

# 2018

## Smart CSR Leads Smart City



# Editorial Policy

Welcome to Chunghwa Telecom's 12th Corporate Social Responsibility (CSR) Report. This report is published in both Chinese and English on a dedicated CSR website. We hope to integrate the advantages of both paper-based and Internet-based reports to let our stakeholders gain a better understanding of our CSR-related efforts and performances in 2018.

<https://www.cht.com.tw/en/home/cht/sustainability/csr-report-download> 

## Reporting Period

This report discloses the Company's CSR management policies, material issues, countermeasures, initiatives and results between January 1 and December 31, 2018. However, to ensure complete coverage, parts of the report include descriptions of initiatives and results from 2017 to 2019.

## References

Issuing Organization	Item
The Global Reporting Initiative (GRI)	GRI Standards: Core option
	G3.1 Telecommunications Sector Supplement
International Integrated Reporting Council (IIRC)	International <IR> Framework

## How to Read the Report



## Assurance

Content and data of this report have been reviewed and assured by SGS Taiwan Ltd. based on the "Core" option of GRI Standards for compliance with the Core elements of GRI Standards and AA1000 AS (2008) Type 2 High Assurance Standards and requirements of the Integrated Reporting <IR> Framework.

## Feedback

If you have any feedback to share, please do not hesitate to contact us through:  
CSR Division, Public Affairs Department, Chunghwa Telecom,  
Chih-Ming Tseng

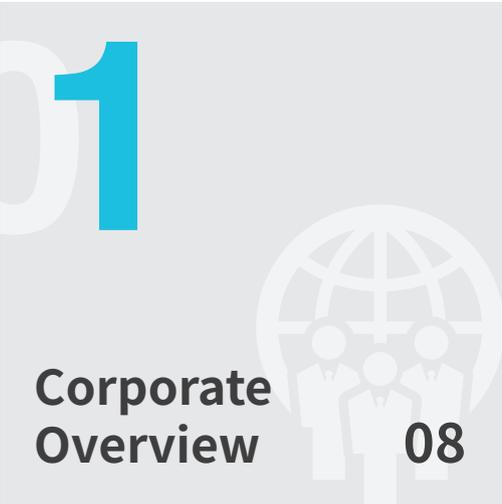
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**GRI** Topic of GRI Standards  
**CHT** Chunghwa Telecom's Indicator

Unless otherwise specified, all currency units used in this report's financial data are by default New Taiwan Dollars (NT\$).

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## Message from the Chairman

In this 12th edition of our Corporate Social Responsibility Report, you shall see Chunghwa Telecom's company tagline "Always Ahead" embodied in our devotion to corporate governance, environmental protection, and social responsibility. We've also actively sought to connect with the world through our endeavors toward achieving the United Nations Sustainable Development Goals (UN SDGs) and utilizing our advantages in corporate capabilities, resources, and information & communications technology (ICT). Through this report, we hope to help the related industries in Taiwan achieve the SDGs and create more sources of positive influence in society.

Through the joint efforts of all our employees, Chunghwa Telecom has achieved excellence in sustainability in 2018, becoming the **first** Taiwanese telecom company among our competitors to join the Carbon Disclosure Project (CDP) Supply Chain Program. We have also incorporated the ISO 20400 Sustainable Procurement Standard to drive supply chain sustainability and implement a sustainability rating system. As the **first** Taiwanese telecom company to have signed on as a supporter of the initiative led by the Task Force on Climate-related Financial Disclosures (TCFD), we shall remain steadfast in our commitment to sustainability.

Chunghwa Telecom utilizes its advantage in bandwidth, coverage, and number of cell towers to garner customer loyalty in the highly-competitive telecom market. As such, the Company maintains a firm foothold as the leader in the mobile, broadband network, and streaming television markets through successful customer retention and development. Chunghwa Telecom has achieved outstanding results in the past year, with our streaming television service MOD passing 2 million subscribers, our mobile network named Taiwan's Speedtest Award's winner, and continuing to hold the OpenSignal State of Mobile Networks Report title for 4G Download Speed and Overall Download Speed, thus maximizing profit for our shareholders.

In addition to our gradual implementation of sustainability measures, Chunghwa Telecom has actively followed the UN SDGs. The Company has utilized our collective core competencies as a telecom company in five important aspects: The Digital Economy Motivator, The Creative Industry Pilot, The Happiness Value Protector, the Green Corporation Pioneer, and the Social Value Guide. We are actively pursuing our goals to realize a digitally inclusive society and sustainable development in the hope of driving the cycle of sustainable development in the telecom industry.

Chunghwa Telecom is responding to the government's "5+2" Industrial Innovation Plan for green energy with actual actions, actively promoting the use of renewable energy. Our solar panel system tops the industry in total capacity, no matter for our own use or agent constructions. The former were issued with **97** Taiwan Renewable Energy Certificate (T-REC) by the Bureau of Standards; the latter includes the Zhangbin Solar Power Plant, the country's largest solar power plant with a total capacity of **100** MW and an annual output of **130 million** kWh, rivaling the carbon absorption capability of **180** Daan Forest Parks. We are making substantial contributions to the development of renewable energy in Taiwan.

In the face of the global major economic risk posed by climate change, Chunghwa Telecom strives towards its ultimate goal of becoming a green enterprise. We have taken various sustainable measures in 2018: (1) introducing the ISO 20400 Sustainable Procurement Standard, (2) collaborating with our supply chain to participate in the CDP by utilizing of corporate influence, (3) establishing a four-tier rating system (Gold, Silver, Bronze, and Participation) for sustainable products and services, and (4) incorporating a sustainable partner evaluation mechanism, making us the **first** Taiwanese telecom company to implement a sustainable partner certification system. We also plan to apply for the Science-Based Targets (SBT) to fully implement carbon management in our supply chain, ensuring mutually beneficial partnerships that drive us to a low carbon future and sustainability in the ICT industry chain.

With regards to social integration, Chunghwa Telecom aspires to realize its vision of bridging the digital divide and creating digital opportunities. We adopted the "5I SDGs" initiatives via collaboration with nonprofit/non-governmental organizations, implementation of corporate volunteering and utilization of our core competencies. Through these initiatives, we support diverse groups and implement our core beliefs in regions facing a shortage of resources, and have thus achieved a mutually beneficial relationship between digital rights and innovative economy. We have continued to provide educational resources to **12** rural regions including Matsu, Lanyu, Taitung, Hualien, Kaohsiung, and Tainan. These efforts have minimized the transportation risks for underprivileged schoolchildren by providing community access to online after-school tutoring services given by university students of the Fu Jen Catholic University's Center of Care Services for Rural Area Education in Taiwan. By bringing individuals together, everyone, both young and old, are able to prosper. We have been committed to our "Read with You" community network tutoring service for **10** years, bringing together **4,035** university students and **2,577** rural schoolchildren in a one-on-one tutoring service totaling **83,696** hours. This allows college students to experience personal growth and learn that "it is more blessed to give than to receive," while helping rural schoolchildren to get ahead in life around through the positive influence provided by college students. A total of **85** "Digital Good Neighbors" were also established to deliver resources across the country, including offshore islands. Furthermore, our 10-year-long commitment to "Click Taiwan" has guided **500** university and college students from **80** departments of **40** schools into **73** rural communities, producing over **300** videos to record the stories of the local people, preserve local cultures, and provide marketing assistance to local industries.

We have also received the following accolades:

1. Included in the Dow Jones Sustainability Index (DJSI) for 7 consecutive years;
2. Included in the Taiwan Sustainability Index (TWSI);
3. Included in the FTSE4Good Emerging Index;
4. Named 2018 Taiwan Mobile Service Provider of the Year and 2018 Taiwan Data Center Service Provider of the Year by Frost & Sullivan Best Practices Awards;
5. Named Asia's Most Transparent Report by the Asia Sustainability Reporting Awards;
6. Awarded the Exemplar Award for Public Welfare Promotion by the Global Views Monthly Corporate Social Responsibility Awards;
7. Awarded the CSR Report Top 50 Platinum Award, the Social Integration Award, and the Innovative Growth Award by the Taiwan Corporate Sustainability Awards;
8. Four-time winner of the Brand of the Year Award by the World Branding Forum.

In 2018, our “Hearty Southbound” outreach program further broadened the horizons of young students and connected them with the world; the program also helps the second-generation children of new immigrants learn the culture of their motherland and capitalize on the advantages that their dual-culture heritage can bring. Through these substantive actions, Chunghwa Telecom aims to promote social acceptance and integration.

Faced with the ever-changing and competitive environment in 2019, Chunghwa Telecom has launched the three-year “Stride to 2021” transformation plan. The plan is comprised of four major aspects: core businesses, emerging businesses, cost optimization, and enhancement of fundamental capabilities. The responsible task force has completed the overall planning for the transformation plan and is on its way to initiate large-scale implementation. Under the principle of customer-centric value creation, we are building the best customer experience with a focus on the technological development of 5G, internet-only banking, internet of things, big data analytics, and artificial intelligence. Chunghwa Telecom shall maximize corporate value through the promotion of smart solutions that meet the diverse needs of the industry and customers while laying the foundation for the Company's medium- and long-term development.

“Chunghwa Telecom can do more” is a core principle as the Company values ethical corporate management and strives for the balance between business revenue growth and corporate social responsibility. We hope that through the use of a positive technological solutions, we can listen and respond to the needs of our stakeholders, utilize our ICT technological core competencies to assist the development of related industries, promote the exchange of knowledge and technological resources, and create positive social energy. We hope that we can continue to count on your support and encouragement in the future.

Chairman & CEO  
Chunghwa Telecom Co., Ltd.

*Shueih Chi-mau*



# 2018 CSR Milestones

Awarded Highly Commended of Asia's Most Transparent Report in Asia Sustainability Reporting Awards (ASRA)



Awarded "The Most Desired Workplace for the New Generation - Top 1 in Telecom Service Industry" in Cheers Magazine



- Won the Exemplar Award for Public Welfare Promotion by the Global Views Monthly Corporate Social Responsibility Awards
- Awarded Top 5% of the Corporate Governance Evaluation from the Taiwan Stock Exchange Corporation



- Selected for Taiwan Sustainability Index (TWSI) and FTSE4Good Emerging Index
- Won the Platinum Awards of Trusted Brand in "Telecom Service" and "4G Internet Service" from Reader's Digest
- The Banqiao IDC was awarded Gold Prize in "Excellent Intelligent Green Building System Award" and Silver Prize in "Excellent Intelligent Green Building Design Award" at the 2018 APIGA Awards



- Awarded the first place of "Cloud Inter-entity Supply Contract Selection" from MoEA
- Awarded No.1 Fastest Mobile Network in "Taiwan's Speedtest Awards for mobile network speed" by Speedtest



- The first telecom operator granted by NCC to offer the accreditation service on "PLMN11 Regulatory Standards"
- Awarded with "Excellence in Corporate Social Responsibility Award" from Commonwealth Magazine





- Won the Platinum Award for 6 consecutive years in “The Asset Corporate Awards”
- Awarded “First Prize” of “Buying Power- Social Innovative Product and Service Procurement Awarding System” from MoEA
- Won the “Best Brand Award” from Business Today for 11 consecutive years



- Received 3 prizes for the Taiwan Corporate Sustainability Awards, including the “Top 50 Corporate Sustainability Report Platinum Award” “Social Inclusion Award,” and the “Growth through Innovation Award”
- Won the Brand of the Year Award by the World Branding Forum for 4 consecutive years
- S&P Ratings and Taiwan Ratings: “In foreign long-term rating, it has been rated “AA,” and the outlook for the rating is stable,” “In domestic long-term/short-term rating, it has been rated “twAAA / twA-1+,” and the outlook for the rating is stable
- Awarded “Taiwan Mobile Service Provider of the Year” and “Taiwan IDC Service Provider of the Year” in Frost & Sullivan “2018 Best Practices Awards”



- Obtained the “ISO 45001 Occupational Safety and Health Management” certificate, CHT’s Mobile Business Group is the sole domestic ISO 45001 certified telecom operator
- Awarded the first place in the “Telecom 4G Industry” of NEXMAG’s “Top Service Awards 2018”
- Winners of both “Download Speed: 4G” and “Download Speed: Overall” from the OpenSignal Report in 2018



MEMBER OF  
**Dow Jones  
Sustainability Indices**

In Collaboration with RobecoSAM

Selected for Dow Jones Sustainability Index for 7 consecutive years

# 1 Corporate Overview

The SDGs CHT contributes to in this chapter



Corporate Governance

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CSR Management

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For 2018, Chunghwa Telecom's consolidated net income was NT\$ 215,500,000 and its annual earnings per share was NT\$ 4.58.



Chunghwa Telecom is the only telecom company to have established a labor director.



To link sustainability performance with compensation, Chunghwa Telecom implemented a soft incorporation of sustainable development strategies and targets into its review of director compensation.



Chunghwa Telecom established a CSR committee and six task forces responsible for the setting of sustainability policies.



Annual review of the Company's budget planning for carbon management strategies; execution of action plans; setting performance targets.



Sustainability issues addressed by Chunghwa Telecom: **social integration, digital inclusion, green ICT products & services, green brand management, and energy-saving & carbon reduction.**

Chunghwa Telecom (TAIEX:2412, NYSE:CHT) is the largest integrated telecom carrier in Taiwan, The head office is located at 21-3, Section 1, Hsinyi Road, Taipei. With more than **737** locations in 22 counties and cities in Taiwan. Our business has three major areas: fixed and mobile communications, broadband access and the Internet. We also provide corporate customers with information and communication services, including big data, information security, and cloud and Internet information centers. We also offer innovative technology services, such as the IoT (Internet of Things) and AI (Artificial Intelligence), to create an outstanding communication environment and extraordinarily convenient digital life. We also have important business partnerships with other international telecom carriers.

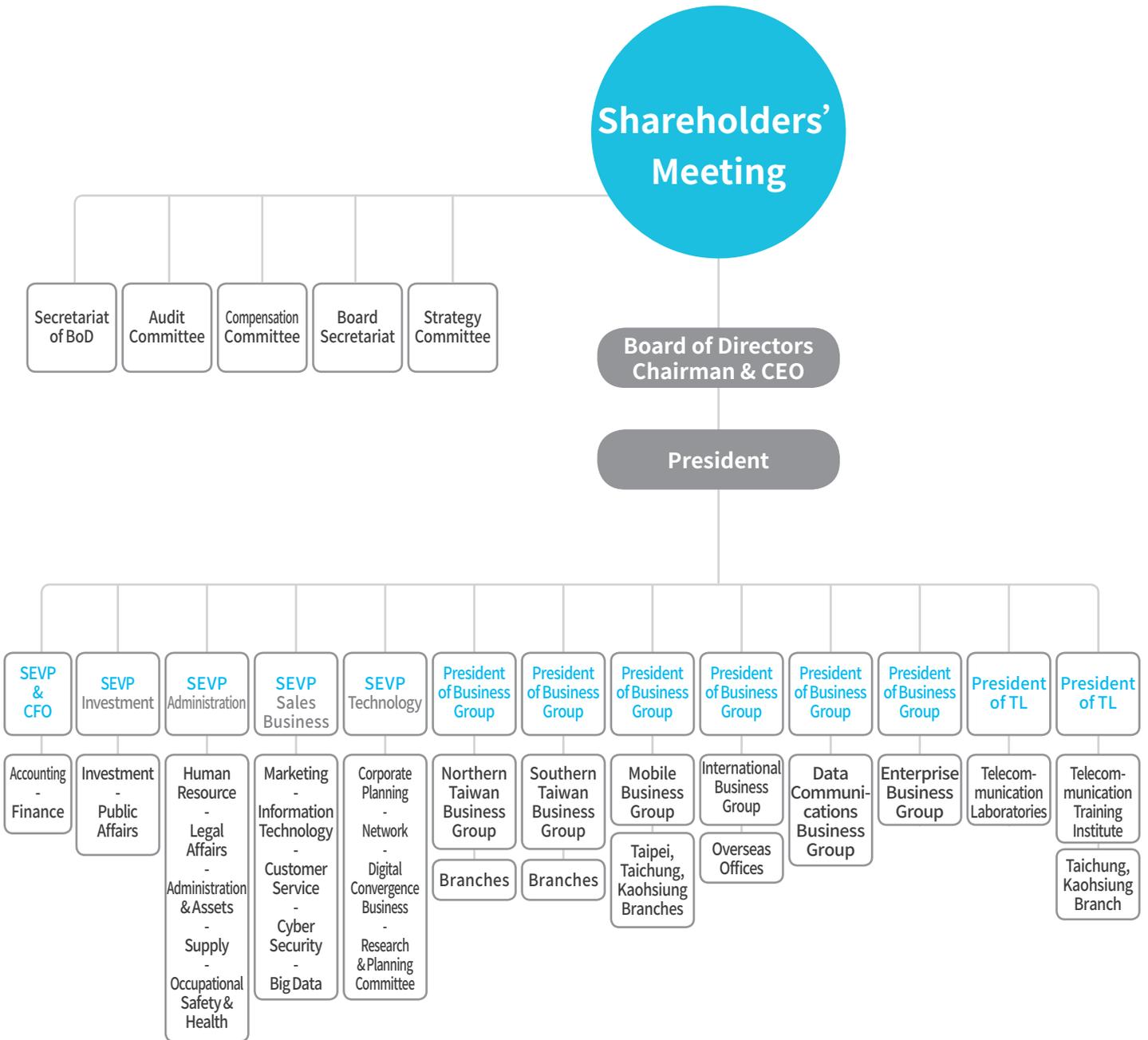
Chunghwa Telecom has been actively involved in "Corporate Social Responsibility" since 2006, and has won praise from many domestic and international professional organizations. The establishment of the "Corporate Social Responsibility Best Practice Principles" and legalization of the governance structure has prompted us to a stringent and ambitious practice of CSR.

Three Telecom Laws: <http://goo.gl/678ya> 

The main business of the branches and re-investments:

Please refer to page 23-24, 143-146 in the 2018 Annual Report.

## Organization Structure



### We Strive to



## Business Model



### Household market

- Domestic fixed network service
- Domestic leased line service
- Internet and value-added service
- MOD (IPTV) service
- International fixed network service



### Personal market

- Mobile communication service
- Wi-Fi service
- International fixed network service



### Corporate market

- Integrated service
- Data security service
- Mobile service
- Data service
- International service
- Diversified integrated payment service

## Products and Services



### Mobile phone

Customer amount  
**1,059.4 million**

Annual growth **+1.4 %**



### Mobile Internet

Customer amount  
**962.6 million**

Annual growth **+15.9 %**



### 100Mbps

Customer amount  
**142.2 million**

Annual growth **+10.9 %**



### 4G

Customer amount  
**946.4 million**

Annual growth **+18.5 %**



### 光世代

Customer amount  
**360.2 million**

Broadband customers **80.4 %**



### HiNet

Customer amount  
**368.4 million**

Market share **No. 1**

### Mobile communication **46.9 %**

Customer amount	Market share
10.594 million	36.3%

### Domestic fixed network **31 %**

	Customer amount/ Communication amount	Market share
Local network	10.421 million households	93.1%
Long haul internet	2.087 billion minutes	82.9%
Broadband access	4.483 million households	70.8%
MOD	2.01 million households	28.4%



### Internet **13.8 %**

Customer amount	Market share
4.072 million households	66.6%

### International fixed network **6.2 %**

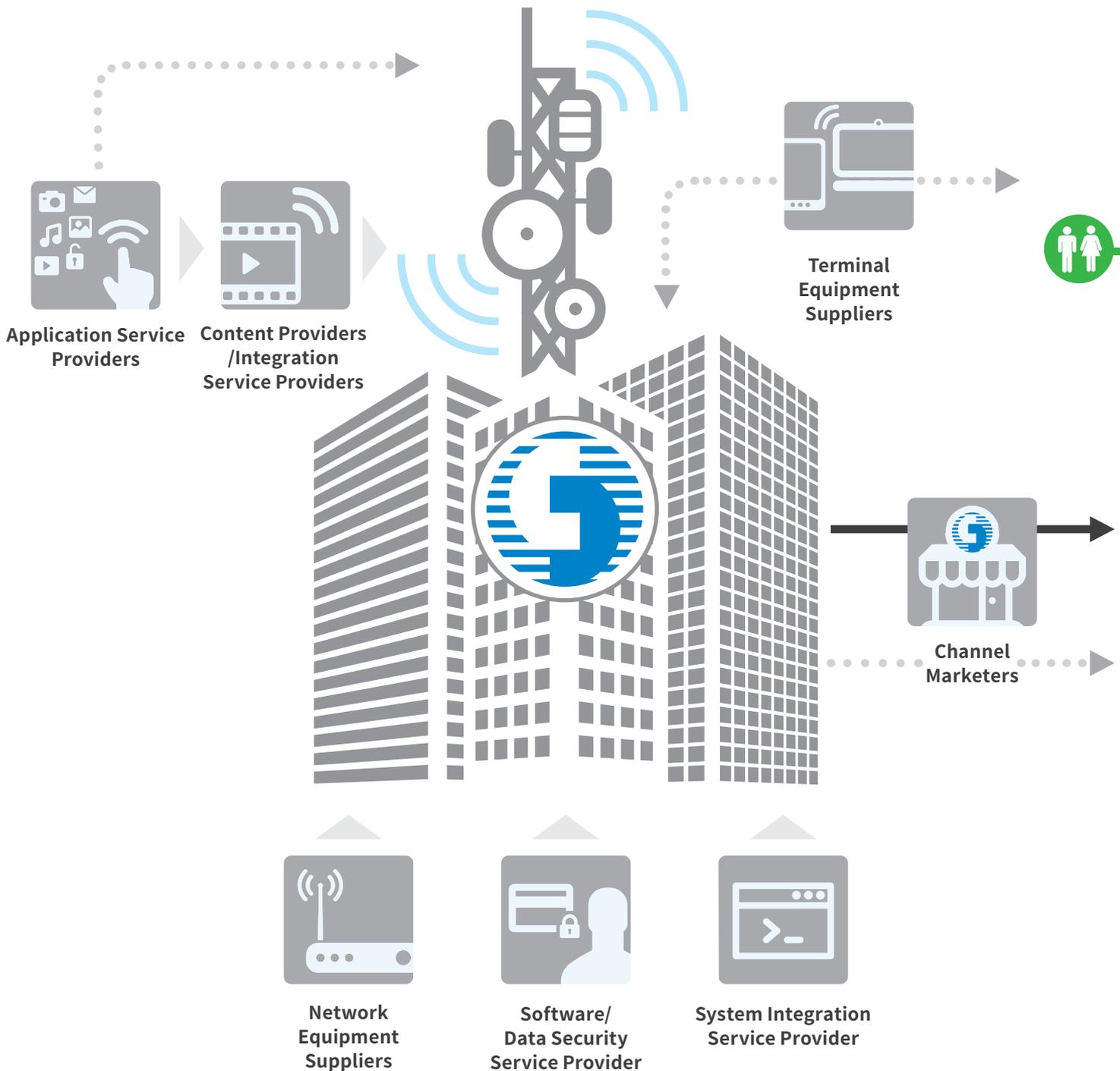
Communication amount	Market share
7.65 billion minutes	70.3%

