shedding injuries : 3 Abstinence days of annual-shedding injuries : 0 FSI : 2.44 Occupational Disease : Abstinence Rate : 3.08% Rate : 0 FSI : 0.04 Number of Incidents : Resolving to Work-Related Function : 0 <p>G. Mandates Allocation :</p> <ul style="list-style-type: none"> Rate : 0.44 (Male : 1.11 (Female : 0.0) SR : 1.78 (Male : 0 (Female : 0.0) Occupational Disease Rate : 0 Abstinence Rate : 0.00% (Male : 0.00% (Female : 0.00%) Number of Incidents : Resolving to Work-Related Function : 0 <p>H. Target Values :</p> <ul style="list-style-type: none"> FSI : 14.73 (Male : 0.61 (Female : 16.36) SR : 1.78 (Male : 0.0 (Female : 0.0) Occupational Disease Rate : 0 Abstinence Rate : 0.00% (Male : 0.00% (Female : 0.00%) Number of Incidents : Resolving to Work-Related Function : 0 	CRF Number: 108-2
		<p>• In 2018, the survey was sent to 72 companies, the majority being retail companies. This accounted for 97.56% of the total amount of procurement, and returned a response rate of 62.5%. On the whole, the sustainability performance of 67.6% of the supply chain was 97.5% from January and there was no supply chain risk after January. The average score across dimensions (Governance, Environment, Society, and General) was more than 81 points.</p>	CRF Number: 108-2
			Negative environmental impacts in the supply chain and activities share

No.	Corresponding system	Identified Information	CRSI Scores
1		<p>● 2018 Supply Chain Sustainability Index</p> <ul style="list-style-type: none"> ○ Governance : 80.29 ○ Environment : 81.18 ○ Society : 78.20 ○ Overall : 79.56 <p>○ Overall sustainability performance of companies</p> <p>○ The first survey scores of supply chain sustainability in 2018 is 79.56.</p>	88
2		<p>○ Greenhouse Climate supplies generally had no internal management system in place to ensure the care of codes and regulations were implemented.</p> <p>○ Environmental More than 45% of the suppliers trust inaccurate the environmental impact caused by operations and adopted several mitigation measures.</p> <p>○ Social Since 80% of the suppliers had a control mechanism for labor conditions and human rights within the organizations, nearly 85% of the suppliers had no occupational safety and health management system, and 40% of those conducted safety training monthly meeting or a regular basis to ensure employees' awareness of information security.</p>	88
3		<p>○ Resource For high-risk in each dimension</p> <p>○ Environmental (14.29%) suppliers did not have a health environmental management policy to minimize and greenhouse gas inventory or carbon reduction mechanism; in addition, they had no specific management to the reduction in energy / resource consumption.</p> <p>○ Social(0.57%) Most suppliers did not establish a control system relating to labor rights and labor conditions, as well as an occupational safety and health management system. In addition, they did not perform well in terms of Biodiversity of Association.</p> <p>○ Greenhouse (2.38%) Suppliers did not establish information security management policies and procedures (these Suppliers did not identify the existing high risk in terms of greenhouse).</p> <p>○ Improvement activities : C&I will continue to improve the evaluation criteria for S&PQ and have in-depth understanding of risks that suppliers have in four aspects covered in the field scores of where they currently stand.</p>	88

No.	Corresponding Issues	Substituted Information	CRF Number
2-3-2	Sustainability	<ul style="list-style-type: none"> CAI's corporate social responsibility has always included improving the development of related industries in Texas. Except for certain special projects, most of our types of business presentation that are utilized, or transactional materials, CAI has tried to be source from local suppliers to promote the growth of the local economy. A decreasing volume of presentation in 2013 was due to change in business, altered contract terms. In the future, CAI will continue to implement in place of "our presentation." America's Local Suppliers: 788 (USA) (78%) Number of Local Suppliers: 1,779 Based on the concept of 3R (reduce, reuse and recycle), CAI has established two wastewater treatment plants in the maintenance plants to handle discharging wastewater containing heavy metals such as chromium, cadmium, potassium in the engine maintenance plants and organic wastewater produced in the aircraft maintenance process through water recycling and reuse. The water in the sewage treatment can be reused as Texas "Agriculture Water" for the first time of control, non-soldified materials are retained in the maintenance, hydrogen gas, ammonia, carbon dioxide and hexane are recycled and sold as a regularly batch. Wastewater is also included in the second use and final use of control over corporate environmental risk in the wastewater treatment. 	GRF Standards 204:1 Proportion of local suppliers or local spending
2-4-2	Achievements in Environmental Sustainability	<ul style="list-style-type: none"> Wastewater Discharge in 2013: <ul style="list-style-type: none"> Heavy Metal Wastewater: 180,074 Tons Organic Wastewater: 26,400 Tons Water in 2013: <ul style="list-style-type: none"> General Operations: 1,740 (1,740 Tons) General Industrial Water: Domestic Water: <ul style="list-style-type: none"> Non-recyclable: Disinfection: 1,000,000 Tons Recyclable: Recycling: 141,000 Tons Industrial Water: <ul style="list-style-type: none"> Recyclable: Solidified or chemical: 1,000,000 Tons Non-recyclable: Solidified or chemical: 1,000,000 Tons In-Flight Services: 1,740 (1,000,000 Tons) General Industrial Water: Domestic Water: <ul style="list-style-type: none"> Non-recyclable: Disinfection: 1,000,000 Tons Recyclable: Recycling: 141,000 Tons 	GRF Standards 204:2 Waste by type and disposal method
2-4-3	Achievements in Environmental Sustainability	<ul style="list-style-type: none"> Wastewater Discharge in 2013: <ul style="list-style-type: none"> Heavy Metal Wastewater: 180,074 Tons Organic Wastewater: 26,400 Tons Water in 2013: <ul style="list-style-type: none"> General Operations: 1,740 (1,740 Tons) General Industrial Water: Domestic Water: <ul style="list-style-type: none"> Non-recyclable: Disinfection: 1,000,000 Tons Recyclable: Recycling: 141,000 Tons Industrial Water: <ul style="list-style-type: none"> Recyclable: Solidified or chemical: 1,000,000 Tons Non-recyclable: Solidified or chemical: 1,000,000 Tons In-Flight Services: 1,740 (1,000,000 Tons) General Industrial Water: Domestic Water: <ul style="list-style-type: none"> Non-recyclable: Disinfection: 1,000,000 Tons Recyclable: Recycling: 141,000 Tons 	GRF Standards 204:2 Waste by type and disposal method