### Others **2.1 %**

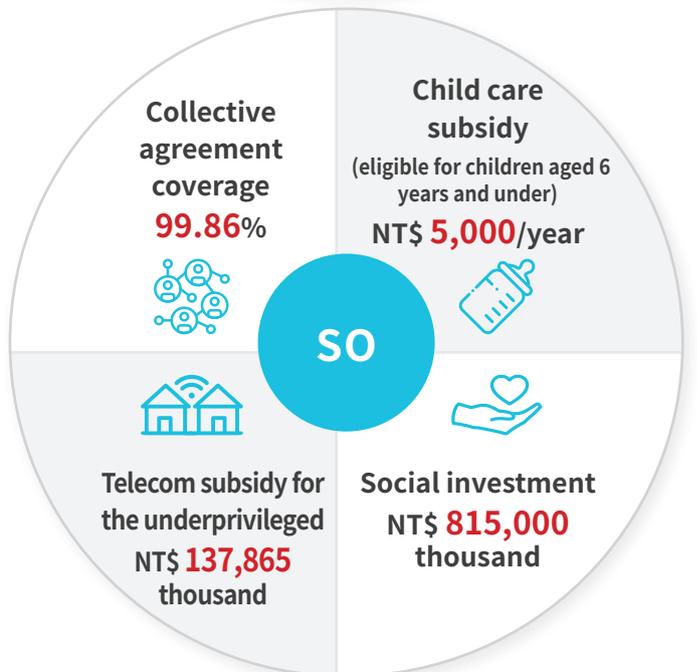
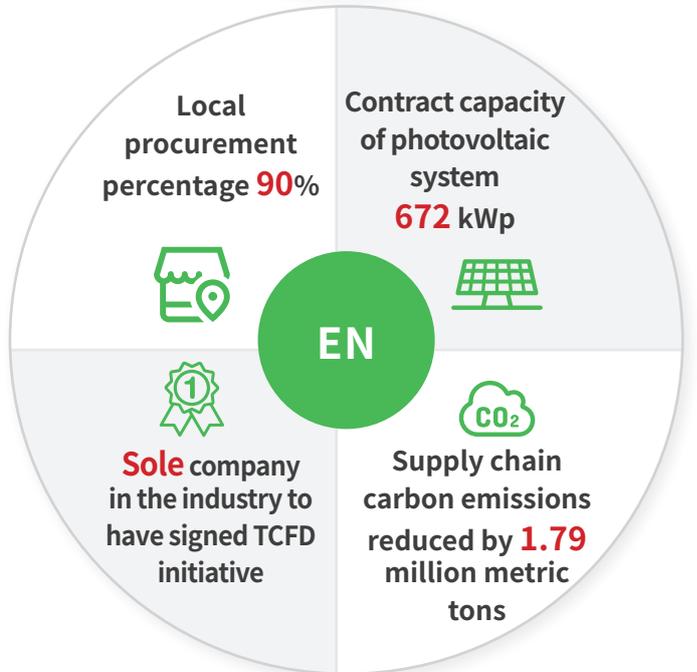
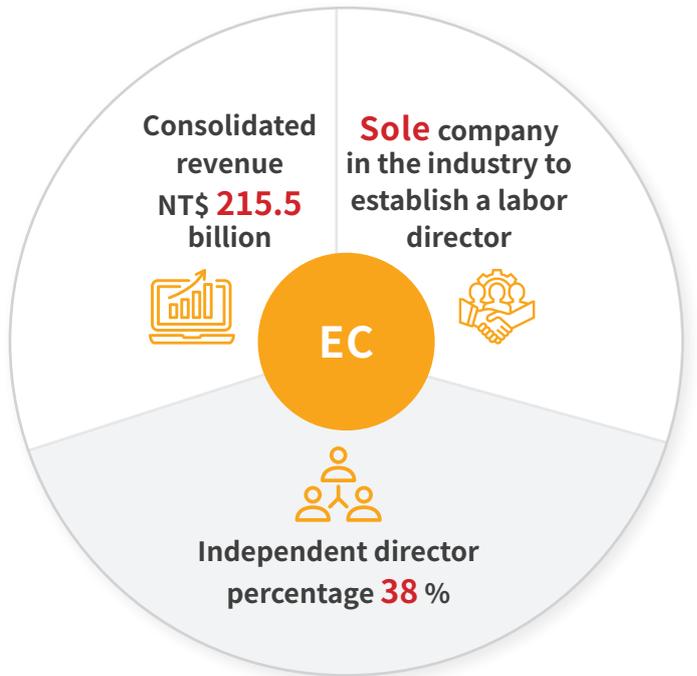
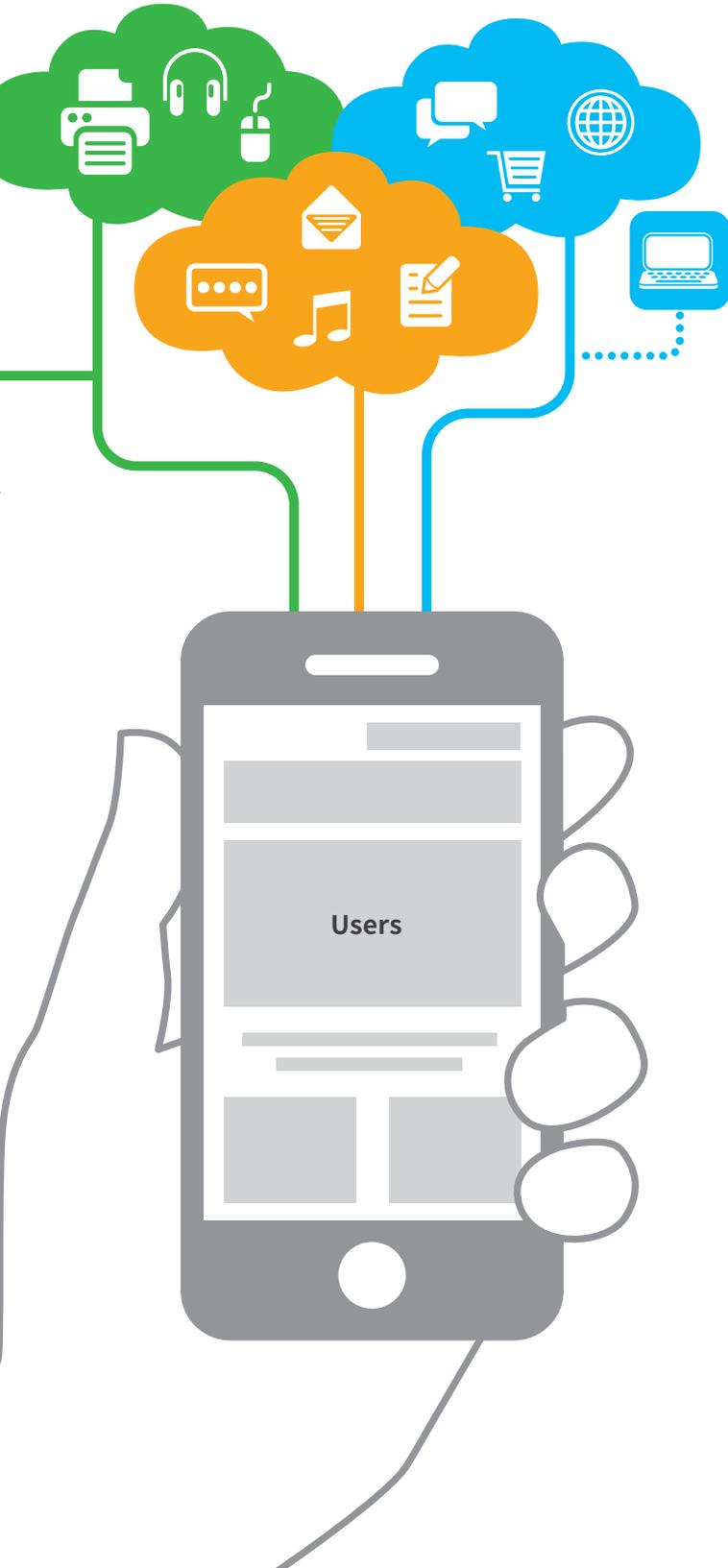
## Industry Value Chain and Critical Sustainability Performance

Due to technological advancements, boundaries of specialized markets that we used to know of are starting to shift, thus allowing industry participants to compete outside of their dominant markets. International Data Corporation has even combined ICT, e-Commerce, Electronics and Entertainment into a new segment called eICT to recognize the increasingly common cross-industry collaboration.

The wave of digital convergence brings new values to the telecom industry and opportunities to meet users' needs by offering innovative eICT services, which makes content providers and integrators, application service providers, network equipment suppliers and terminal equipment suppliers the important value partners to a telecom carrier in the development of digital convergence services.



In the future, Chunghwa Telecom will continue to dedicate to the fixed network, mobile, data and eICT framework and strengthen collaborations with suppliers to offer the best services to our customers. By tightening coordination among the upstream, midstream and downstream, we shall be able to provide users with best quality service.



# Corporate Governance

Chunghwa Telecom Board of Directors is the highest governing body. The Board of Directors is responsible for appointing and nominating high-level managers, as well as formulating and reviewing corporate social responsibility, and sustainable development strategies. The 9th Board has 13 directors. To date, there are 2 women and 11 men, including 4 independent male directors and 1 female independent director. Directors’ tenure is three years (June 21, 2019 to June 20, 2022). All of the independent directors are included in the Audit Committee to ensure the independence of governance and the perspectives of the stakeholders.

Chunghwa Telecom’s independent directors and outside directors provide expertise based on their respective areas of practice and professionalism to assist the Board of Directors in making decisions as to benefit the company and the shareholders. To prevent personal liability and financial losses due to third-party litigation, we have purchased indemnity insurance for Directors.

Advanced studies of the Board of Directors:

Please refer to <https://www.cht.com.tw/en/home/cht/about-cht/corporate-governance/board-of-directors/board-of-directors>

Experiences of the Directors: Please refer to the 2018 Annual Report on page 83-85.

## CHT Board of Directors

Unit: person



## Board Diversity Policy

Chunghwa Telecom values diversity in Board of Directors and recruits talents primarily based on skill sets. Selection of directors is not limited to any particular gender, nationality or ethnicity. Directors are expected to have outstanding quality, industry experience and expertise to complement the board.

## Linking Director Compensation to Sustainability Performance

All Chunghwa Telecom directors are nominated by the Board of Directors and shareholders holding the legally required percentage of shares, they are then subsequently appointed by the Board of Directors. The compensation committee has implemented a soft incorporation of sustainable development strategies and targets into its review of director compensation in accordance with the Company’s Articles of Incorporation so as to achieve the following: (1) evaluation of required core competencies in order to facilitate the connection between director performance and the Company’s sustainability outlook and short-, medium, and long-term strategies and targets, (2) strengthening accountability and linking performance with compensation, recruitment and retention to attract key talent on the Board of Directors. The implementation of this measure coupled with the substantial effect of the variable compensation plan is a win-win for the Company and its directors.

Director compensation: Please refer to page 40-41 of the Company’s 2018 annual report.



### Audit Committee

Consists of the independent directors, whose main duties are to select or dismiss the CPA, determine the CPA compensation, review and discuss quarterly, semiannual, and annual financial reports, review the internal control system and examine and revise the content and appropriateness of the internal control statement.



### Strategy Committee

Consists of 8 board members, who are responsible for mid- and long-term development plans and other critical issues, as well as major investment and mergers and acquisitions, major changes in organization and structure, the acquisition or surrender licenses, formulating and or modifying the annual operational plan and budget, increases or decreases in capital, and other major strategic issues. The resolutions are submitted to the full BoD for final approval.



### Compensation Committee

Consists of three independent directors, who are responsible for the evaluation of the performance of directors and managers, and for determination of appropriate compensation policies, wages, institutions, standards and structures.

## Avoidance of Conflict of Interest

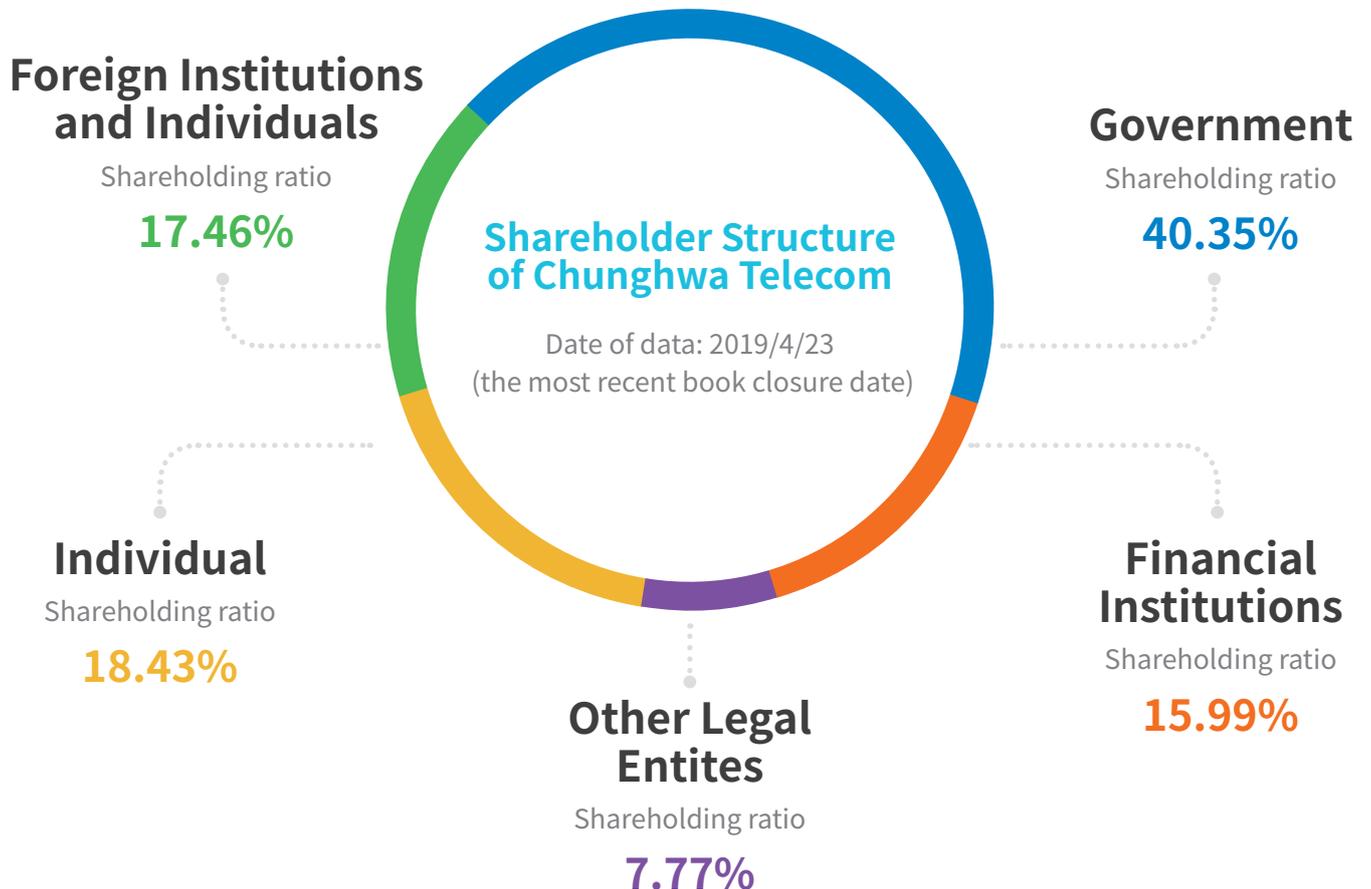
Chunghwa Telecom’s Chairman is concurrently the CEO. The elections of directors comply with relevant laws and regulations, which suggest the Board and shareholders with qualified shareholding ratio nominate the candidates, and director’s nomination and review are conducted accordingly. In order to avoid conflicts of interest in the highest governance bodies, we conduct strict controls in accordance with the following procedures, including:

- All the new directors shall sign the Consent to Appointment to announce that they will follow Section 23 of the Company Act, conduct faithful business and perform the duty of care as a bona fide manager.
- All directors have to sign the Statement to show that they clearly knew the content of Section 206 of the Company Act, which is about the content of avoidance of voting rights and the legal effect of violations.

Due to the directors’ high ethical standards and self-discipline, in the operation of the mechanism, no conflict of interest has occurred since the Board of Directors was established. Moreover, the Board has resolved to approve a total of 50 articles of “Code of Corporate Governance for Chunghwa Telecom,” while all departments are required to implement the Code of Conduct, and the secretariat also evaluates on a regular basis.

## Encourage Shareholders to Participate in Corporate Governance

Chunghwa Telecom has made changes and revisions to several systems and measures based on a corporate governance mindset. These include e-voting, voting by poll and the disclosure of meeting resolutions made on the Company official website. These diverse voting channels allow shareholders to exercise their rights easily and this has made corporate governance more effective.



## Creating Value for Shareholders

Chunghwa Telecom business operations have been stable for years. Profitability and financial completeness have been uninterrupted. We pay our taxes honestly year after year, following the law, and make solid contributions to the country. Despite the existence of many challenges in the telecom operation environment, we maintain complete focus on our field and create value for the shareholders. Chunghwa Telecom generated consolidated revenues totaling NT\$ **215.5** billion in 2018.

The increasing popularity of smart mobile devices, information security, and the IoT technology, has resulted in a growth in revenue from value-added services, sales, and data subscriptions that covered the decline in voice services. Net income attributable to the parent company amounted to NT\$ **35.5** billion while EPS reached NT\$ **4.58**.

In 2018, Chunghwa Telecom income tax was the equivalent of an effective tax rate of **18.95%**. The deviation from statutory 20% tax rate was mainly attributed to the provisions of Article 4 of Income Tax Act, in that net dividends or net earnings recognized from local invested businesses are exempt from income tax. The application can be made for tax preference pursuant to Article 10 of the Statute for Industrial Innovation.



Total number of employees in the Company including subsidiaries

**32,611** persons



Retained economic value

**(4,562)**

Unit: NT\$ million

Paid-up capital	<b>77,574</b>
Revenues	<b>215,483</b>
Operating cost	<b>139,545</b>
Operating expenses	<b>32,404</b>
Employee salaries and benefits*	<b>47,024</b>
Dividends paid to shareholders	<b>37,205</b>
Income tax paid	<b>10,891</b>
Expenses of social investment/donations*	<b>815</b>

\*Operating costs and expenses included

## Highest Moral Standard

We have set up the “Code of Ethics of Chunghwa Telecom Co Ltd,” “Ethical Corporate Management Best Practice Principle,” and “Procedures for Ethical Management and Guidelines for Conduct.” These are formulated as basic ethical guidelines to ensure that all employees engage in all activities with the highest standard. In addition to these codes being included in the training program for new hires, all employees are required to log into the web, review the material and take a test annually. All employees participated in the test in 2018 except for those who were not available for a legitimate reason at the time of the test.

## Prevention of Corruption

Chunghwa Telecom has prepared the “Employee Appraisal Guidelines” and “Employee Reward/Disciplinary Standards” for the evaluation of performance. Rewards and sanctions are applied according to these rules whenever employees exhibit conduct deserving of them. Information such as a grievance hotline has been made available on the Chunghwa Telecom intranet/employee portal. A total of 52 internal complaint cases (disciplinary and leak investigations) were accepted in 2018, 50 of which are closed and 2 of which are still under investigation; 14 were associated with violation of the code of conduct. All complaints were investigated and handled according to company internal policies and principles, and taught as case studies to strengthen employee esteem for the rules, discipline, corporate image, and shareholders’ interests.

CHT's Anti-corruption Policy:

[https://www.cht.com.tw/home/cht/-/media/Web/PDF/Sustainability/Economic/CHT\\_Anti-corruption-policy2019.pdf?la=zh-TW](https://www.cht.com.tw/home/cht/-/media/Web/PDF/Sustainability/Economic/CHT_Anti-corruption-policy2019.pdf?la=zh-TW) 

## Response to Major Issues

We offer our full cooperation towards the indictment of a few of the Company’s employees involved in the case of procurement fraud. Furthermore, the incident shall be submitted to the Personnel Evaluation Committee for review, strengthening the Company’s internal management mechanisms.

For more information, please refer to the Company’s 2018 annual report.

<https://www.cht.com.tw/en/home/cht/investors/annual-report> 

## The Internal Audit System

The internal audit helps the Board and managers to check the effectiveness of the internal control systems and operations. It is located under the Board and conducts business audits in accordance with the regulations and policies. The annual audit plan is formulated based on the results of the risk assessment made at the end of every year. After the approval of the Board, the plan is sent to the competent authorities via the Internet information system for their reference.

Organization and functioning of Chunghwa Telecom’s internal audit unit:

<https://www.cht.com.tw/en/home/cht/about-cht/corporate-governance/internal-audit-function> 

## Transparent Information Disclosure

The corporate governance of Chunghwa Telecom places great emphasis on integrity, accountability, and trustworthiness. We are committed to reducing information asymmetry between the management and external stakeholders, and utilize a variety of means such as the corporate website, a Market Observation Post System, Annual Reports, CSR Reports, press conferences and investor conferences to facilitate transparent communication with stakeholders. Furthermore, measures have been taken to ensure the timeliness, quality, balance, and credibility of the information disclosed. In 2019, the Company was ranked among the top **20%** in the 5th Corporate Governance Evaluation by the TWSE.





### Strengthen Business Management

To improve the quality of business marketing and consumers' trust, we have formulated the "Business Marketing Standards" to ensure the execution of business aligns with the requirements of the competent authority, while including compliance status into the evaluation of higher management's performance. Chunghwa Telecom received **no penalty from the Fair Trade Commission in 2018**.

### Supporting Global CSR Initiatives and Guidelines

We willingly comply with the principles of The UN Global Compact and respect and uphold all basic human rights recognized in the world. We refrain from any disregard or neglect of such rights. In terms of employment practice, we protect the right of workers to freedom of association, while recognizing and supporting their rights to also negotiate with the employer. We are dedicated to eliminating all forms of illegal labor and discrimination.