No.	Corresponding Section	Relevant Information	GRI Standard
		<ul style="list-style-type: none"> Non-recyclable: Non-recyclable waste is handled in accordance with the law based on the following types of waste: General industrial waste: low-hazard waste, hazardous industrial waste, and radioactive-contaminated waste. In-flight waste: Certified disciplinary papers are appointed to clear waste and destroy facilities in accordance with international quarantine regulations and collect, sort, and use domestic waste to the incinerators at airports for incineration. Airframe waste and ground waste: 700-ton payload waste disposal containers are approved to carry airport airborne waste and ground waste through the incineration plant converting heat to generate electricity. In 2018, the total amount of airborne waste and ground waste reached 2,541,593 kg, including 2,086,799 kg of waste produced from conversion from incineration to electricity and 454,793 kg of waste produced from incineration and other disposal. 	
2-4-2	Environmental Sustainability, 1. Use of Resources (P.13)	In 2018, CO ₂ emitted 182,821 t, with an increase of 4,959 t compared to 2017.	
2-4-3	Environmental Sustainability, 1. Use of Resources (P.13)	<ul style="list-style-type: none"> Water Resource Conservation in 2018 : <ul style="list-style-type: none"> Water Consumption : 14.82 Thousand tons Water Recycling : 11.18 Thousand tons Recycling Rate % : Amount Recycled / Consumed : 23.10% 	GRI Standard 303-1 Water-related metrics by nature
2-4-4	Environmental Sustainability, 1. Use of Resources (P.14)	<ul style="list-style-type: none"> SO_x and NO_x Emissions of CO₂ Group in 2018 : <ul style="list-style-type: none"> CO₂ : <ul style="list-style-type: none"> (Percentage Abated) : <ul style="list-style-type: none"> SO_x : Emissions : 144.46 tons SO_x : Emissions efficiency : 0.8134 / 0.87% NO_x : Emissions : 475.95 tons NO_x : Emissions efficiency : 0.9169 / 0.82% Fixed Assets : <ul style="list-style-type: none"> SO_x : Emissions : 11.79 tons SO_x : Emissions efficiency : 0.8029 / 0.87% NO_x : Emissions : 141.74 tons NO_x : Emissions efficiency : 0.6588 / 0.87% Marine Pollution : <ul style="list-style-type: none"> (Percentage Abated) : <ul style="list-style-type: none"> SO_x : Emissions : 284.2 tons SO_x : Emissions efficiency : 0.8103 / 0.87% 	GRI Standard 303-7 Marine pollution (CO ₂) and other significant environmental emissions

No.	Corresponding Section	Relevant Information	C&U Measure
		<ul style="list-style-type: none"> • NEN : Extension efficiency : 1.9107 GWh/€ 3. Target Tons • (Emission target) • NEN : Extension : 13.02 Tons • NEN : Extension efficiency : 0.8616 GWh/€ • NEN : Extension : 145.71 Tons • NEN : Extension efficiency : 0.4331 GWh/€ 	
		<ul style="list-style-type: none"> • C&U has set the C&U of Corporate Governance, the Board of Directors Code of Ethical Conduct, the Code of Ethical Conduct, the Procedures for Handling Material Toxic Information, the Ethical Corporate Management Best Practice Principles, the Procurement and Supplier Management and Guidelines for Conduct, Employee Code of Conduct, C&U Code of Conduct, and Supplier Code of Conduct. 	
3-2-2	Regulatory Compliance (G130-102)	<ul style="list-style-type: none"> • C&U set the C&U Code of Conduct in 2017 and implemented the training covering environmental with two sessions (first time: In 2017, 8,922 employees attended 102 training hours in total (the number of employees attended 1,738 training hours in total). The number of employees attending the training hours of the two sessions totaled 11,077 and 5,967 respectively (translating into a annual 6%). Other trainees have been scheduled to be held by June 2019. Moreover, we also enhance the C&U Code of Conduct training efforts by providing the suppliers an important part of C&U C&U, request suppliers to sign and implement the Supplier Code of Conduct, and conduct annual C&U training for all employees. 	(GRI250-1) 202-2 Environmental and material social disclosures and procedures





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