Chunghwa Telecom has publicly disclosed its human rights policy and emphasizes the importance of such issues. It has a system in place to address violations and will continue with human rights protection as part of corporate policy. The Company openly states a respect for human rights and reviews human rights issues on a yearly basis. The Company keeps detailed records of internal findings concerning human rights policy, including child labor, the rights of indigenous peoples, and supplier human rights assessment. Current practices are audited regularly and the findings are used for review and correction by relevant departments. Chunghwa Telecom's Telecom Training Institute organizes human rights-related courses on a yearly basis and whenever there is a change in labor regulations and policies. **6** courses totaling **36** hours were held in 2018; **163** employees had participated in these courses.

Chunghwa Telecom Human Rights Policy: <https://goo.gl/7BHsx2> 

## Climate Risk Management

Chunghwa Telecom builds a systematic and organized corporate governance structure to ensure that climate change-related challenges are incorporated into the Company’s annual strategy in real time and that relevant projects are implemented.

### The Supervisory Responsibility of the Board of Directors

The chairperson and vice-chairperson of the CSR Committee of CHT are the Company’s Chairman and President respectively, who both are also members of the Board of Directors of CHT to ensure that climate change-related issues are discussed and reviewed at the annual CSR Committee, and report to the Board of Directors.

Recognizing the importance of climate change issues, CHT started to promote the “Measures Governing the Performance of Senior Managers” in 2018, incorporating “Corporate Social Responsibility” and “Climate Change” into the salary indicators, and evaluating the performance of corporate social responsibility implementation through relevant mechanisms and indicators.

### The Role of Management

The Environmental Sustainability Task Force is established under the Chunghwa Telecom CSR Committee to evaluate climate-related risks and opportunities via the Company’s risk management procedures, which is carried out in accordance with the long-term strategies set by the Board of Directors, the needs of international investors, rating agencies, and stakeholders.

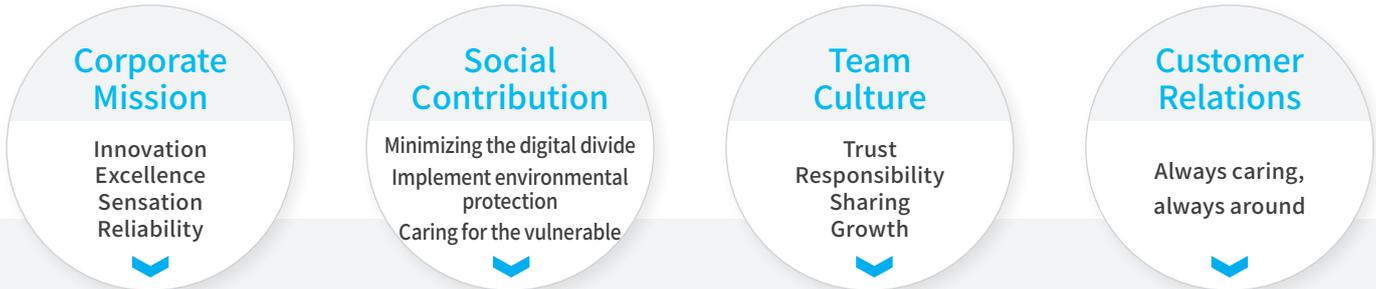
In addition, the CSR committee conducts annual review of the Company’s carbon management strategies, plans for appropriate budget implementation action plans, and sets related performance targets to ensure the incorporation of climate-related strategies in departments’ annual business operations. The related management responsibilities include:



# CSR Management

We launched a CSR management system in 2006, and established the “CSR Committee” to stipulate sustainable policies. We also established six CSR groups, using a top-down approach to achieve sustainable action. The Chunghwa Telecom sustainable development strategy utilizes the competence and unique resources of the Company to implement sustainable action from the six groups with the focus on such matters as “Create social harmony, Digital inclusion, Green ICT products and services, Green brand management and Energy conservation and carbon reduction.”

## Chunghwa Telecom’s CSR Vision



- Corporate Mission**  
Innovation  
Excellence  
Sensation  
Reliability
  - Social Contribution**  
Minimizing the digital divide  
Implement environmental protection  
Caring for the vulnerable
  - Team Culture**  
Trust  
Responsibility  
Sharing  
Growth
  - Customer Relations**  
Always caring,  
always around
1. Facilitate positive business evolution through mobile, broadband, value-added and ICT integration services.
  2. Develop emerging service opportunities such as Cloud and IoT (Internet of Things); work with partners to generate best strategies.
  3. Continue to strengthen the applications of Internet facilities and information technologies to support business transformation and growth.
  4. Strengthen resource utilization and management mechanism to improve the efficiency of resources.
  5. Develop overseas ICT market to explore new opportunities.
  6. Sharpen the unique advantage of the subsidiaries to enhance the Company's competitiveness.
  7. Infuse telecom expertise into corporate social responsibility issues to implement the Company's commitment to corporate citizenship.

Corporate Social Responsibility Best-Practice Principles for Chunghwa Telecom Co., Ltd:  
[https://www.cht.com.tw/home/cht/-/media/Web/PDF/About-CHT/Corporate-Governance/Other-Bylaws-EN/CSR\\_Best\\_Practice\\_Principles\\_for\\_CHT.pdf](https://www.cht.com.tw/home/cht/-/media/Web/PDF/About-CHT/Corporate-Governance/Other-Bylaws-EN/CSR_Best_Practice_Principles_for_CHT.pdf)

## Internalization and Communication of CSR

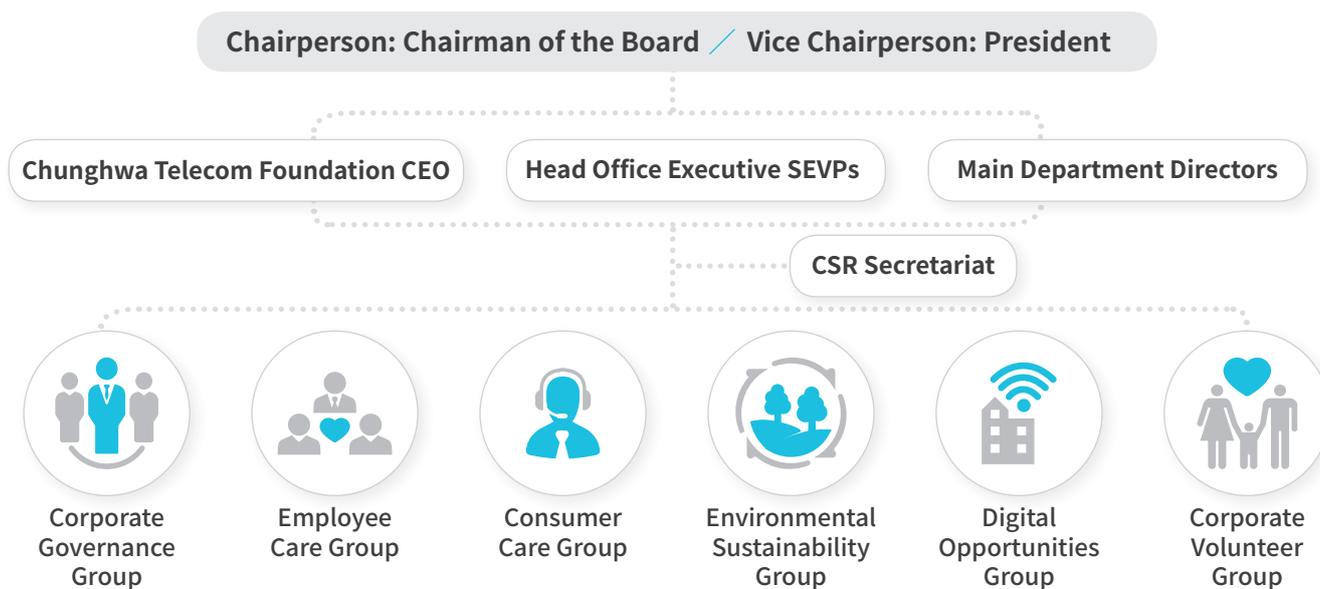
To ensure that all employees understand the spirit of CSR, we have established diverse channels for communications and education of related topics. The initiative integrated with a performance evaluation that helps to translate the concept of CSR into actions and is practiced in routine operations.

Channel	Item	Content
Communication within Senior Management	Senior management meeting	Material CSR issues are discussed in the senior management meeting annually, and the resolution indicates our improvement and direction.
Employee Forum	Chunghwa Telecom online forum	We have an intra-site for employees to share opinions with the Company and make suggestions. We will discuss the issues of concern with the employees and resolve them timely.
Employee Training	Environmental training	We provide at least 4 hours of training every year as well as educational ecological tours that instill a spirit of environmental sustainability.
	CSR training	We provide CSR related education every year, and invite external consultants to run seminars and courses in accordance with international trends.
	New employee training	New employees undergo three days of pre-service training that includes the personnel system, working guidelines, and labor relations. The Labor Standards Act is explained in detail with respect to labor-management coordination and the handling of disputes.
	e-Learning	We post relevant training courses and information on the e-Learning system that can be downloaded and studied freely by the employees.

## The CSR Committee

The “Chunghwa Telecom CSR Committee” was established for expanding sustainable benefits of our core competence and implementing CSR vision as a starting point to promote the sustainable development of the industry and society.

Item	Description
Representative	Chi-Mau Sheih, Chairman
Mechanism	CSR Committee is responsible for coordinating each plan and supervising the progress of the policies approved by the Board of Directors. It also periodically reports the relevant issues and the results of communicating to stakeholders to the Board. The Board is in charge of the final performance evaluation every year.
Execution	<ul style="list-style-type: none"> <li>The Public Affairs Department is designated as CSR Secretariat.</li> <li>The CSR Secretariat is responsible for relative policies and action planning. It is also in charge of budgeting, educational training, and management of follow-ups and awards measures.</li> <li>The six groups, branches and affiliates are responsible for promotions and implementation of related projects.</li> </ul>
Meeting Frequency	Quarterly
Report Approval	Reports are submitted to the Chairman for final approval after the managements’ (SEVP) review.



Channel	Item	Content
Annual Evaluation	Administrative sustainability performance	We set energy reduction targets and link the results with employees’ performance bonuses.
	Online test on CoC	All our employees are required to take the “Chunghwa Telecom Code of Business Conduct Test” each year.
	Reporting mechanism	Once an employee is found to violate corporate regulations, it will affect his/her performance bonuses.
Others	CSR Report workshop	Internal training on new ways of preparing reports is held from time to time.
	Official website Social media	To coordinate with modern stakeholders’ communication pattern, we established dedicated CSR multimedia webpages on the official website, YouTube channel and a Facebook fan page as ways of communicating with our stakeholders.

# Sustainability Value Strategy

The SDGs CHT contributes to in this chapter



Six Main Capitals -	24
Create Sustainability Value	
Five Major Forces -	24
Drive the Sustainable Cycle	
Creating Sustainable Value	26



Six Main Capitals - “**Financial Capital, Human Resource Capital, Intelligence Capital, Manufacturing Capital, Social Capital and Nature Capital**”



Five Major Forces - “The Motivator of the **Digital Economy**, The Pilot of **Creative Industry**, The **Happiness Value** Protector, The **Green Corporation** Pioneer, and The **Social Value** Guide”



Vision-“**Digital economy transformation, Industrial innovation, Talent startup, Happy corporation, Considerate services, Transform into a green corporation thoroughly, and Connect · Hope · Technology**”



The **true value** created by Chunghwa Telecom in 2018 is **226.9 billion**

The result of our CSR input has been the creation of profit in corporate operation and a maximization of shareholder value. Our shareholder structure allows us to carry on a broad citizen responsibility. Our position in the ICT industry and the innovative products and service we provide give us the opportunity to use technology and innovation to control the risks and grasp opportunities. Our innovative products and services have a positive economic influence on the value chain, create sustainable value for the industry and the public and greatly minimize the negative impact on the environment.

▶ Six Main Capitals - Create Sustainability Value 24

▶ Five Major Forces - Drive the Sustainable Cycle 24



### Financial Capital

- Share capital NT\$ **77,574,465** thousand
- Capital expenditures NT\$ **28,549,929** thousand



### Human Resource Capital

- Salary and welfare expenses NT\$ **47,024,000** thousand
- Training expenses NT\$ **502,370** thousand



### Intelligence Capital

- R&D expenses NT\$ **3,725,249** thousand
- Marketing expenses NT\$ **23,170,024** thousand



## Six Main Capitals Create Sustainability Value



## Five Major Forces Drive the Sustainable Cycle



### Manufacturing Capital

- Equipment installation and maintenance expenses NT\$ **45,563,085** thousand
- Cell tower installation expenses NT\$ **16,278,276** thousand
- IDC equipment installation expenses NT\$ **196,734** thousand



### Social Capital

- Social investment NT\$ **815,389** thousand
- Universal telecom services NT\$ **425,633** thousand



### Nature Capital

- Green procurement NT\$ **1,487,000** thousand
- Environmental management expenses NT\$ **319,637** thousand



## The Motivator of the Digital Economy

### Vision

Digital economy transformation

### Strategy

- Becoming the 5G telecom leading brand
- Stimulating innovative application and creating new business models



## The Pilot of Creative Industry

### Vision

Industry innovation & Talent Startup

### Strategy

- Investing and fostering startup business
- Encouraging innovation and start-up internally

We utilize our ICT corporate core competence and integrate with CSR to establish the five main forces, “The Digital Economy Motivator, The Creative Industry Pilot, The Happiness Value Protector, The Green Corporation Pioneer, The Social Value Guide.” We think that the input in these five main fields will help accomplish a society with digital inclusion and the future of sustainability development.



## The Happiness Value Protector

### Vision

Happy corporation & Considerate services

### Strategy

- Establishing a healthy and happy workplace
- Protecting information and labor human rights
- Providing excellent innovative service



## The Green Corporation Pioneer

### Vision

Transforming into a green corporation thoroughly

### Strategy

- 5G(Green) green action
- Constructing a green and low-carbon supply chain



## The Social Value Guide

### Vision

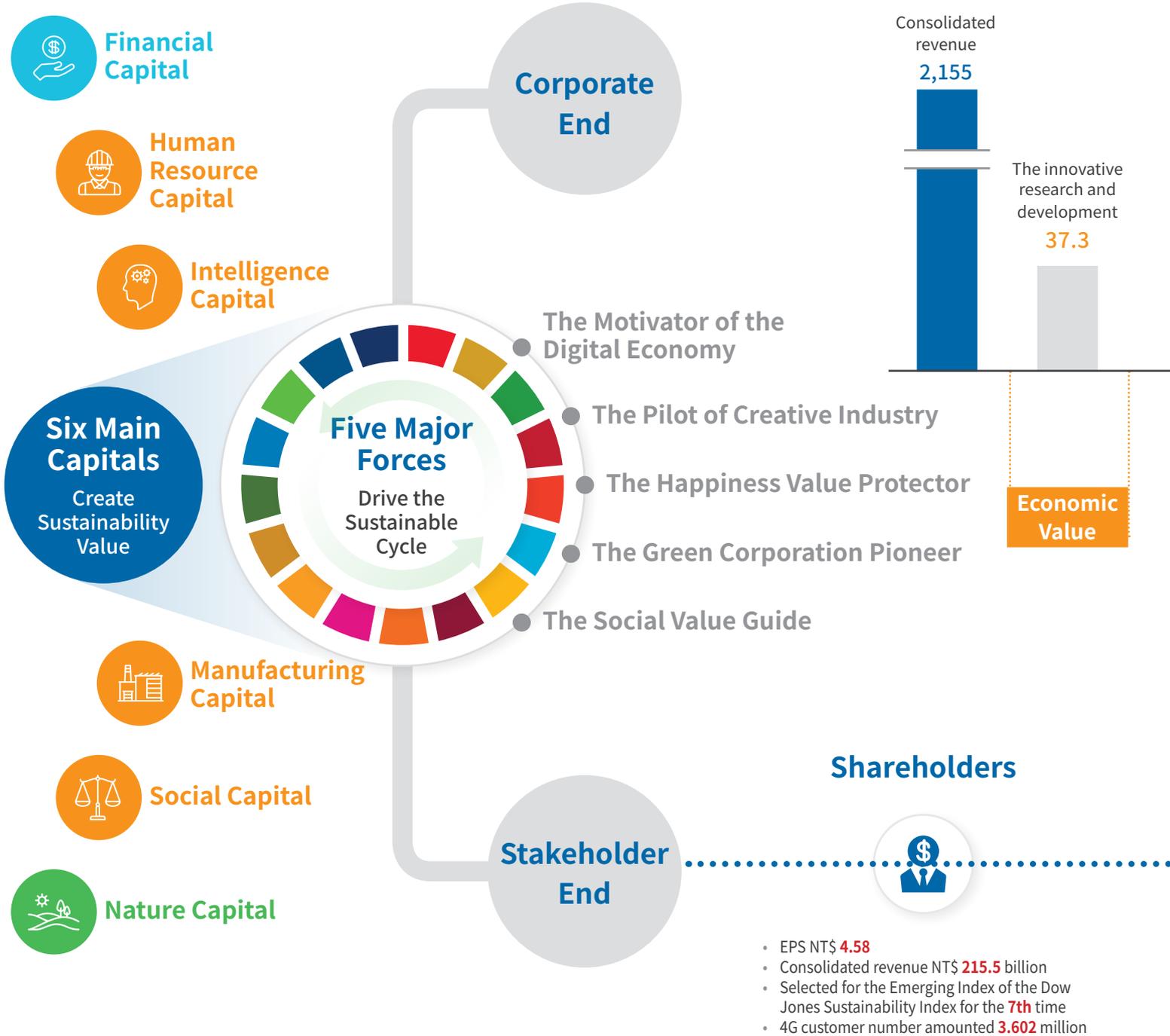
Connect · Hope · Technology

### Strategy

- 5I SDGs digital inclusion initiative
- Corporate volunteer work

# Creating Sustainable Value

Our CSR issues and actions have created sound economic, environmental and social value. Although we have made serious efforts to adapt quantized data when setting-up and managing CSR plans, targets and performance, we have come to realize the difficulty of quantizing environmental and social values. There is still lots of true value that cannot be realized with the currency presently used as evaluation indicators of CSR performance.

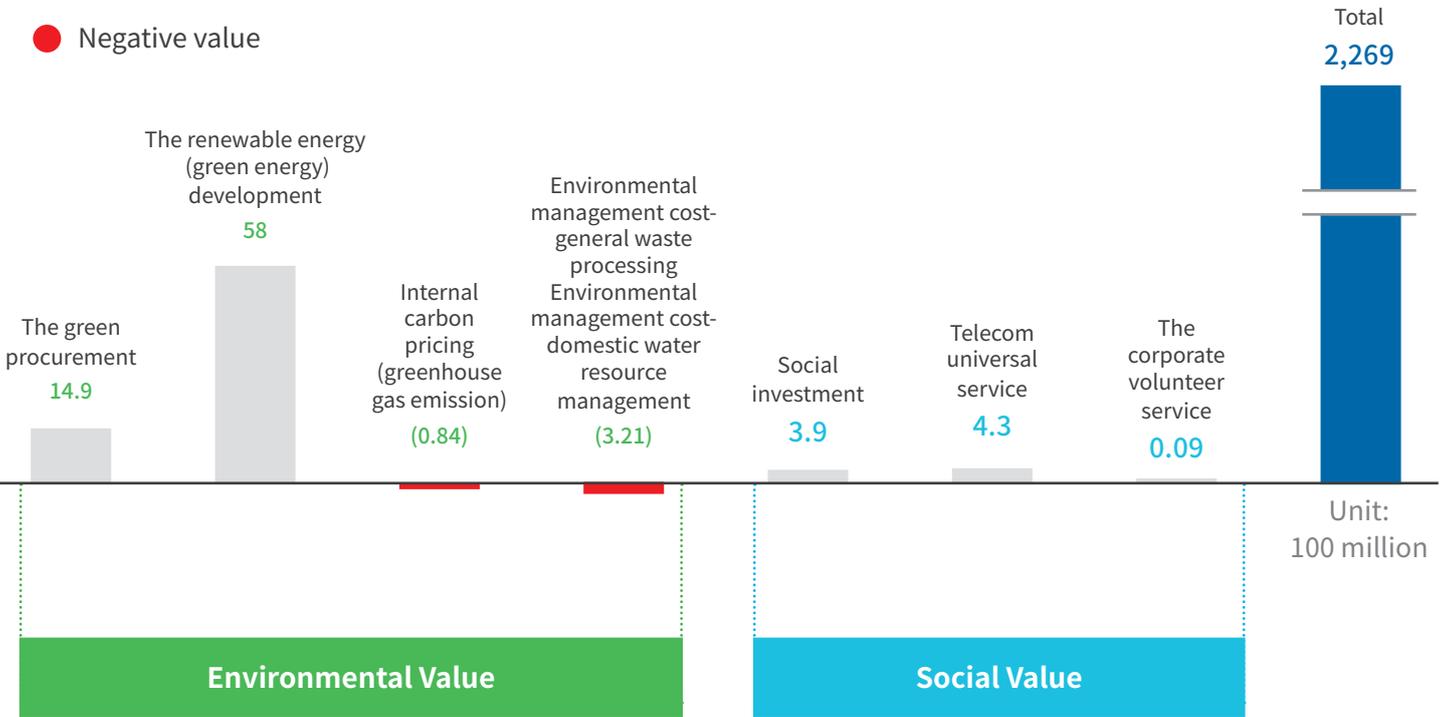




▶ Creating Sustainability Value 26

We have used a “True Value” method of calculation. Positive (+) and negative (-) currency values have been assigned in an assessment of our influence on society and the environment. This gives a sound idea of the real environmental and social value (profit and cost) of our sustainability efforts in 2018. The economic, social and environmental currency value CHT created on operation has also been blended in.

- Positive value
- Negative value



- Source of true value calculation for corporate volunteer service : <https://www.volunteeringwa.org.au/resources/volunteer-benefits-calculator>
- Source of true value calculation for Telecom universal service : Research conclusion, Journal of China Institute of Technology Vol.40-2009.06

**Employees**      **Clients / Costumers**      **Communities / NPOs**      **Supply Chain Partners**



- Employee salary and benefits are NT\$ **47,024** million
- The average training hours per person are **41** hours
- The total training cost is NT\$ **502,370** thousand
- The total service hours of the corporate volunteer service are **6,368** hours
- The occupational injury rate per thousand workers is **1.26** for men and **2.54** for women
- We have **799** employees with disabilities (the legal amount is 208 people)
- 46** aboriginal employees
- The employee satisfaction score is **81.74** (out of 100)



- We have more than **57** thousand public Wi-Fi hotspots
- The customer satisfaction score is **6.89** (10-point system)
- The customer hotline service satisfaction score is **4.71** (5-point system)



- We provide the disadvantaged groups' communication for **53,712** households
- The subsidy amount is NT\$ **137,865** million
- Coverage rate of the 12Mbps universal broadband service is over **98.01%**
- The voice assistant App for the blind has been downloaded **51,360** times
- The location of good digital neighbor has accumulated to **85** places



- The local procurement percentage takes up **90%** of the total procurement
- The green procurement amount is NT\$ **1,487** million



# Material Topics and Impact

**2018 Material Topics and Impact**

**30**

**Stakeholders Engagement**

**34**



The annual material topics are determined through the following process: internal feedback, external questionnaires, topic identification by the CSR Secretariat, topic analysis by the six CSR task forces, ranking the topics, and finally, confirming the results.



Material topics in 2018 include **Economic performance, Market positioning, Anti-corruption, Anti-competitive practices, Energy, emissions, Employment, Labor relations, Occupational health & safety, Product marketing and labeling, Customer privacy, and Socioeconomic compliance.**



We have a set of procedures in place to identify, engage, interact, and communicate with stakeholders through various channels based on the Stakeholder Engagement Standard (**AA 1000SES:2015**).



**The Sustainable Procurement Standard (ISO 20400)** was formally introduced at The 2018 Annual CSR Supplier Conference.

We intend to provide all stakeholders concerning the future of Chunghwa Telecom as well as the telecom industry with a more comprehensive understanding of how Chunghwa Telecom has exerted its industry influence on CSR topics. This purpose has improved the quality of our actions and disclosures.

## 2018 Material Topics and Impact

CHT is an integrated telecom service provider. Except for the use of electricity at business locations, generator rooms, and data centers, our other service processes and mechanisms have no major negative impact on the environment and society. However, with over 20 thousand employees, the capabilities of value chain procurement and supply and business locations all over Taiwan, we understand that our ICT services and products can bring positive transforming and business opportunities to the industry, economic development and people’s life in Taiwan. Therefore, we seize opportunities and endeavor to decrease the potential risks from material CSR topics.

The Material Topic	Within the organization			Outside the organization	
	CHT	Honghwa Subsidiary	CHT Security Subsidiary	Engineering Suppliers	Equipment Suppliers
Economic Performance	●	■	■	■	■
Market Presence	●	■	■		
Anti-Corruption	●				
Anti-Competitive Behavior	●	■			
Energy	●				
Emissions	●				
Employment	●	■	■		
Labor Management Relations	●	■	■		
Occupational Health and Safety	●	■	■	▲	▲
Marketing and Labeling	●	■			
Customer Privacy	●	■	■		
Socioeconomic Compliance	●	■	■		

1. ● : direct impact ; ▲ : indirect impact ; ■ : impact from business relations.
2. Except for the impact within the CHT organization (including 2 subsidiaries), the influence of the external impact is determined by the “supplier type.”
3. CHT also promotes relative management principles and actions. For detailed topic information, please refer to the corresponding chapter and page.

### Process for Determining Material Topics

**STEP 1**  
**Confirming the determining process for material topics**



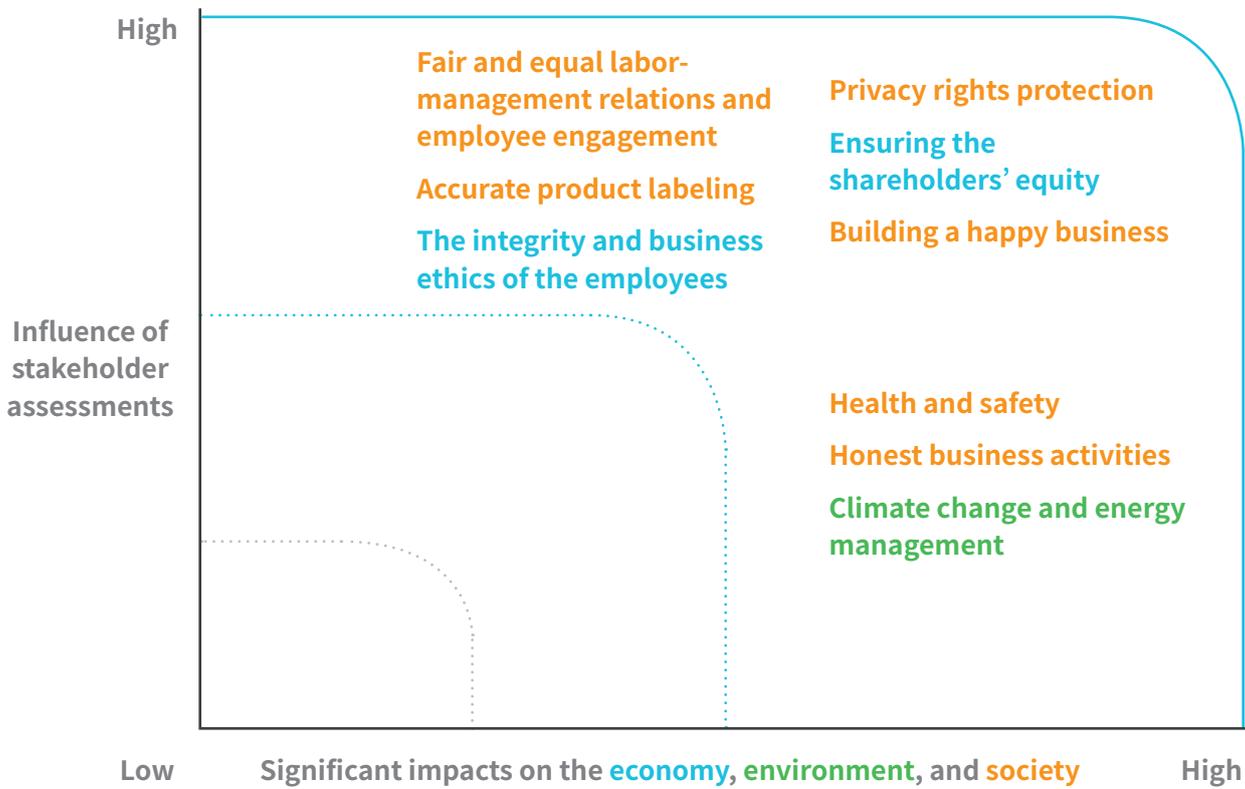
The CSR Secretariat calls for the six CSR working groups to confirm the material topics determining process of the current year. We perform through feedback and external questionnaires.

**STEP 2**  
**Information collecting / Topic identification**



The CSR Secretariat is responsible for identifying CSR topics while considering CHT’s short-, mid, and long-term achievement and referring to material it collects including international guidelines, such as the GRI Standards, sustainability rating surveys, international business information benchmarks and the news related to CHT in 2018.

## The Materiality Matrix



1. The materiality threshold: 2.6 and above for both the X-axis and the Y-axis (3 point scale)
2. Chunghwa Telecom also willingly discloses issues that are not identified as material issues in 2018, please refer to the topics with “\*” in the index catalog.

### STEP 3 Analysis / Prioritizing



The CSR working groups analyze topics and hold discussions based on internal consideration, industry status, industry chain practice, and advice from stakeholders. The topics are prioritized according to urgency and seriousness and the level of impact.

### STEP 4 Result Confirmation / Materiality matrix

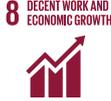
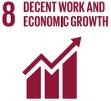
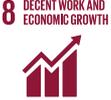


Members of the CSR working groups were invited to consider the relevance between the topics and the actual operation according to internal and external information. The 2018 topic identification results were confirmed and a materiality matrix was prepared for submission to the CSR Committee for approval.

## 2018 Material Topics Description

Sustainability Aspect	Material Topics	Meaning to CHT
 <b>EC</b>	Ensuring shareholders' equity	Distributing shareholders' dividends is a factor in maintaining the shareholders and investors' confidence in our operation, and increasing the willingness for them to possess our stocks in the long term.
	The integrity and business ethics of the employees	Performing operational activities with the highest ethical standards not only complies with the regulations but also allows employees to reflect on themselves when performing business activities.
 <b>EN</b>	Climate change and energy management	The climate change issue has a close relation with the operation of a corporation. We actively establish relative plans and goals to strive for the reduction of the cost and risk related to climate change in the value chain.
 <b>SO</b>	Building a happy business	We develop benefits better than the regulations, enhance employee well-being, and act to give employees peace of mind to work and share business results.
	Fair and equal labor-management relations and employee engagement	Through formal engagement, an agreement can be reached regarding the rights and responsibilities of employees to both protect them and the employer.
	Health and safety	We incorporated ISO 45001 to ensure that each process is in compliance with the regulation.
	Information on the products and service	We convey the right product and service information and provide professional and excellent service to let the customers find the most suitable solutions quickly.
	Privacy protection	We continue to strengthen the customers' information security through diverse processes and systematic regulations, preventing information leak or improper information search of the customer service staff.
	Social and economic law compliance	The upright operation is the core value CHT insists on. We make the employees strictly follow the laws and regulations through policies and propaganda.



Topic Corresponding with the GRI Standards	Management Principle (page number)	2018 Performances (page number)	Topic Corresponding with UN SDGs
Economic Performance	p.16	p.16	 
Anti-Corruption Anti-Competitive Behavior	p.17	p.17	
Energy Emissions	p.44,93	p.49,95	  
Market Presence	p.69,70	p.69,70	 
Employment / Labor Management Relations	p.72	p.72	 
Occupational Health and Safety	p.76	p.77-78	 
Marketing and Labeling	p.84	p.69	 
Customer Privacy	p.85	p.85	 
Socioeconomic Compliance	p.17,85,90	p.17,85,90	 

# Stakeholders Engagement

We have always thought that “Chunghwa Telecom can do more.” As the leading brand in the telecom industry in Taiwan, CHT focuses on industry development and competition. In addition to good products, services and profits, we also give back to society. We also pay close attention to the voices of our internal and external stakeholders before making careful responses to the needs of society.

The identification of the stakeholders and their issues is a very important part of the practice of CSR. We have established a stakeholder identification and engagement process in accordance with AA 1000SES (2015), interacting and communicating with stakeholders through diverse channels.

In the initial meeting of CSR report preparation, we invite members from all departments to exchange the issues related to current key stakeholders and their concerns. Upon reaching mutual understanding, the result is incorporated into a table that is regarded as an essential reference for the disclosures in the report. In the process of promoting CSR activities and information disclosure, we consult the opinion of the internal and external stakeholders, important relevant mechanisms include:

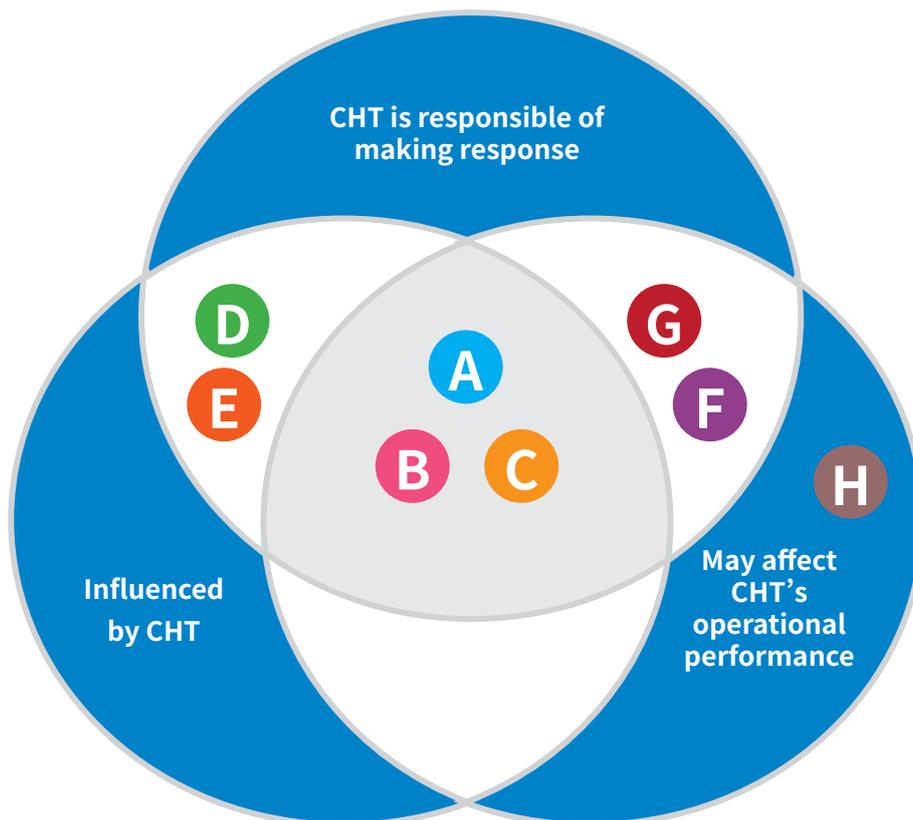
- “Consultation meeting with external professionals” for CSR report
- Regular invitation of external professionals to the “CSR Conference” and relevant forums
- The “CSR Supplier Conference” is held every year
- CHT was the first to create “CSR videos” and the CHT official YouTube CSR program to record the implementation of CSR action on a regular basis, as well as the collection of internal and external feedback for further improvement.  
 CSR Video link: <https://www.youtube.com/playlist?list=PLt2-zON2MQU34k-MNlh7WuUWtvPamw6wv>
- Specialists designated for CSR and the CHT Foundation

CHT Stakeholder Engagement Guideline:

[https://www.cht.com.tw/home/cht/-/media/Web/PDF/Sustainability/Csr-se/Stakeholder\\_engagement\\_guideline\\_en.pdf](https://www.cht.com.tw/home/cht/-/media/Web/PDF/Sustainability/Csr-se/Stakeholder_engagement_guideline_en.pdf)

CHT Stakeholder Communication Channel:

<https://www.cht.com.tw/en/home/cht/sustainability/stakeholder/stakeholder-engagement>





Stakeholder	Meaning to Chunghwa Telecom	Focused Topics	Communication channel	Communication Frequency
 <b>Shareholders/ Investors</b>	As shareholders/ investors are our stockholders, we must be accountable to them.	<ul style="list-style-type: none"> <li>Economic Performance</li> </ul>	<ul style="list-style-type: none"> <li>Shareholders' meeting</li> <li>Shareholder hotline</li> <li>Earning results conference</li> </ul>	<ul style="list-style-type: none"> <li>Annually</li> <li>Quarterly</li> <li>Real-time</li> </ul>
 <b>Employees</b>	Employees are critical to the sustainable development and they are the driving force for sustainable growth.	<ul style="list-style-type: none"> <li>Market Presence</li> <li>Energy</li> <li>Employment</li> <li>Labor/ Management Relations</li> <li>Occupational Health and Safety</li> </ul>	<ul style="list-style-type: none"> <li>E-mail</li> <li>Telephone call</li> <li>Online forum</li> <li>Labor employer meeting</li> </ul>	Real-time
 <b>Clients</b>	Only when customers prefer the products and services of Chunghwa Telecom could we have value for existence.	<ul style="list-style-type: none"> <li>Marketing and Labeling</li> <li>Customer Privacy</li> </ul>	<ul style="list-style-type: none"> <li>Service hotline</li> <li>Customer service center</li> </ul>	Real-time
 <b>Suppliers</b>	The large product and service chain of Chunghwa Telecom relies on the stable support of the suppliers.	<ul style="list-style-type: none"> <li>Occupational Health and Safety</li> </ul>	<ul style="list-style-type: none"> <li>E-mail</li> <li>Hotline</li> <li>CSR Supplier Conference</li> <li>Supplier Training</li> </ul>	Real-time
 <b>Communities/NPOs</b>	We wish to reciprocate to society with our professional standing in telecom and create a better future.	<ul style="list-style-type: none"> <li>Socioeconomic Compliance</li> <li>Emissions</li> </ul>	<ul style="list-style-type: none"> <li>E-mail</li> <li>Hotline</li> <li>stakeholder briefing</li> </ul>	Real-time
 <b>Media/Accreditation Institutes</b>	We have learned and grown with the media and accreditation institute through their mentorship in sustainable development.	<ul style="list-style-type: none"> <li>Socioeconomic Compliance</li> </ul>	<ul style="list-style-type: none"> <li>E-mail</li> <li>Hotline</li> <li>Press release</li> <li>Press conference</li> <li>Survey</li> </ul>	Real-time
 <b>Competent Authorities</b>	Our products, services and related marketing behaviors are subject to audits by the competent authority.	<ul style="list-style-type: none"> <li>Anti-corruption</li> <li>Anti-competitive Behavior</li> </ul>	<ul style="list-style-type: none"> <li>E-mail</li> <li>Official document</li> <li>Meeting</li> <li>Telephone call</li> <li>Visit</li> </ul>	Real-time
 <b>Competitors</b>	As the leading brand in the telecom industry in Taiwan, we strive to engage in fair competition in the industry for a healthy development of the industry.	<ul style="list-style-type: none"> <li>Anti-competitive Behavior</li> <li>Economic Performance</li> </ul>	<ul style="list-style-type: none"> <li>Official document</li> <li>Meeting</li> </ul>	Real-time

## 2018 Results of Critical Stakeholders Engagement



### Employees

- 6 Labor-management conferences
- 2 Unscheduled meetings



### Shareholders / Investors

- 1 Annual general meeting
- 4 Earning results conferences



### Clients

The “123 customer service hotline” has served over **51 million** cases



### Competent Authorities

Engaging in and communicating with the competent authorities, such as the Legislative Yuan, on **896** cases



### Media

- 288 Press releases in total
- 16 Press conferences in total



### Suppliers

Approximately **90** suppliers participating in the “2018 Annual CSR Supplier Conference”

Approximately **60** suppliers participating in the environmental and educational visiting tour

## The 2018 Annual CSR Supplier Conference

The 2018 Annual CSR Service Provider Convention was hosted by CHT's President Chi-Mau Sheih. At the convention, we formally introduced the Sustainable Procurement Standard (ISO 20400) to our procurement process. By establishing a "green supply chain" and evaluating suppliers based on sustainability, we are one step closer to achieving our sustainable goals in environmental protection, corporate governance, labor rights, and occupational health & safety.

CHT announced its participation in the Global Carbon Disclosure Project back in 2017. We were the first telecom company in Taiwan to do so, marking a milestone in sustainable value creation. Beginning in 2018, we went a step further and started to encourage our suppliers to fully disclose their greenhouse gas emissions and devise plans to reduce carbon footprint. The first "CDP Newcomer Award" was given to AcBel Polytech Inc. to applaud its efforts in carbon disclosure. Four other suppliers—SYSAGE Technology, Ta Ya Electric Wire & Cable, Hua Eng Wire & Cable, and Nokia Taiwan—were also commended for their efforts in performing "CSR second party audit" and "online information disclosure."

The 2018 convention also included two keynote speeches. Prof. Hsin-Yu Shan from National Chiao Tung University discussed the importance of "Corporate Disaster Prevention"—establishing a corporate disaster management system based on forward-looking risk assessment to strengthen internal resilience to climate changes. Dr. Tony Mo, the Deputy Secretary General of BCSD-Taiwan, addressed the emerging trend of "circular economy"—businesses can create "green opportunities" through innovation and resource integration, pioneering a unique path towards sustainable development. The convention concluded with a promise by Ming-Fang Li, the Deputy Manager of Procurement, that further actions shall be taken to improve suppliers' sustainability. Through the practical implementation of second party sustainability audits, we encourage our suppliers to strike a balance between economic benefits, environmental protection, and social welfare. We hope that CHT, together with its suppliers, can build a sustainable supply chain system from which all parties involved can benefit.



# Sustainability Risks and Opportunities

The SDGs CHT contributes to in this chapter

7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



Emerging Risks	42
Emerging Opportunities	42
Climate Change Risks	44
Cybersecurity Risks	50



Our “**Risk Management Committee**” adopts **Enterprise Risk Management (ERM)** software and the “**Risk Analysis Matrix**” as our assessment tools, governing every business decision made by our employees.



The development of the **Artificial Intelligence of Things (AIoT)** will popularize edge computing, IoT phone numbers, drones, AR, VR, and smart homes. These emerging industries will propel the development of hardware and operating systems.



CHT is the **first** telecom company in Taiwan to sign the support statement issued by the **Task Force on Climate-Related Financial Disclosures (TCFD)**.



CHT promises that it will submit its **Science Based Targets (SBT)** on carbon reduction for review within the next **2** years.



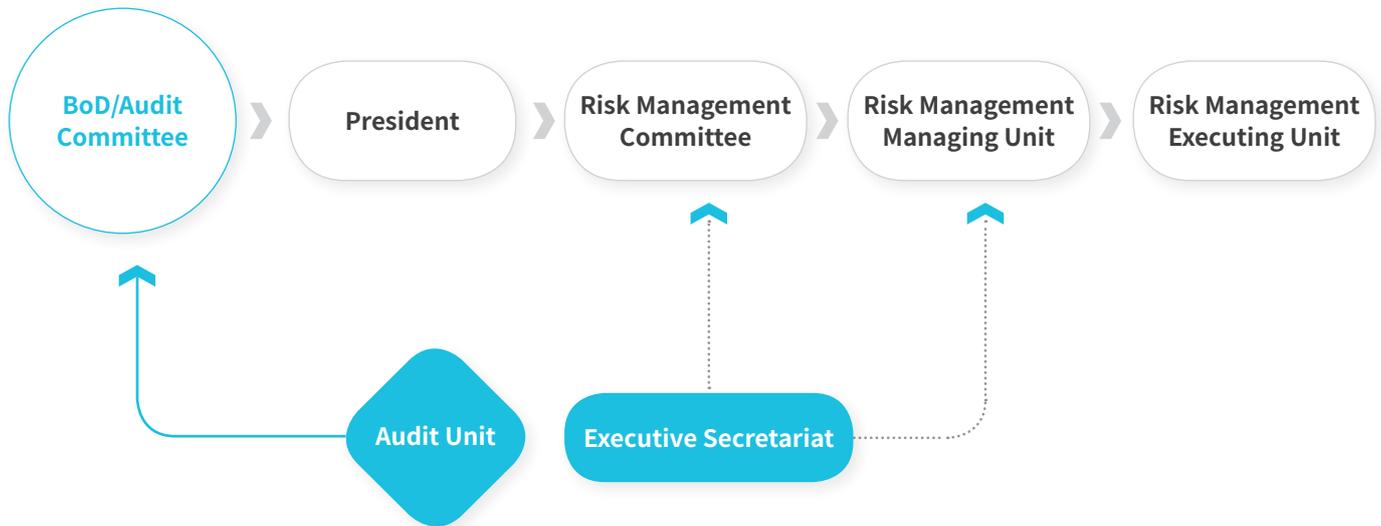
CHT is actively looking into the development of renewable energy. We have the largest capacity, self-built or otherwise, for solar energy among all telecom companies in Taiwan.



Adopting a risk-based approach, CHT established the “**Chunghwa Telecom Cybersecurity and Privacy Protection Framework**.” Based on NIST’s Cybersecurity Framework (CSF) and domestic and international standards and regulations, the framework includes five steps: identify, protect, detect, respond, and improve.

CHT places emphasis on the control of the corporate operation and sustainability risk. In 2016, the Company established a Risk Management Committee with the President as convener and high rank managers as members. The committee supervises risk management throughout the organization and is responsible for prioritizing identified risks, formulating response strategies to key risk issues, and reporting to the board of directors when deemed necessary. Through control of the mechanism at each level, potential risks and loss to the Company can be minimized.

### CHT Risk Management Organization Structure



### Identifying and Analyzing Climate Change Related Risks

Identifying and analyzing climate related risks are important responsibilities of CHT’s “Risk Management Committee.” Led by CHT’s President in conjunction with committee members, the committee takes charge of risk management. Issues are prioritized based on the types of risks and urgency involved. Apart from formulating an action plan, climate-related issues are reported to the Board of Directors.

### Managing and Assessing Climate Change Related Risks

CHT’s Environmental Sustainability Task Force systematically reviews climate change-related issues that could potentially impact day-to-day business operations and comes up with countermeasures based on its “Five Year Plan of Sustainable Development Strategies and Goals.”

The review process includes a scenario analysis of physical and transitional risks and how they could affect major business operations. It also evaluates the effectiveness of energy-saving practices and the adaptability of equipment, ensuring normal operation even in extreme weather conditions. The potentiality of natural disasters is considered in the construction of telecom equipment. In other words, we assess the risks of earthquakes, tsunamis, geological instability, and other weather-related risks to ensure our equipment operates correctly and to ensure the safety of our employees in the event of a natural disaster.

### Including Weather Related Risks in the Internal Risk Management Framework

CHT’s CSR Environmental Sustainability Task Force keeps track of climate change on a regular basis and submits a yearly assessment report to the Risk Management Committee, which, if necessary, takes measures to mitigate the level of risks.

Based on the task force’s feedback, the Risk Management Committee will seek ways to improve the existing risk management model to ensure that the process is consistent with our business goals. Finally, the Chief Audit Executive, who performs the final review, reports the assessment results to the Board of Directors. Our goal is to incorporate climate change-related risks into our existing internal risk management framework.

Aspects	Description
<b>Organizational Aspect</b>	<ul style="list-style-type: none"> <li>The “Risk Management Committee” was established</li> </ul>
<b>Strategic Aspect</b>	<ul style="list-style-type: none"> <li>The BoD established the risk management strategy and structure</li> <li>The “Risk Management Regulations” were established as a foundation and are followed by all employees engaged in business operations</li> </ul>
<b>Management System</b>	<ul style="list-style-type: none"> <li>The Enterprise Risk Management (ERM) system was established for the regular control of the risks from each division and business</li> </ul>
<b>Assessment Tool</b>	<ul style="list-style-type: none"> <li>We use the “Risk Analysis Matrix” as our assessment tool to assess legal, network maintenance, market and financial operation risks , etc.</li> <li>For the major operational items and relative CSR issues, we enhance the performance of sensitivity analysis and the pressure test</li> </ul>
<b>Audit Aspect</b>	<ul style="list-style-type: none"> <li>The executive Secretariat helps promote the risk management activities in all company</li> <li>The Auditor reviews the risks and reports to the BoD</li> </ul>
<b>Feedback and Improvement</b>	<ul style="list-style-type: none"> <li>Risk status is followed up monthly and reported to the Risk Management Committee generally</li> <li>The Committee improves the current risk management mechanism based on feedback from individual units to ensure the process is up to date and satisfies the operational need</li> </ul>
<b>Implementation outcomes in 2018</b>	<ul style="list-style-type: none"> <li><b>2</b> meetings were convened.</li> <li>Seminars on “the difference in law application between EU’s GDPR and Taiwan’s Personal Information Protection Act (PIPA)” and “the effectiveness of assessment of the accountability scheme”</li> </ul>



# Emerging Risks

CHT continues with advanced technological research and development to take advantage of the many business opportunities in this digital convergence era and reduce operational risk. We absorb, cultivate and make good use of excellent available talent to integrate Internet and marketing resources. We cooperate closely with our strategic partners in the launch of new services and products that satisfy our customers. We have become “The Digital Economy Motivator and The Creative Industry Pilot,” and we create values for clients, shareholders, employees and society.

## Risk Factor

## Potential Influences (Obstacles)



**The decrease in the voice revenue**

- Market competition and VoIP have caused a slight decrease in voice revenue
- We continue to maintain our competitive edge in broadband Internet, even in the face of low-price competition from cable television.



**The 5G business model is unclear**

- The cost of our 4G investment has not been fully recovered and 5G belongs to the high-frequency spectrum. We predict that serious investment will need to be made to satisfy the requirements for new construction in the near future.



**Energy supply stability**

- A stable and sufficient electricity supply
- The establishment of renewable energy

# Emerging Opportunities

The 5G technology will drive intelligent technological applications. AI will be everywhere around us in the future. Completely new types of services such as AIoT (AI and IoT) will become the core of fast convergence. The rise of new industries, edge computing, the volume of the IoT, drones, AR, VR and the intelligent family, will push corporations in Taiwan to move their business emphasis. We predict that the global output value of AI hardware will exceed NT\$ 5 trillion. This will inevitably become an important force in pushing global economic growth. With the advent of Industry 4.0 and the rapid emergence of new online applications, cybersecurity specialists are issuing warnings regarding the looming threat of multimodal, multifaceted attacks. However, this also creates an opportunity for companies that offer an integrated cybersecurity service package. The government has classified information security as a “matter of national security,” including it as part of the “national defense industry” in the “5+2 New and Innovative Industries Policy.”

## Opportunity Factor

## Potential Business Opportunity



**Development of 5G**

- Forecasts show that 5G technology will result in an output of US\$ **134** billion to the companies in Taiwan in 2035.



**IoT/Big Data**

- International research institute Gartner predicts that the IoT product and service providers will create a marginal benefit of US\$ 300 billion.
- The global IoT output value in 2025 will be US\$ **6** trillion.



**Information Security Management**

- Business opportunities in cyber security are plentiful thanks to the rapid development of IoT technology, the popularization of complex hybrid networks, and the reliance on industrial control systems (ICS).
- The Executive Yuan announced the Cybersecurity Industry Development Action Plan in 2018. The gross output of the industry is expected to exceed NT\$ **78** billion dollars by 2025.
- Gartner predicts the investing amount the companies put into information security will rise to US\$ **114.8** billion in 2020 with a compound annual growth rate of **7.9%** around the globe.



**Climate change (low carbon products and services)**

- For 3 consecutive years, the WEF’s annual risk report has cited “extreme weather events” as the **top** risk factor in terms of occurrence possibility.
- Businesses around the globe are investing in low carbon emission infrastructure, including green energy, electric automobiles, and smart cities to reduce reliance on electricity.
- According to an estimate by The United Nations Environment Programme (UNEP), the volume of outstanding “green bonds” reached a magnitude of US\$ **155** billion in 2017.

## Enhancement and Response Mechanism

- In addition to enhancing current core business, we continue with new product research and development, as well as service and value-added applications. These include video service, information security, IoT, the cloud, mobile payment and other new business.
- We are concentrating on applications related to big data, information security, the cloud, IoT, 5G and the intelligent city. CHT is being transformed into the leading brand for information, communications and digital convergence.
- We have developed an IoT intelligent internet platform by combining five main services, which are information security, big data, blockchains, AI and AR.
- We expect IoT applications to develop rapidly with the advent of 5G and we already have **3** million phone numbers authorized by the NCC. We intend to provide IoT for both industrial and domestic applications.
- We are increasing the percentage of self-built renewable energy devices and have set up emergency power generating equipment to avoid interruption to our services in times of crisis.

CHT IoT Smart Platform: <http://iot.cht.com.tw/iot/>

CHT spares no effort in the refinement of cybersecurity technology. In response to the government's cybersecurity automatization and industry innovation policies, CHT founded Chunghwa Cybersecurity International, a subsidiary dedicated to the development of integrated cybersecurity solutions especially for emerging technologies. We hope that our endeavors will encourage other companies to follow suit, paving the way for the domestic cybersecurity industry to enter the international market.

According to the "Global Risks Report 2019" published by the World Economic Forum (WEF), the "probability" and "magnitude of impact" arising from weather-related risks are now classified as two of the major global economic development factors. CHT possesses the core technologies and capabilities necessary to bring about a greener telecom industry. In a brand new era of IoT, AI, and cloud computing, CHT's commitment to reducing carbon emission and transforming into a green enterprise gives us a competitive edge.

## Enhancement and Response Mechanism

- We cooperate with the 5G office in DoIT, Industrial Technology Research Institute, and Institute for Information Industry to launch the "Taiwan 5G Industry Development Alliance - CHT leading team" project.
- We are forming a national IoT team. Through allying with the international and Taiwanese companies, we create international competitiveness for the IoT industry in Taiwan. There are now **40** first-tier companies in the alliance.
- We developed the IoT intelligent internet platform on our own, combining 5 main services, including information security, big data, the blockchain, AI, and AR.
- Through emerging technologies such as machine learning, big data analytics, and AI, we plan to establish the newer version of Security Operation Center (SOC), providing companies with real time cyberattack information and enabling them to counteract in a timely manner.
- Our in-house developed multi-factor identity authentication technology can be incorporated into and with smart energy, smart cities, smart healthcare, and smart homes, providing a safe and reliable biometric identification system for IoT networks.
- With our current IT solutions as the basis, we plan to offer even more complex solutions for clients using ICS/OT infrastructure connected to a hybrid network.
- We position ourselves as a managed security service provider (MSSP) dedicated to the provision of a wide range of cybersecurity solutions. In addition to extending our market reach within the border, we are actively seeking business opportunities overseas.
- We strive to maintain our leading position in the industry by consolidating our advantages in internet services, distributions channels, and R&D capabilities with domestic and overseas high-quality products to provide integrated solutions to our large enterprise clients.
- "Green Product and Service Program"—In addition to developing renewable energy, we plan to provide businesses with energy-saving technology and services.
- By combining innovative green services, such as video conferencing, e-bills, and other cloud services, with our existing technology, we plan to build smart cities with lower carbon emission.
- We are building a cloud service platform that enables clients to access real time data regarding their energy usage and equipment status so that failures can be predicted and prevented.
- We began investing in the photovoltaics and Green ICT industries in 2017, establishing the Smart Energy Lab and the Smart Architecture Lab. As of 2018, we have the largest capacity, self-built or otherwise, for solar energy among all telecom companies in Taiwan.

## Climate Change Risks and Opportunities

With the current trends associated with global climate change, the mitigation of greenhouse gas emission has become a critical issue in global economic development since the Paris Agreement entering into force and the UN proposal of the Sustainable Development Goals (SDGs).

In 2018, to facilitate the transparent disclosure of climate risks and opportunities, Chunghwa Telecom became the **first** telecom company in Taiwan to sign on as one of the 513 supporters of the Task Force on Climate-related Financial Disclosures (TCFD) initiative. Our 2018 Corporate Social Responsibility Report also discloses climate change-related information in accordance with the suggested frameworks of TCFD.

### Commitment to Science Based Targets and their Development

1. To establish clear medium- and long-term goals, in 2019 we shall commit to the submission of our targets to the Science Based Targets (SBT) for evaluation within two years.
2. It is expected that the substantive benefits of energy-saving and carbon reduction shall be reflected in the revenues from green products. In addition to such benefits, we shall also implement the public disclosure of information related to our carbon management achievements in our annual corporate responsibility reports.

## Risk Factors

### Transition Risks

- ①. **Policy & Regulation:** Emission disclosure responsibility
- ②. **Policy & Regulation:** Increased cost of GHG emissions
- ③. **Technology:** Replacement of existing products and services with low-carbon alternatives
- ④. **Technology:** Lack of investment in innovative low-carbon technologies
- ⑤. **Technology:** Transitional costs of low-carbon technologies
- ⑥. **Technology:** Abrupt changes in energy (electricity) costs
- ⑦. **Reputation:** Appraisals by domestic/foreign investors and sustainability awards
- ⑧. **Reputation:** Changes in consumer preferences
- ⑨. **Reputation:** Stigmatization of industry

### Physical (Natural) Risks

- ①. **Acute:** Increased severity in extreme weather events (heavy rainfall, regional flooding)
- ②. **Chronic:** Changes in regional rainfall patterns
- ③. **Chronic:** Increased average temperature

## Financial Impacts on Chunghwa Telecom

### Transition Risks

- ①. **Policy & Regulation:** Increased operational costs (e.g. increased regulatory or insurance costs)
- ②. **Policy & Regulation:** Increased insurance liability caused by climate-related impacts
- ③. **Technology:** Development of new and alternative technologies and their development expenditure
- ④. **Technology:** Capital invested in technological development
- ⑤. **Market:** Increased insurance liability caused by climate-related impacts
- ⑥. **Market:** Abrupt changes in energy (electricity) costs

### Physical (Natural) Risks

- ①. Decreased revenue caused by lowered manufacturing capacity (transportation difficulties, supply chain disruption)
- ②. Decreased revenue and increased costs caused by negative effects on employees (cost of workplace absence and care due to health, safety, or medical issues)

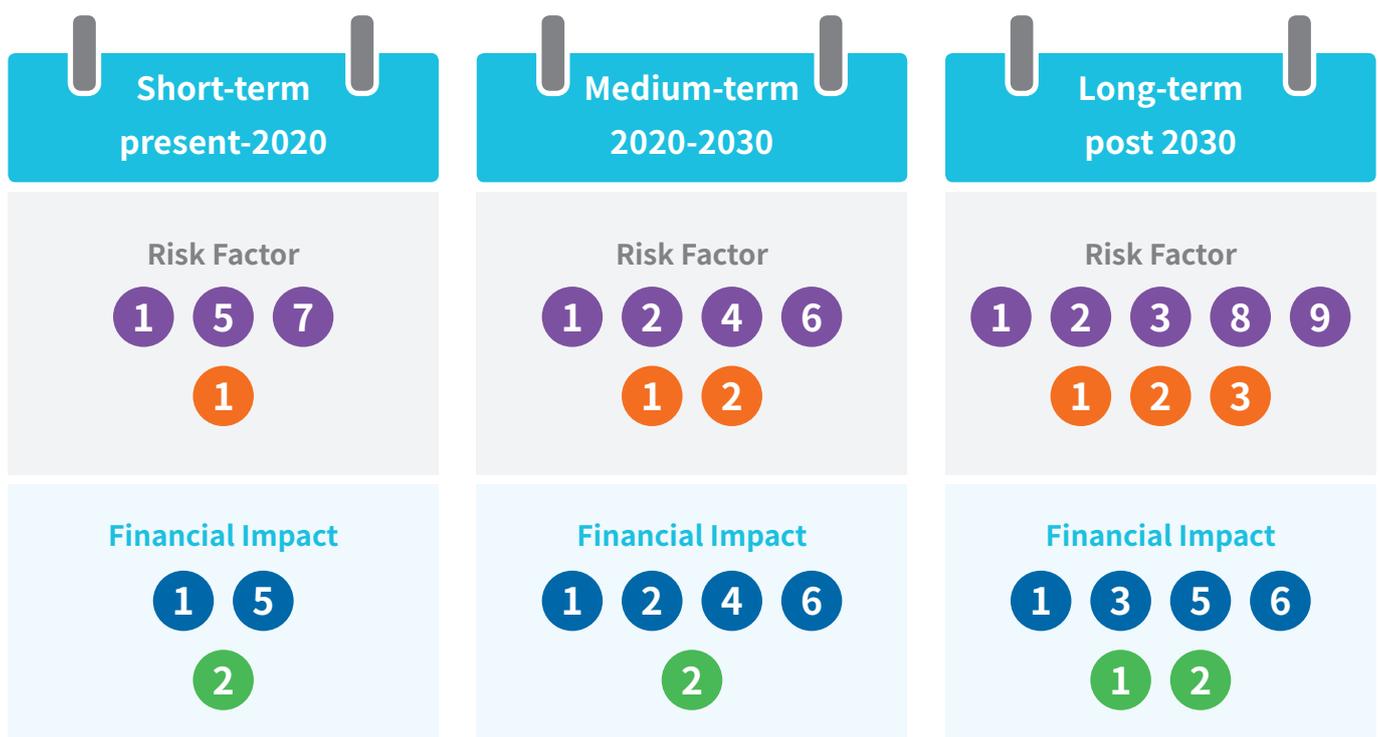
## Chunghwa Telecom Disclosures to TCFD

Framework	Disclosures	Page
Governance	• The board’s oversight of climate-related risks and opportunities	p.19
	• Management’s role in assessing and managing climate-related risks and opportunities	p.19
Strategy	• The climate-related risks and opportunities the company has identified over the short, medium, and long term	p.45
	• The impact of climate-related risks and opportunities on the Company’s businesses, strategy, and financial planning	p.45-46
	• The potential impact of the company’s businesses, strategy, and financial planning in different scenarios	p.45-46
Risk Management	• The company’s processes for identifying and assessing climate-related risks	p.40
	• The company’s processes for managing climate-related risks	p.40
	• Processes for identifying, assessing, and managing climate-related risks and how they are integrated into the company’s overall risk management	p.40
Metrics and Targets	• The metrics used by the company to assess climate-related risks and opportunities	p.19
	• Scope 1, Scope 2, and Scope 3 greenhouse gas emissions	p.49
	• The targets used by the organization to manage climate-related risks and their implementation	p.45-47

## Climate-related Risks, Opportunities, and Financial Impacts on CHT

As the industry leader in telecom, Chunghwa Telecom has upheld the company tagline “Always Ahead” through our contribution to society and the industry by our utilization of the industry’s core value and influence. We believe that the opportunities brought about by climate change shall be reflected in our future products and services. Chunghwa Telecom shall continue to pay close attention to and seek out green technologies and targets suitable for development. We hope to gain momentum developing more innovative products, services, and businesses as well as getting ahead in the low-carbon smart economy.

Chunghwa Telecom has evaluated and analyzed climate-related risks and opportunities by looking at distinct periods of time, including short-term (present-2020), medium-term (2020-2030), and long-term (post 2030).



## Impacts of Climate-related Risks on Chunghwa Telecom

Chunghwa Telecom deeply understands the importance of climate change issues and knows that the inability to comply with environmental regulations may incur regulatory fines, a loss of competitive advantages within the industry, stakeholder concerns, and impact the Company’s image and reputation.

## Potential Climate-related Risks on CHT’s Operations

1. The rising global temperature and intensifying extreme weather due to enhanced greenhouse effect have led to the threat of severe typhoons and flooding; the industrial and residential water usage in certain regions have also been affected by water shortage crises. Therefore, more resources need to be invested in natural disaster prevention, post-disaster facility maintenance, and operational energy access.
2. The government’s implementation of the Greenhouse Gas Reduction and Management Act shall result in the enforcement of greenhouse gas emission control and the liberalization of carbon rights & carbon emission trading. The corresponding increases to our operational costs, due to Chunghwa Telecom’s significant reliance on energy in the maintenance of networks and computer facilities, will undoubtedly impact our finances.

## Opportunities and Strategies

Chunghwa Telecom adopts a two-pronged strategy which is dedicated to the pursuit of a low-carbon transition and taking advantage of future business opportunities both internally and externally.



Chunghwa Telecom has utilized its long-established experience in the development of information & communication systems and environmental monitoring systems for electrical environments to integrate and monitor our clients’ energy-consuming equipment inside their buildings. We’ve also adopted a cloud platform to provide clients with services such as energy-saving performance calculations, equipment operational status monitoring, and real-time notifications. These services help businesses lower carbon reduction threshold and reach their energy-saving and carbon reduction targets.

As for our development of renewable energy, Chunghwa Telecom has invested thousands of manpower to build the Changhua Coastal Solar Power Plant. This plant is the country’s **largest** solar power plant, with a total capacity of 100 MW and an annual output of **130 million** kWh. The power plant reduces annual CO2 emissions by **70,000** metric tons, creating revenues for the Company and thus is a mutually beneficial endeavor benefitting both the environment and our operations.

## Carbon Reduction Practices and Measures

In order to adapt to the potential changes in the environmental and climate change regulations & international accords, we have developed the following strategy:

### Close Observation of Regulatory Changes both Domestically and Abroad

Establishment of the “Five-year Plan of Strategy and Goal for Environmental Sustainability Development” through active engagement with the competent authorities, related organizations, and other stakeholders to expand environmental protection efforts through the pursuit of “green corporation,” “green sustainability,” and “green innovation” goals. We’ve also implemented hazard mitigation measures for computer facilities and climate adaptation plans to strengthen emergency response measures and reduce climate risks.

### Development of Renewable Energy

In 2017, we crossed into the solar photovoltaic field with the establishment of smart energy offices and office buildings, along with the development of Green ICT. By the end of 2018, Chunghwa Telecom had **topped the industry** in the energy capacity of solar photovoltaic facilities, including those installed in our own facilities and those commissioned by other businesses. We have also installed solar panels on cell towers in remote mountainous areas to reduce energy consumption and carbon emission; these panels can also provide power to the cell towers in the case of a power outage to support emergency communications.

### Establishment of a Sustainable, Low-Carbon Supply Chain

In 2017, Chunghwa Telecom joined the CDP Supply Chain Program and became the **first** telecom company in Taiwan to participate in CDP’s international platform. The official implementation of our carbon management measures with our **100** suppliers prompted them to disclose complete greenhouse gas information in a positive and proactive manner and commence planning of carbon management measures and strategies.

We incorporated the ISO 20400 Sustainable Procurement Standard in 2018 to implement our sustainable development beliefs in procurement practices, allowing us to evaluate our suppliers and establish graded management of a green supply chain. These measures helped us achieve our sustainable development goals in environmental protection, corporate management, labor rights, and health & safety.

### Development of Low-Carbon Products and Services

In addition to mitigating the environmental impact caused by our operations, products, and services, we have reduced our carbon footprint via green innovative services and revolutionary technologies such as video conference, digital receipt services, and cloud products. We’ve also utilized the technological advantage in our primary businesses to help build smart cities; an example of such low-carbon solutions is a smart taxi dispatch system that lowers the number of empty cabs on the road and reduces fuel consumption.

### Management of Service Centers’ Carbon Footprints

In 2017, we have a wide range of service centers across Taiwan, linking environmental protection and online services to a green store. Chunghwa Telecom is the **first** company in Taiwan to incorporate green stores in its employee convenience stores. To further plan for the promotion of environmental sustainability, in 2019 we plan to implement the management of the service centers’ carbon footprints. The program shall be assessed for its conformance to ISO 14067 and submitted for review to attain the Environmental Protection Administration Carbon Footprint Label, making Chunghwa Telecom the **first** telecom company in Taiwan to acquire the label. This shall be beneficial for “green communication” between the customers and ourselves.

## Internal Carbon Pricing

Chunghwa Telecom first introduced the concept of carbon pricing management in 2018 to enable stress testing from a risk management perspective. In 2019, we established the stress testing scenario evaluating voluntary carbon reduction targets. Although the current greenhouse gas emission reduction and management methodology has yet to establish the telecom industry's total greenhouse gas emissions, we at Chunghwa Telecom continue to follow our voluntary medium- and long-term carbon reduction targets, which serve as the basis for the calculation of internal carbon pricing and the evaluation of internal energy-saving and carbon reduction projects.

### Chunghwa Telecom Internal Carbon Pricing Analysis

Carbon Management Scenario	Carbon Pricing Adopted (Shadow price)	Scope of GHG Emissions	Number of Operating Locations Involved
Voluntary Carbon Reduction Target	NT \$ 1,500 /t-CO <sub>2</sub> e	Scope 1 + Scope 2	Headquarters, business groups, and branches

Carbon management scenarios are based on voluntary medium- and long-term carbon emission reduction targets. With 2017 as the base year, the carbon emission reduction of the Company's buildings should accumulate to a total of 10% by 2023. In other words, Chunghwa Telecom should reach an accumulated greenhouse gas emission reduction of 83,298.75 t-CO<sub>2</sub>e in its buildings by 2023.

Business Group/Branch	Emission Changes in 2018	Carbon Price Allocated (NT\$ 10,000)	Business Group/Branch	Emissions in 2018	Carbon Price Allocated (NT\$ 10,000)
Headquarters	22.02	3.3	Corporate Business Group	112.02	16.8
Northern Taiwan Business Group	2,196.31	329.4	Mobile Business Group	864.37	129.7
Taipei Branch	2,909.80	436.5	Mobile Business Group—Taipei Branch	5,328.79	799.3
New Taipei Branch	(37,064.59)	-	Mobile Business Group—Taichung Branch	7,958.98	1,193.8
Yilan Branch	510.13	76.5	Mobile Business Group—Kaohsiung Branch	17,274.78	2,591.2
Hualien Branch	66.00	9.9	International Business Group	1,786.21	267.9
Miaoli Branch	171.63	25.7	Chunghwa Telecom Laboratories	64.61	9.7
Taoyuan Branch	1,584.32	237.6	Institute Headquarters	153.84	23.1
Keelung Branch	(373.11)	-	Institute Taichung Branch	53.52	8.0
Hsinchu Branch	285.73	42.9	Institute Kaohsiung Branch	(35.45)	-
Southern Taiwan Business Group	251.11	37.7	Pingtung Branch	208.93	31.3
Taichung Branch	2,925.29	438.8	Kaohsiung Branch	2,210.54	331.6
Taitung Branch	1,008.72	151.3	Yunlin Branch	526.67	79.0
Tainan Branch	1,547.26	232.1	Chiayi Branch	(52.51)	-
Nantou Branch	1,469.04	220.4	Changhua Branch	773.17	116
Company Data Communication Business Group	3,464.63	519.7	<b>Total</b>		<b>8,359.3</b>

The numbers in the parentheses signify a decrease in carbon emissions compared to 2017; therefore, no carbon price is allocated.

## Greenhouse Gas Emissions Management

The total greenhouse gas emissions in 2018 were **834,513.3** t-CO<sub>2</sub>e, consisting of six types of greenhouse gases, namely, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>.

As the operations of Chunghwa Telecom primarily use electrical power, the greenhouse gas is mainly scope 2 emissions (purchased electricity), accounting for a percentage of **96.35%**. Scope 1 emissions, which account for **3.65%**, are mostly generated by workplace emission sources. Closer investigation of the 2018 statistics reveals that although electricity consumption decreased, there was a slight increase in total carbon emissions due to the increase in national carbon emission factor.

To facilitate the decrease of greenhouse gas emissions, Chunghwa Telecom has actively built solar photovoltaic systems in recent years, reducing carbon emissions by **53,738** kg-CO<sub>2</sub>e; we also acquired **97** Taiwan Renewable Energy Certificates (T-REC) in 2018.

Unit: t-CO<sub>2</sub>e

	2016	2017	2018
<b>Direct emissions (Scope 1)</b>	27,345.62	30,873.98	30,469.89
<b>Indirect emissions (Scope 2)</b>	811,826.45	802,113.48	804,043.42
<b>Total emissions (Scope 1 + Scope 2)</b>	839,172.07	832,987.46	834,513.30
<b>Emission intensity (t-CO<sub>2</sub>e/NTD in million)</b>	3.7	3.7	3.9
<b>Percentage of scope in revenue</b>	100%	100%	100%

Greenhouse gas inventory and verification are carried out in accordance with the ISO 14064-1 standard. The source of the global warming potential (GWP) is the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report. All data has been verified by SGS-Taiwan.

## Scope 3 Emissions Inventory and Verification

Chunghwa Telecom conducts regular annual inventories of the organization’s greenhouse gas emissions and conforms with the internationally mainstream scope 3 inventory guidance, investigating the greenhouse gas emissions of upstream and downstream activities to calculate scope 3 carbon emissions. Among these emissions, our inventory data on business travel emissions was awarded the verification certificate by SGS-Taiwan. The modes of transport used by Chunghwa Telecom’s employees for business travel principally consist of the following: (1) land transport (high speed rail), (2) air transport (airplanes). The total greenhouse gas emissions of business travel in 2018 was **278,531.52** kg-CO<sub>2</sub>e.



### Chunghwa Telecom Scope 3 Emissions

Unit: kg-CO<sub>2</sub>e

<b>Product &amp; Service Procurement</b>	<b>1,310,033.13</b>
<b>Waste Treatment</b>	<b>46.97</b>
<b>Employee Commuting</b>	<b>101,000</b>
<b>Business Travel</b>	<b>278,531.52</b>

### Upstream

### Downstream

<b>Product Transportation</b>	<b>1,330,506</b>
<b>Leased Assets</b>	<b>2,560,965</b>

# Cybersecurity Risks

In response to emerging technology issues such as 5G AIoT and Big Data, and hacker attacks continue to be refurbished, CHT is working with the government and the International Information Security Organization to promote cybersecurity awareness and provide customers with a safer and more trustworthy digital environment.

CHT has performed the risk assessment in correspondent with the law compliance after the “Cyber Security Management Act” of the Executive Yuan and EU’s “General Data Protection Regulation” (GDPR) become effective. We report the risk events and corresponding measures, and will continue to follow-up in the future.

## Corresponding Strategies



To ensure the security of our “critical infrastructure” and “critical information infrastructure,” we established the “Chunghwa Telecom Cybersecurity and Privacy Protection Framework.” Based on the guidelines found in NIST’s Cybersecurity Framework (CSF) and domestic and international standards and regulations, the framework helps us evaluate our performance in cybersecurity management.

We have established a department dedicated to cybersecurity. It is responsible for coordinating cybersecurity strategies, formulating and revising regulations, and the centralized monitoring of information infrastructure security. Furthermore, we update our annual action plans and performance indicators based on external environment and internal risk assessments to reduce cybersecurity risks. These performance indicators are applicable in every employee’s performance review.

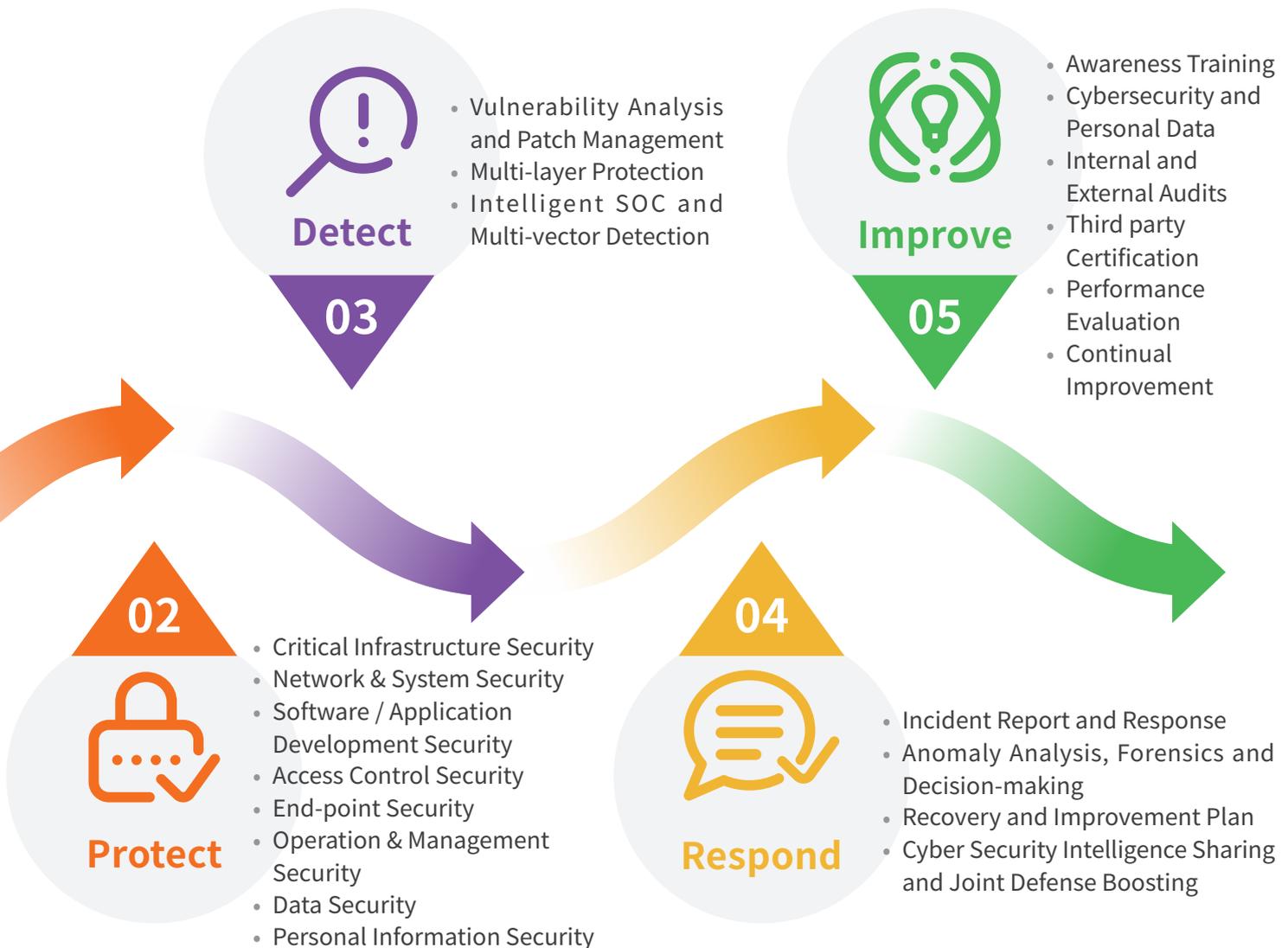
The Risk Management Committee keeps track of the risk monitoring process of cybersecurity and personal information protection. Any material risks identified will be reported to the audit committee of the Board of Directors, or in severe cases, directly to the Board of Directors. In 2018, there were **no incidents of material risks arising from cybersecurity or personal information protection.**



## Opportunities and Actions



CHT reviews its cybersecurity and personal information protection measures on a yearly basis. Through internal and external audits, government inspection, and third-party verification (ISO 27001, ISO 27011, BS 10012, CSA STAR Certification, etc.), our clients can rest assured that their personal information will be securely safeguarded. The key mechanisms of our risk management framework are shown in the table below:



For more information of “Chunghwa Telecom Cybersecurity and Privacy Protection,” please refer to page 126-129 in the 2018 Annual Report.

# The Creation of Sustainable Value

<b>The Digital Economy Motivator</b>	<b>56</b>
<b>The Creative Industry Pilot</b>	<b>60</b>
<b>The Happiness Value Protector</b>	<b>68</b>
<b>The Green Corporation Pioneer</b>	<b>92</b>
<b>The Social Value Guide</b>	<b>108</b>



CHT expects to achieve its goal of commercializing the **5G** network by 2020 through in-house development of an **IoT (Internet of Things) platform** that integrates five major services— **information security, big data, cloud computing, artificial intelligence (AI), and augmented reality (AR)**.



CHT encourages the actualization and transformation of **creativity and innovation** into **practical ideas** that drive industry development. The first “**IoT Smart Platform**” competition was held in 2018 among employees as an initiative to cultivate creative **entrepreneurship**.



CHT is the **only** telecom company in Taiwan to have a **labor union**.



CHT is the **first** mobile network operator to receive **ISO 45001** certification.



With our “**Environmental Sustainability Strategies and Goals Five Year Plan**,” CHT is the **first** telecom company to institute **sustainable supply chain management**:

- Working with the **Sustainable Alliance for Low-carbon Economy (SALE)** to audit and issue **sustainability labels**
- Joining the **Carbon Disclosure Project (CDP)** in an effort to establish a sustainable supply chain



CHT proposed “**5I SDGs**”—iHelping, iSharing, iLearning, iTech, iEco—Taiwan’s **first** sustainable initiative that corresponds with the **UN’s Sustainable Development Goals (SDGs)**.

In addition to the pursuit of operational value and the growth of profit for the benefit of our stakeholders, we also allocate substantial resources for the creation of sustainable value. The approach to this is five-fold: capital investment, strategy formulation, action plan, regular follow-up and performance reviews. We take all the necessary steps to ensure that each investment input has a proper sustainability result.

## Capital

## Impact on Value Creation



## Financial

- To ensure eligibility for licensing (e.g., the 5G bands)
- Provides sufficient financial resources to support value creation
- Effective execution of commercial activities
- Generation and allocation of other forms of capital, such as distribution of shareholder equity, investments, and capital expenditure



## Human

- Telecom knowledge and skills acquired by employees
- Human capital represents one of our major operational costs



## Intellectual

- Licensing, laboratory and R&D expenses, and the acquisition and development of industry technologies
- Investment to maintain the brand



## Production

- Allocate financial capital to develop and maintain infrastructure facilities
- Operation of the Internet Data Center (IDC) and the installation of wireless facilities and development of software and applications



## Social

- Regular contact with the relevant authorities to ensure the conformance and legitimacy of the operations and competition
- Positive feedback from consumers and the general public helps build credibility of the Chunghwa Telecom brand, and minimizes financial outlay



## Natural

- Natural capital such as raw materials, and energy sources are needed to allocate and take advantage of human capital
- The use of energy-saving processes and solutions can effectively reduce the consumption of natural capital



## Resource Allocated to Sustain Value Creation

- Contribution to the government in the form of tax revenue
  - Supports the development of network infrastructure
  - Improves the quality of telecom services
- Introduction to compensation and incentive schemes to attract and retain talent
  - Encourage high value-adding services and innovations
  - Talent training and development programs
- Ongoing investment in R&D, construction, and services. Maintaining service quality and customer satisfaction
  - Investment in the R&D of new technologies and the setting of new protocols
- Ongoing new construction, maintenance, and operation of network equipment
  - Procurement control and the acquisition of more cost/energy efficient network equipment
  - Consolidation of idle space and the recycling and disposal of obsolete equipment
- Engage with stakeholders to better understand their concerns and the legitimacy of Company operations
  - Engage in social activities to exert influence through core activities to minimize the digital divide
- Purchase products that are environmentally friendly to reduce consumption of those that strain natural resources and raise energy efficiency
  - Use carbon management to minimize energy consumption and apply renewable energy solutions to a greater extent.
  - Focus on the development of renewable energy sources, such as proprietary and commissioned Photovoltaic systems





## Strategy

We have enhanced the current core business, and actively develop and research new products. It will bring new revenue through better and more innovative ICT products and services.



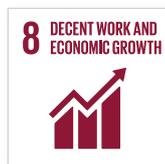
## Management

We have established the “Digital Convergence Business” and an UI team, which is a core business unit that imports ISO research and development quality systems and capable and mature integration models, and also manages system research and development.



## Action

- We have developed an IoT application platform using our own innovative technology
- We held the first “IoT Smart Platform” competition among employees
- Five previously separate pursuits have now been combined, including IoT, AI, Big Data, AR/VR and self-driving cars.



The SDGs CHT contributes to in this section



## Response

More details of innovation business cases on page 57-64



## Target

### Short-term:

The accumulation of R&D power and the launch of innovative products and services

### Mid-long term:

- The client amount of MOD total exceeds **2.5 million**(scheduled **80%**)
- Relative revenue of IoT reaches NT\$ **15 billion**(scheduled **50%**)
- Relative revenue of AI exceeds NT\$ **3 billion**(scheduled **30%**)



## Indicator

**GRI** **2,042** patents accumulated

**CHT** NT\$ **3.7** billion of investment in R&D

**CHT** More than **1,400** R&D employees

## Leading the 5G Smart City

IHS Markit, a world-renowned economic consulting agency, reports forecasts that in 2035 the revenue from 5G technology to companies in Taiwan will be NT\$ **134 billion**, creating **510,000** jobs in the “5G economy.” The government of Taiwan plans to issue 5G network licenses in 2020. From significantly improved internet speed to the realization of IoT, smart cities, and AI, revolutionary changes will emerge with the launch of the 5G network. In order to seize the business opportunities of 5G, CHT joined forces with the Ministry of Economic Affairs, the Industrial Technology Research Institute, the Institute for Information Industry, Zyxel Communications Corp., Sercomm Corp., MediaTek Inc., HTC Corp., Quanta Computer Inc., Accton Technology Corp., Advantech Co., and **30** other organizations to form the “Taiwan 5G Alliance—CHT Pilot Team,” its mission being the commercialization of the 5G network by 2020. Through cross-field cooperation, CHT has assumed a leadership position in the innovation and application of AI and IoT, as well as other emerging technologies. Following the trends in global development, 5G experiment labs will be set up at the Taipei Center of Popular Music, Xinyi Special District, and Qingpu Taoyuan in 2019.

### CHT 5G Pilot Team

Taiwan 5G Alliance—CHT Pilot Team is a joint effort to promote industrial 5G by CHT, the 5G office of the Ministry of Economic Affairs, the Industrial Technology Research Institute, and the Institute for Information Industry. Formed in 2018, the interdepartmental team is able to integrate industrial resources to introduce comprehensive 5G solutions and, in turn, pave the way for industrial upgrades and globalization. Currently, there are six task forces, each in charge of a different aspect of 5G implementation, including terminals, small cells, internet, application services, service platforms, and integration testing. The end goal is to create a streamlined value-chain in the 5G industry.

The Pilot Team seeks the cooperation of influential technology firms, both domestic and overseas, that are willing to invest resources into 5G development in Taiwan. Through the collaboration of the industry, the government, and the training and research in academia, we are able to keep up with international standards and the 5G development timeline. Our ultimate goal is to commercialize Taiwan’s 5G network by 2020, securing Taiwan’s position as an important player in the global 5G economy.

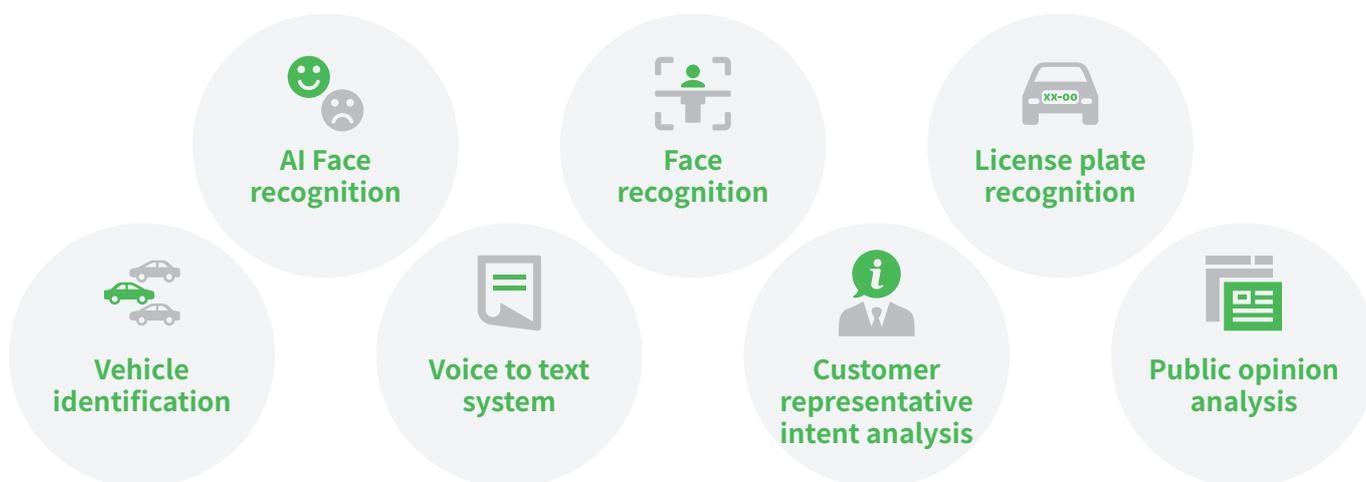


## Innovative ICT Products and Services

We predict that 5G technology will urge the development of the IoT in the near future. Services of emerging new type such as AI, big data, drones, AR, VR, smart family and smart long-term care will bring about global economic growth. CHT is already actively investigating innovative products and applied ICT service development. We expect a substantial increase in the Company's business power from expansion in the innovative field.

CHT leads in the development of an IoT application platform using innovative technology. Five main services have been combined, including Information Security, Big Data, the Cloud, AI and AR. There are now more than **2,830** SMEs using our platform. We have recruited a new talent force of **926** for the development of AI. There are **10** data scientists and **154** professionals engaged in AI research.

In AI development, we would keep on improving in five business areas in 2018, and **7** main AI application services have been developed:



In video streaming services, we launched a tier-based pricing and profit-sharing model on our MOD platform. We give customers the freedom to choose what and when to watch, revolutionizing the way people watch TV. Even in a highly competitive market, we are able to employ effective product and marketing strategies to promote MOD through various channels and increase the public's awareness of the MOD brand and the content available on the platform. In 2018, we secured the broadcast rights of important sporting events including the World Cup, the Asian Games, the International Esports Tournament, and Badminton World Federation's Taipei Open, which allowed us to bring our total subscribers to upwards of **2 million**.

Tapping into the market associated with the aging population, we launched the "iHealth Smart Cloud" service, which includes health promotion videos for the elderly and a function that allows them to upload records of their blood sugar level and blood pressure onto the cloud. We plan to integrate this system with that of local hospitals to provide even more comprehensive healthcare information for our customers. Furthermore, we plan to improve the connectivity of the MOD set-top box so that it will be possible to control smart appliances (such as air-conditioners, dehumidifiers, CCTV cameras, etc.) with a single push of a button. In the future, MOD will be integrated into CHT's IoT network, further increasing its connectivity to include many other internet-based devices. This "Smart Home Gateway" plan has the potential to bring about even more innovative applications and services.

### MoU for 5G Smart City Service Innovation and Application

In 2018, CHT and the Taipei City Government signed the Memorandum of Understanding for "5G Smart City Service Innovation and Application." We plan to cooperate in the following three projects: "integration of smart street lights into the mobile network: conception and testing," "smart city Innovation: on-site demonstration and experimentation," and "5G innovation: on-site demonstration and experimentation." With our IoT network developed in-house and the Intelligent Operations Center (IOC), we will introduce to the city five key 5G related technologies—AI, big data, cloud computing, information security, and AR.

Thanks to the blooming industrial momentum in the "Taiwan 5G Alliance—CHT Pilot Team," we are focusing future research on smart energy saving, smart traffic control, smart security, and smart commerce, further incorporating 5G technology into smart cities and industrial development.

## Semantic Mapping Technology—The iEN Platform

iEN is a voice recognition software capable of semantic mapping and a form of artificial intelligence. Developed in-house by the CHT Labs, the platform can accelerate the AI processing speed in robots, widening the fields of potential service application. It will be the underlying technology for our first smart speaker product line.

To develop a smart home system with the MOD platform at its core, we rolled out multiple new features on the MOD platform in early 2019, including multitasking and voice control. Our customers can now speak to the TV to switch the channel or search for video-on-demand content. When our AI smart speaker is launched in the near future, our dream of a smart home system with even greater voice control functionality will finally be realized.

## Exporting Smart City Technologies to ASEAN Countries

Since its launch, CHT's IoT network has been adopted by more than **500** businesses and startups. The number is projected to reach **2,000** by the end of 2019. The fields of its implementation include smart agriculture, smart manufacturing, and smart traffic control. Apart from domestic industries, we actively seek business opportunities abroad. Currently, we are working with several other Taiwanese businesses to transfer IoT technology to ASEAN countries by means of "whole factory export."

As part of the Industrial Development Bureau's "Smart City Taiwan" campaign in 2018, we collaborated with local governments to bring smart technologies into towns big or small. In total, 16 projects across more than **10** counties and cities have been executed: Hsinchu's 5G street lights, Yilan's smart parking meters, THSRC's Wi-Fi service improvement, narrowband IoT (NB-IoT) for agriculture, AI irrigation monitoring, Kaohsiung's LOHAS smart community care program, the smart urban traffic solutions in southern Taiwan, Hualien's primary health institutions and long-term care program, Yunlin-Chiayi-Tainan cashless college towns, automated convenience stores, and the intelligent railway transportation system.

We will showcase these groundbreaking achievements in the 2019 Smart Cities Expo. With "Smart Cities & Sustainable Future" as the central theme; the exhibition will be divided into six fields, "IoT platform," "traffic management," "smart home," "smart life," "environmental protection," and "cloud computing." We hope that by incorporating the idea of sustainability into our smart systems, we can build smart and green cities that define a brand new generation.

## 5G Technology and Autonomous Vehicles

International Data Corporation (IDC) estimates that **20%** of major cities in the world will have some form of "Internet of Vehicles" (IoV) by 2021 and that the total capital invested in IoV will amount to US\$ **37.9** billion by 2022. It is apparent that IoV will create considerable value for the global economy.

As the leading telecommunications company in Taiwan, CHT actively invests resources into emerging technologies across various fields. With our abundance of experience in AI development and big data analytics as a foundation, we are building the back end for our IoV and autonomous vehicle system with the assistance of several business partners. As 5G networks come into play, the extremely low latency and reliable real-time data transmission can help us improve the management of self-driving vehicle network. The massive bandwidth also allows passengers to enjoy all kinds of onboard entertainment during their rides.

To further the development of domestic 5G network-based industries, CHT is working with the Taiwan 5G Alliance to test the application and integration of 5G on our IoT platform. We have confidence that commercial 5G will be a reality by 2020.



# Innovative Research and Development Results in 2018



The following services received the “**Top 100 Innovative Product Awards**” at the 2018 IT Month Expo:

- 1. Smart IoT Network
- 2. CloudPasco—High security solutions for enterprise networks
- 3. ECoreCloud—SDDC solutions



CHT Lab’s Network Management Research Institute received the “**Outstanding Research Awards**” at the 2018 TANET Conference.



“**Outstanding Electrical Engineering Award**”

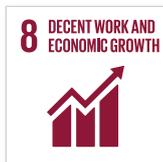
Tu Yuan-Kuang, Director-General

“**Distinguished Engineer Award**”

Huang Hui-Bao, Director-General;  
Zhu Jia-zhen, Manager

“**Excellent Young Engineer Award**”

Shih Fan-Hsun, Researcher;  
Chen Zheng-Hong, Engineer



The SDGs CHT contributes to in this section

### Ministry of Economic Affairs

The Wireless Communications, Broadband Networks, Network Management, Information & Communication Security, Convergence Services, Business Solutions, IoT, Hicloud, and the Big Data laboratories received 5 gold, 4 silver and 3 bronze awards at the 2018 Taiwan Innotech Expo held by the Ministry of Economic Affairs

### Asia-Pacific Intelligent Green Building Alliance (APIGBA)

Smart Networking Research Institute’s research project “Smart Home and Intelligent Building” was awarded the top prize at the **2018 APIGBA Awards**.

### Intelligent Transportation Society of TAIWAN

Smart Networking Research Institute’s research project “Innovating Big Data Analytics in Telecom—Using CVP Transportation Analysis as Example” received the “**2018 Outstanding Research Awards in Transportation Innovation.**”

### IEEE SMCs Japan Council

Researcher Jin Ju-Yu from CHT’s corporate client department was selected as an honoree of “**Outstanding Research in Technology Application**” at the 2018 SCIS-ISIS Conference.



The core business market of the telecom industry (fixed network, mobile service and voice service) has gradually reached saturation. This will have an impact on revenue in the mid-long term. There might be a reduction of revenue from voice services, overly high costs for basic telecom construction, or influence of the OTT suppliers. We predict that the overall output value of the telecom industry will continue to decline until 2020. Our innovative strategies to cope with this situation include enhancing the current core business, active research into new product development, and generate more revenue from new and innovative ICT products and services.

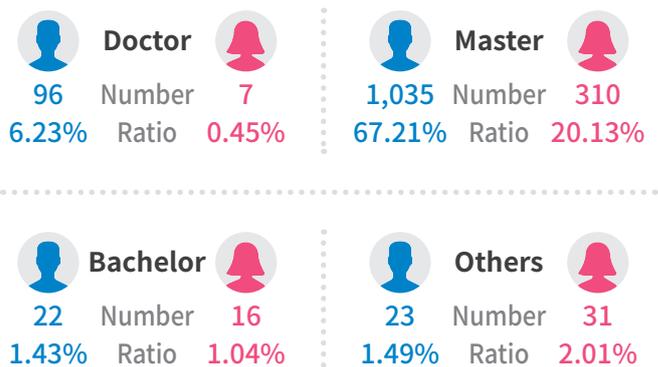
## || Innovative R&D Center-Chunghwa Telecom Laboratories

Chunghwa Telecom Laboratories (CHT-TL) is a designated R&D institute that has been established for research into new innovative services, core technology, and visionary applications. We strive to explore convenient and useful services from the consumers’ perspective. Solutions are formulated through intricate coordination; the purpose is to find ways to “simplify tasks for consumers, and let CHT deal with the complexity.”

### Overview of Chunghwa Telecom Laboratories in 2018

- There are more than **1,540** employees (nearly **6.96%** of total) with **94%** being R&D personnel.
- The funding for R&D funds totaled NT\$ **3.7** billion, which was **1.7%** of the consolidated operating revenue.
- The laboratories secured **203** new product/technical patents (**189** domestic and **14** overseas) to a total of **2,042** (**1,862** domestic and **180** overseas). **1,186** of the patents are currently in force (**1,095** domestic and **91** overseas).

### The Telecom Laboratories Human Resources Structure



## Social Innovation

### Using Technology to Support Local Farmers

After more than a year of joint efforts between CHT, the government, and research institutions, the “4G Smart City—Local Produce O2O Distribution Platform” was finally launched. Through physical distribution channels, “food trucks flash mob” events, and the “Eat Healthy” e-commerce mobile app, the platform has created a complete O2O distribution system for local produce.

At the “Local Farmers Stand Together” press conference, CHT invited local governmental information and agriculture departments of Taipei, Taichung, Kaohsiung, and Keelung to “stand together” with local farmers. By combining the government’s administrative resources, local farmers’ quality products, and CHT’s smart technologies, we hope to safeguard national food safety and people’s health.

### The Natural Gas Cloud

The Bureau of Energy of the Ministry of Economic Affairs has drafted a bill that requires “the use of microcomputer-embedded natural gas meters that are equipped with telecom capabilities and occlusion valves that activate in the event of earthquakes or low pressure” to increase safety standards. The bill is expected to come into force in 2021. CHT’s Natural Gas Cloud system comes with cutting-edge NB-IoT technology and with our IoT network; we are kicking off the “Gas IoT Era” with services like remote gas meter reading, remote activation and deactivation, and real-time usage alerts.

To comply with the government’s policy of replacing traditional gas meters with microcomputer-embedded ones, we have signed letters of intent with multiple natural gas companies since 2018. With our NB-IoT solutions, the Natural Gas Cloud system can drastically lower operating and maintenance overheads. In the future, we plan to incorporate more functions into the system as value-added services, such as carbon monoxide detection and leakage alerts.

### Smart Insurance

CHT helped Taiwan Fire & Marine Insurance Co., Ltd. introduce blockchain technology and smart contract services into the management process of travel insurance policies. For example, our blockchain network regularly checks flight arrival and departure information, so when a particular flight is delayed, insured customers are immediately notified through text messages. Our smart contract system then processes insurance claims automatically and, if verified, payments are made directly in digital currencies. This technology was awarded the **gold medal** at the 2018 Taiwan InnoTech Expo by the Ministry of Economic Affairs. In the future, we plan to apply the technology to weather insurance, natural disaster insurance, car insurance, health insurance, and residential fire insurance, further exploring the possibilities and opportunities of insurance technology while simultaneously benefiting CHT, the insurance industry, and customers.

### CHT Personal Health Record (CHT PHR)

Hypertension, hyperglycemia, and hyperlipidemia are becoming more and more prevalent in Taiwan due to high stress, lack of exercise, and irregular lifestyles.

By combining CHT’s proficiency in networking and information security with medical equipment manufacturers’ products and medical institutions’ services, we are revolutionizing the way technology is used in the health care industry. In 2018, We introduced “CHT PHR,” an intelligent healthcare management system, to the following hospitals: Taipei Tri-Service General Hospital, Taiwan Landseed Hospital, Tung’s Taichung MetroHarbor Hospital, Zuoying Branch of Kaohsiung Armed Forces General Hospital, and Hualien Tzu-Chi General Hospital.

“CHT PHR” allows patients to self-monitor their blood pressure, sugar, and cholesterol levels in the comfort of their own homes. Users can choose to share this information with a healthcare professional to receive timely

## Environmental Innovation

### iEN Water Resource Management

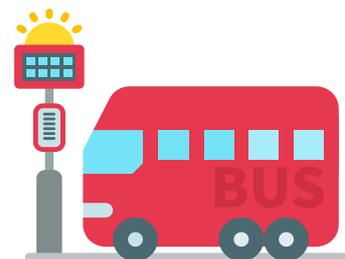
CHT launched the iEN intelligent environmental service in 2008. We provide corporate clients with energy management technology that helps reduce operational cost. In 2017, the iEN service embarked on water resource management to provide a full-scale water resource solution through information security and IoT technology.

1. Smart operation and management technology at the Mudan Reservoir: The reservoir monitoring system continuously collects information about the climate, water quality, the valve settings, embankment and slope. The system also provides suggestions about water discharge based on rainfall over the catchment area and the reservoir water level. Stability of the water supply has increased and this allows much better management of resources. The system can be effectively used for three applications, the use of stored water, flood control and reservoir safety.
2. Improved irrigation and water conservation management technology: An intelligent decision-making system on the cloud, along with environmental monitoring equipment, calculates and delivers the precise amount of water needed for the irrigation of crops to effectively improve the efficiency of irrigation water conservation.
3. Treatment of household and industrial wastewater: This service monitors household and industrial water supply, billing, leaks, pipeline bursts, and minimum night flow (MNF). It also monitors the treatment process and the discharge flows in water plants in order to provide real-time parameters such as pH value, temperature, electrical conductivity, and chemical oxygen demand (COD) to prevent and mitigate water plant failures.

### Solar-Powered Smart Bus System

Due to difficulties connecting the smart bus information system to the power grid, New Taipei City's Traffic Department commissioned CHT to install e-ink information displays at bus stops. These displays run on solar power and can be installed fairly quickly as they do not have to worry about being connected to the power grid. They can continue to function for **14** days even in gloomy weather. The system is currently in a trial stage at the Shiding Old Street and around Shimen Wulong Temple and is expected to be expanded to other rural areas.

A Central computer communicates with these e-ink display terminals to remotely check their battery conditions and provide accurate bus arrival information through an intranet system. As its name suggests, the displays are built with e-ink technology; they are UV resistant, anti-glare, anti-fouling, and highly energy efficient—an e-ink display (63W) only requires one tenth of the power consumed by a regular smart display (600+W).



medical advice. They can also share it with their friends and family so that they can be cared for and reminded to take medication—even if they are far away. We offer a variety of ways for you to check on your loved ones. You can do so on our mobile app, our website, or even through the MOD platform.

In terms of future plans, we want to replicate this success in other medical institutions. We are also looking to collaborate with fitness training centers and fitness equipment manufacturers to help improve the effectiveness of fitness training by analyzing gym-goers' exercise habits, promoting a healthier and more energetic lifestyle.

Read more about CHT PHR on our website:

<https://www.cht.com.tw/home/consumer/broadband/broadband-service/660>

# Financial Innovation

## Bank 4.0—Online Banks

CHT joined Mega International Commercial Bank, Shin Kong Financial Holdings, and PX Mart Co., Ltd. to form “NEXT BANK Preparatory Office.” Through the synergy of the information infrastructure of an ICT company, the financial expertise of a bank, and the large distribution network of a retailer, NEXT BANK combines the advantages of information flow, capital, and logistical control to build a revolutionary online financial platform. Only by incorporating financial services into the digital ecology can we truly provide innovative services that satisfy customers’ needs and achieve the goal of financial inclusion.

In addition to the four primary owners, we expect other interested companies to join the NEXT BANK team in the near future. Each strategic partner will contribute to the integration of FinTech innovation into day-to-day activities and the creation of a groundbreaking financial service platform. NEXT BANK’s mission is to satisfy the banking needs of the “next” generation, instilling newfound energy in financial innovation and driving growth in Taiwan’s digital economy.

## FinTech

CHT showcased three types of identity authentication technology at the 2018 FinTech Taipei Exhibition: “Fast Identity Online (FIDO) Biometrics Authentication,” “CHT Public ID Common Central Authentication Service,” and “Online Signature Verification System (PDF Sign).” Combining these three authentication methods, we can provide a robust solution for FinTech development.

“FIDO Biometrics Authentication” offers quick and secure authentication through fingerprint matching or facial recognition. It increases the speed and security of transaction confirmation (compared with traditional password authentication), simplifying the verification process and significantly improving user experience. “CHT Public ID,” on the other hand, allows user to access various types of services with a single sign-in. It can be used to verify natural persons, legal entities, government agencies, and businesses.

“PDF Sign” provides a trustworthy document signing service to improve the security of electronic signing. With timestamp verification, it is suited for signing contracts, agreements, insurance policies, certificates, notarized documents etc., creating a paperless authentication process.

# From Creation and Innovation to Startups

CHT has always encouraged creativity and innovation. Employees are encouraged to break new ground and turn their R&D creativity into real value, to drive industrial output and bring revenue to the Company. In 2018, we adopted a strategy of internal and external cooperation to encourage and promote new startups in the ICT industry in Taiwan.



## Supporting Start-Ups—CHT “Firefly Project”

CHT and the Small and Medium Enterprise Credit Guarantee Fund of Taiwan cooperated in the launch of the “Firefly Project Credit Guarantee” in March 2018. In response to the government’s “Action Plan of Investment Environment Optimization for Start-up Businesses” to drive industry development, CHT announced during the press conference for the signing ceremony its plans to expand the scope of the “Firefly Project Credit Guarantee” to help finance small-to-medium enterprises and start-ups. This initiative also encouraged project organizations in the Bank of Taiwan, the Hua Nan Commercial Bank, the First Commercial Bank, the Taiwan Cooperative Bank, and the Taiwan Business Bank to follow suit in supporting start-ups and small-to-medium enterprises.

Firefly project is established by the companies’ donations. CHT donated NT\$ 50 million, and the small and medium Enterprise Credit Guarantee Fund of Taiwan provides the equivalent amount of funds, providing 20 times the guaranteed financing amount, and also combine with the government and private resources to jointly promote the sound development of the industry chain.

## The MOD Micro Movie Contest

CHT has long cultivated the film and television industry. To support original digital content and foster excellent talent in the Taiwanese movie industry, we organized the “MOD Micro Movie and Gold Film Creation Contest” with awards to a total of NT\$ 4.3 million in 2018. We received 316 entries, 39 of which used 4K resolution to film. To give these extraordinary short movies proper chance, we stream them on the MOD platform with HD high resolution. We gave them the same amount of exposure as any other movie in theaters. We organized the first “Film Festival of Awarded Pieces in the MOD Micro Movie and Gold Film Creation Contest”. The participating teams were able to exchange ideas and became aware of the universal increase in competitiveness in the audio-visual industry.



## Taiwan Legend Championship Series, Powered by CHT

CHT has transferred its experience in broadcasting sporting events to the organization of e-sports competitions. The Taiwan Legend Championship Series is powered by CHT's ultra-high-speed internet, allowing players to demonstrate their full abilities without having to worry about internet connections. Events are broadcast live on our MOD platform and Hami Video app in 4K/HD. Gamers across Taiwan can experience the heightened atmosphere as if they themselves were taking part.

As the leading ICT firm in Taiwan, we are proud to have sponsored the Taiwan Legend Championship Series for the past two years. In the future, we hope to build a world-class e-sports venue utilizing our advantageous "HiNet Light-Era" infrastructure.



## PUBG—2018 CHT Master Series

In recent years, the gaming industry has exploded in popularity. As the leading telecom company in Taiwan, CHT has joined forces with software developers and hardware manufacturers to seize every business opportunity. In 2018, we organized the first ever collegiate gaming competition in Taiwan, The PUBG CHT Master Series, with a combined cash prize of over **NT\$ 200,000**.

Aside from the competition itself, we hope to familiarize students with the gaming industry through a series of on-campus events, sharing the latest developments in gaming and inviting popular streamers to share their experiences and thoughts on the industry. Indeed, we are introducing students who are interested in pursuing gaming as a profession to the actual state and expectations in the gaming industry.

## IoT Smart Platform Competition

IoT is at the forefront of emerging technology development. We are leading the way for Taiwan to enter the international IoT market by promoting IoT technology education and encouraging students to demonstrate their innovation through competitions. The “IoT Smart Platform” competition comprises two divisions, one for students and the other for industry professionals. The central theme for the competition is “integrating information technology and smart terminal devices into the IoT application and solutions.”

The first “IoT Smart Platform” competition was held in 2018, with a top prize of NT\$ **1 million** to encourage IoT innovation. With “digital life” as the underlying concept, participants compete against one another to try and come up with the most innovative and practical IoT solutions that are also commercially viable. The winner of the professional division was Union U Inc., and the winner of the student division was National Formosa University (NFU).

The “WFduino IoT Educational App” developed by Union U Inc. transforms complicated programming language into simple block-based “Scratch” visual representations. Through creating and stacking “Scratch blocks,” students can develop their own software without any prior knowledge in programming. WFduino, dubbed the “IoT Education Accelerator” by the Company, allows students to channel their creativity into app design without having to worry about the incessant details of programming languages.

NFU’s “Samrtify Your Home” project proposed a different approach to intelligent homes. Instead of replacing existing appliances with smart devices, the team installed modular electronic blocks onto traditional household appliances. These blocks can detect a variety of input signals, effectively “smartifying” traditional appliances with minimum expense required. NFU’s design provides a quick and cost-effective route to IoT implementation.

Later that year, we organized an employee version of the “IoT Smart Platform” competition. Out of **248** submissions, **10** projects received awards (three top prizes and seven honorable mentions). Winning proposals were sent to the appropriate CHT’s subsidiaries as a reference for future product development. The competition both offered CHT a chance to discover talent that would have otherwise remained hidden in the corporate structure, while allowing employees to demonstrate their creativity. We hope that the positive energy of innovation created by healthy competition can further drive IoT development in the Company.





## Strategy

- Chunghwa Telecom is committed to providing employees with “assurance,” including their work rights and freedom of association. The Company takes the initiative to care for the needs of employees, and implements communication channels to facilitate the exchange of opinions between the employer and employees
- Provide consumers with virtually and physically diverse, multilateral and high-quality service channels



## Management

- Ensures all employees sign a formal “Employment Agreement,” duly observe the Labor Standards Act and other applicable laws, and calls for labor-management meetings at regular intervals
- Accreditation of the SGS Qualicert service certification
- Advocation of refined service supervision
- Comprehensive and robust personnel management



## Action

- The Company has specialized training facilities - Telecom Training Institute and Occupational Safety and Health Department in place
- Transparent and diverse means of communications and grievances
- Invested resources in digital transformation and established the **first** telecom combinative store in Taiwan
- Established the system of self-inspection, audit, and supervision for service quality
- Launch the personal information management and auditor certification system



The Happiness Value Protector



The SDGs CHT contributes to in this section



## Response

- The **only** Taiwanese carrier with an established union
- The **first** telecom carrier in Taiwan to receive ISO 45001 certificate



## Target

### Short-Term:

- Fosters talents and allows all employees to share the results of the operations
- Make personalized high-quality products and services available to all our customers

### Mid-Term:

- All areas receive ISO 45001 certification by 2020
- Yangmei dormitory be completed by 2021



## Indicator

- GRI** Basic salary offered by Chunghwa Telecom is **1.4** times the minimum wage in Taiwan.
- GRI** Per Capita Training Hours: **41** hours
- GRI** “Collective Agreement Act” employee coverage of **99.86%**
- GRI** No violation of GRI laws concerning personal information, health, safety or product labeling
- GRI** 4G signal coverage at **100%** across all townships

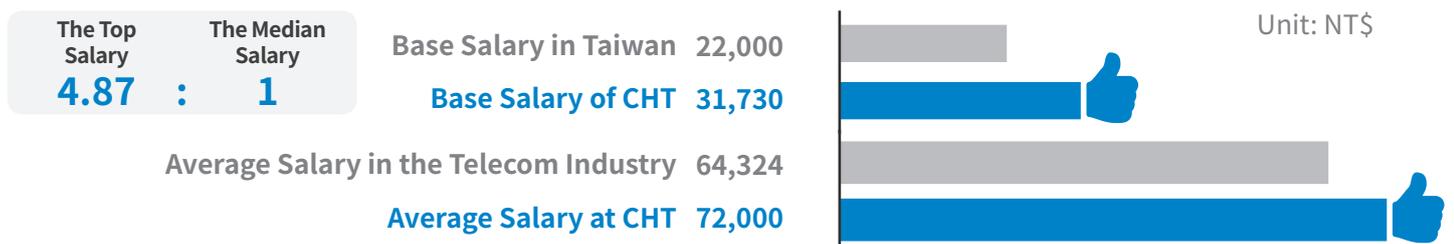
# Ensuring Employees' Happiness

## Protecting the Rights of Workers

Chunghwa Telecom treats employees as their most important business partners. To ensure the best protection for the work rights of the employees, Chunghwa Telecom signs an “Employment Contract” with each employee and undertakes to notify them of any changes in terms of employment in compliance with the Labor Standards Act. Furthermore, CHT uses several different channels, including seminars and labor-management meetings, to maintain harmony and a mutually beneficial working relationship with employees.

## A Competitive Compensation System

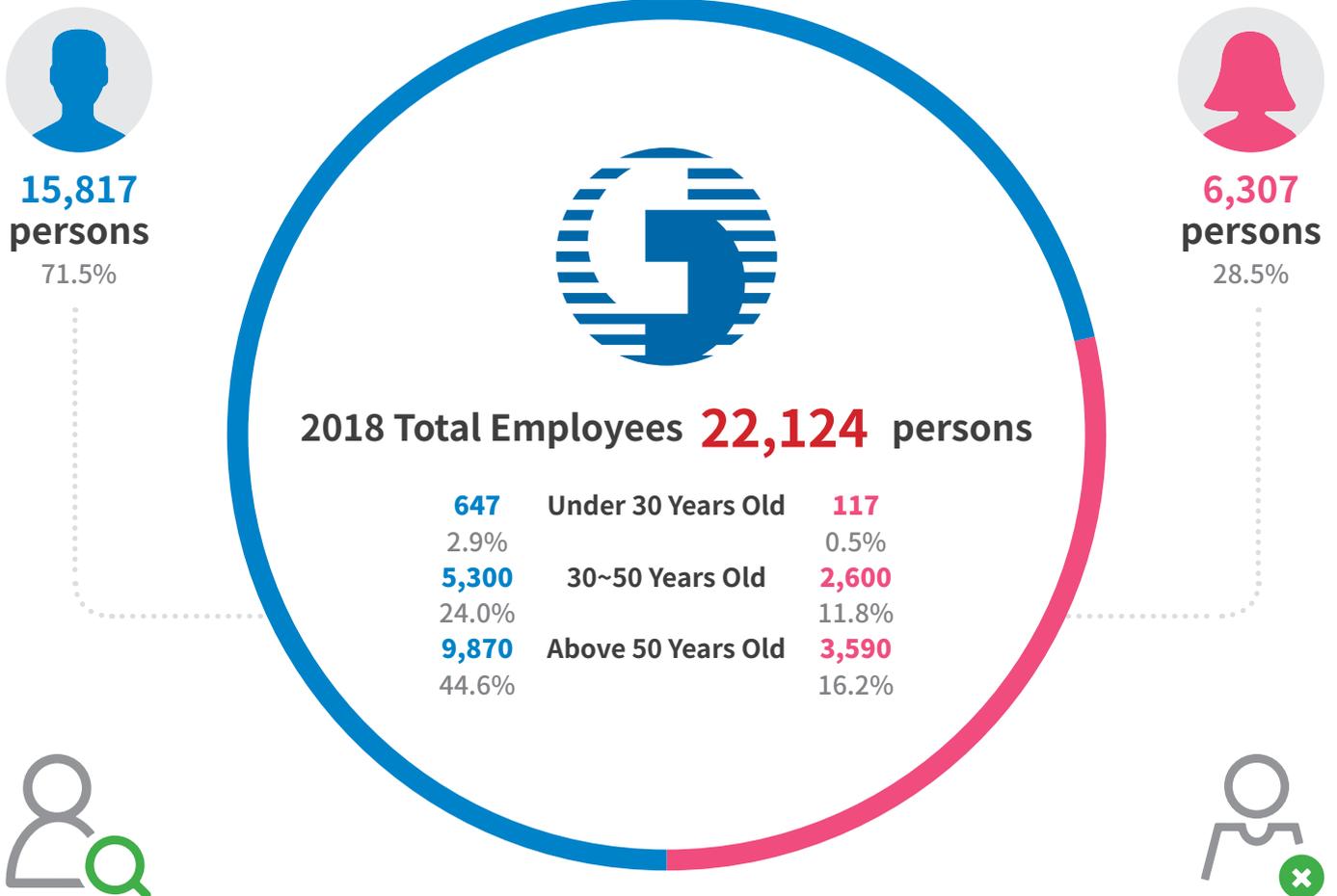
We have a “Compensation Committee” in place to ensure that compensation for the best talent is competitive. In addition, the Company has a transparent system for sharing business performance with its employees. Compensation for executive management has been standardized and details are disclosed publicly in the annual reports. The Company offers equal compensation for all entry-level employees of the same grade. Those who possess relevant skills and work experience may have compensation evaluated based on educational background, career experience, expertise, and professional qualifications. Under no circumstances will compensation ever be determined by gender or racial differences.



1. Average Salary in the Telecom Industry: According to the “Monthly Wage and Productivity Report, December 2018” published by the Directorate General of Budget, Accounting, and Statistics.
2. Base Salary of CHT: The average salary level in December 2018.

## Human Resources Structure at CHT

CHT has more than **22** thousand employees with an average age of more than 51-year-old. There will be more than 5 thousand employees retiring over the next 5 years, and 50% of the employees will be eligible for retirement over the next 10 years. Current senior management is included in this retirement tide. To cope with this problem CHT is actively cultivating new talents to ensure that knowledge is passed down to foster the talents of a new generation.



### 2018 New Recruitments

**560 persons**  
2.51 % of total employees

**Resignation Rate of New Recruits 8 persons**  
1.43 % of all new employees

<b>433</b> persons 77.32 %	<b>127</b> persons 22.68 %
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<b>Under 30 Years Old</b>	<b>211</b> persons	37.86 %
<b>30-50 Years Old</b>	<b>346</b> persons	61.79 %
<b>Over 50 Years Old</b>	<b>3</b> persons	0.54 %

### 2018 Employee Turnover

**885 persons**  
3.97% of all employees

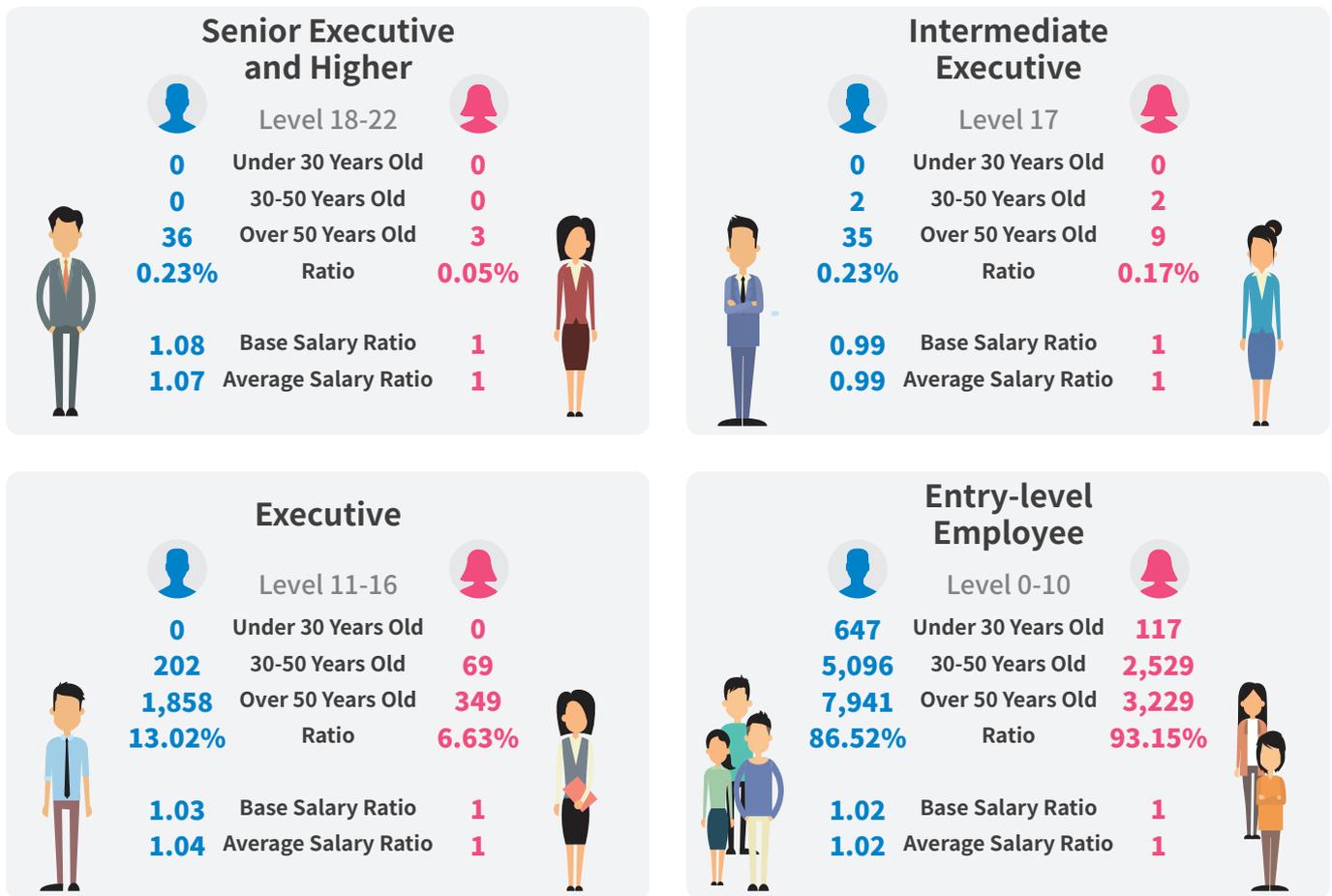
<b>21</b> 2.37%	<b>Under 30 Years Old</b>	<b>5</b> 0.56%
<b>88</b> 9.94%	<b>30-50 Years Old</b>	<b>23</b> 2.60%
<b>583</b> 65.88%	<b>Over 50 Years Old</b>	<b>165</b> 18.64%

New recruits rate = Number of new employees / [(Number of people at the beginning + number of people at the end)/2]

New recruits rate = Number of turnover employees / [(Number of people at the beginning + number of people at the end)/2]

Chunghwa Telecom understands that the industry competition we are facing now is not only the telecommunications industry, but the changing information and communication industry chain. In the future, the recruitment direction of talents will be based on the large-scale public recruitment method which focuses on various professional fields. We will adopt an external network approach to transform Chunghwa Telecom’s talents into an important kinetic energy for the continuous improvement of the next stage.

**Number of persons in each grade and sex salary ratio**



1. All employees are Taiwanese and mainly full-time. Due to the needs of industrial management, we hire 1 contract-based employee.
2. For all grades, basic salary is defined as the fixed salary (monthly).
3. For all grades, average salary includes fixed salaries and variable portions (including the monthly salary, year-end bonus, performance bonus, etc.)
4. Levels of all grades: Basic 0-10; Executive 11-16; Intermediate Executive 17; Senior Executive 18-22.



## Gender Equality and Diversity

Chunghwa Telecom places great value on human rights and gender equality. In 2018, female staff accounted for **28.5%** of the total, and **26.32%** of the managers were women. To conform to the essence of the Gender Equality in the Employment Act, the Company has outlined its sexual harassment prevention policy and established a “Complaint Investigation Committee” that specializes in the handling of employee complaints about work-related discrimination and improper behavior. The investigation committee has **5** members, **3** of whom are female. Our effective control has resulted in **no incident of discrimination being reported** in 2018.

CHT has done more than comply with the quota required by Article 38 of the Persons with Disabilities Rights Protection Act and have hired more than the required number. In 2018, the number of persons with disabilities hired was **3.84** times more than the statutory quota. (quota: 208; actual hire: **799**). Where a department or institution employs a seriously disabled person in accordance with the act, the disabled person shall be calculated as two. We had **46** aboriginal employees on board in 2018. We fully respect their cultures and **no violation of work or human rights was reported** during the year.

## The Only Telecom Carrier in Taiwan with a Union

Chunghwa Telecom is the **only** telecom carrier in Taiwan with a union established. We have signed a collective bargaining agreement with them which covers an extensive range of issues from redundancy, reward, discipline, promotion, to health and safety. This initiative not only complies with local laws and international human rights conventions, but is also a show of our commitment to the protection of employee interests. In addition to the union established by Chunghwa Telecom, employees have also assembled **11** other unions under the organization. In 2018, **99.86%** of employees were union members. A director’s seat has also been reserved for a workers’ representative, through whom workers can more freely express opinions.

Chunghwa Telecom complies with Article 16 of the group agreement about transfers. If there is a need to transfer a union member due to changes in the organization such as establishment, alteration, merger, and/or closure of a department, the Company will do so only if necessary and will respect the wishes of the member. In addition, all transfers must comply with the “Five Principles” of the Labor Standards Act.



## The “Plan 499” Incident

Due to a spike in demand during the “NT\$ 499 Unlimited Data Plan” campaign in 2018, employees were asked to work overtime. The Ministry of Labor determined CHT to be liable for 18 counts of labor law violations.

Immediately after the incident occurred, CHT complied with the Labor Standards Act and notified the labor union within 24 hours. Employees who worked overtime were compensated with double pay and additional paid leave. After the Ministry of Labor denied our appeal, CHT filed an administrative lawsuit in which the judge nullified the Ministry of Labor’s original decision and issued new fines amounting to NT\$ 5.44 million.



## Open Communication and Grievance Channels

We have open communication channels in place to ensure that employees' needs or suggestions are heard. Any violation or misconduct in the workplace can be reported to the relevant department using the channels provided. There were 52 complaints in 2018. Of these, 50 were disciplinary investigations and included such behavior as disrespect of the CHT system, principles, administrative management, violation of the employee code of conduct or other misconduct, and two were leak investigations. There were no human rights related cases in 2018.

We hold regular labor-management meetings to maintain contact between employees and the employer. There are 9 representatives from each side, employer and employees. The chair is held by each side in turn. The Chairman and President of Chunghwa Telecom engage regularly with the Chairman of the Union, Directors, and Supervisors in meetings, in person and by telephone. The Chairman of the Chunghwa Telecom Workers Union is entitled to participate in disciplinary review meetings, performance appraisals, and business report meetings to ensure that workers are kept up to date on Company news. In 2018, the Company held 6 nationwide labor-management meetings and 2 extraordinary meeting during which employees and the employer were able to reach consensus on many issues. Meetings for the discussion of particular matters can be convened, or if any change to work conditions is necessary. Eight such meetings were held in 2018.

### The Employee Grievance Channels

- CHT intranet portal: <http://eip.cht.com.tw>
- Accountable department: Human Resource Division, Head Office (Room 503, No. 21-3, Section 1, Xinyi Road, Taipei City 100)
- Hotline: 0800-080998
- Fax: (02) 2357-0007
- Email: [chthr@cht.com.tw](mailto:chthr@cht.com.tw)



### Improvement Measures

1. To ensure compliance with the law and to protect the rights of CHT and its employees, the Company requires all front-line business divisions to perform self-inspections of compliance with labor laws. In the event of a government labor inspection, front-line staff must immediately notify to the human resources department at the CHT headquarter.
2. Due to the increased frequency of government labor inspections, CHT has hired labor law attorneys to give a series of lectures on labor environment self-inspection to strengthen employees' practical knowledge in labor management. In total, 2,559 employees participated in the three sessions held in 2018, totaling 14 hours of training.

## Focusing on Employee Training and Development

Our fundamental business focus is “core competitiveness, professionalism, efficiency, and service” and we seek to develop innovative talent through a combination of internal and external training.

We have a comprehensive training system to assist employee development in all dimensions. The system starts with the incorporation of “needs analysis” and “in-depth planning” and is followed by performance assessment and review after the program ends. This systematic approach enhances professional skill and work efficiency, and helps the Company improve its coordination of human resources.

### Human Resource Development Strategies

The Chunghwa Telecom Telecom Training Institute has devised human resource development strategies based on business focus and talent requirements between 2017 and 2019.

- ✓ Alignment of training and business development
- ✓ Alignment of training targets and courses
- ✓ Mobilization of digital learning
- ✓ Government-industry-university-institute platform
- ✓ Innovation and Benefits

#### Digital Classroom

Chunghwa Telecom has introduced an online learning social network (the Digital Classroom) with an e-Learning approach quite unlike that of conventional classroom teaching. In this new learning social network where users may share and transfer knowledge at a lower cost, and with a far better yield of good results. The broadband installation college, for example, is a platform where information such as technical documents, cases, video tutorials, and technical discussions can be exchanged and learned.

#### Online Broadcast

Online broadcasts can be used to teach topics related to specific work. They are delivered over the internal UC platform, and offer employees a fast and convenient way to gain knowledge and observe new trends. Online broadcasts transmit the experiences of experts to all employees without limit and boost business growth. The topics in 2018 included core business, ICT extended business, business in the new field and new knowledge of management and health care. There were **216** classes with **20,716** participants.

#### Results

##### 1. Information security certification

In 2018, **40** employees received Paloalto ACE certification, **46** received Fortinet NSE, **46** received ISO 27001:2013 Lead Auditor certification, **46** received BS 10012 Personal Information Management System Lead Auditor.

##### 2. Improved Sales Performance

- AM enterprise customer training and certification resulted in a revenue increase of **2%**.

##### 3. New business potentials

- The Company organized **23** courses for AI professional skills training to cultivate AI talent; there were **1,545** enrollments.
- The Company organized **30** courses for the training of facilitators, promoters, planners, designers, and maintenance workers for photovoltaic technology; there were **833** enrollments.



## Dedicated Training Units

Chunghwa Telecom has founded the “Telecom Training Institute” that specializes in training technical as well as managerial talent in the telecom field to gain more core competitive advantages. A “Talent Development Team” has also been established, with the President as convener, to conduct regular reviews of the planning and outcome of training. This is important to ensure that the training outcome is closely aligned with the operational policy to achieve a “seamless combination of training and practice.”

## Diverse Learning Channels

To meet the needs of the organization, and the personal interest and even the personality traits of employees, the Telecom Training Institute provides a diversity of learning channels. These help employees develop new in-depth professional ability as well as a renewal of their management skills to bring about growth and proper career development. Employees can attend training at the Telecommunication Training Institute during regular hours, in the evening or on holidays. The institute can also dispatch tutors to relevant business units for organized training sessions. The institute offers **8** learning channels: class teaching, distance education, digital learning, direct-broadcast courses, the Digital College, online broadcast, external programs, and the digital library.

## || New Employee Orientation

Orientation provides new recruits with a general understanding of company vision, values and culture that helps them adapt to the new work environment and culture. “New Recruit Counseling Guidelines for Chunghwa Telecom and Subordinate Institutions” were introduced in 2014 as well as a counselor system and digital learning tools to reduce the steepness of the new employees’ learning curve.

### Recruitment and Development of the New-Generation Talents

Chunghwa Telecom will encounter a wave of senior management retirements. Therefore, in response to business expansion and the rapid development of emerging technologies, CHT is actively recruiting new employees—we plan to hire **1,600** new recruits in 2019. The following measures have been developed as a response to reduce disruption in the transfer of knowledge:

- Recruiting professional talent in ICT, AIoT, 5G application, technology innovation, and other new business opportunities.
- The nurturing of the next-generation talent: The Company introduces new talent-training programs on a yearly basis. It provides employees with professional and diverse training options, and certifies the development of skill.
- Emerging businesses: new ICT technologies are being infused with knowledge from other fields. The Company will focus on training professionals who can adapt and apply their knowledge across several different fields of expertise such as cloud computing, big data, and product packaging to actual practices.

## || Fair Evaluation

Chunghwa Telecom now applies “Employees Performance Evaluation Guidelines” which are used in the appraisal of employee performance to develop the corporate culture where employees, customers, shareholders, and the Company will all be winners. Supervision will be provided for underperforming employees who will be guided until the appropriate improvement has been made and they are back on track.

CHT conducts performance appraisal at two levels: general staffs and senior managers. Performance appraisal involves a series of face-to-face discussions between employees and line managers at the beginning of a year to set personal goals, and also at mid-year and years end to evaluate the degree of employee contribution to Company performance. Performance bonuses and employee remuneration are tied to performance.

## || Nurturing of Professional Talents

Chunghwa Telecom is dedicated to providing employees with a diverse learning environment. In 2018, Chunghwa Telecom training expenses exceeded NT\$ **500 million** and employee training sessions totaled **908** thousand hours. We encourage employees to commit themselves to long-term learning and we offer education subsidies as much as NT\$ **30,000** per semester. Subsidies were given to **376** employees in 2018 and the Company compensation amounted to NT\$ **6.3** million.

	2016	2017	2018
<b>Total Training Expense (NT\$ thousand)</b>	529,744	514,082	502,370
<b>Per Capita Training (NT\$)</b>	23,384	22,889	22,707
<b>Total Training Hours</b>	1,046,253	974,712	908,316
<b>Per Capita Training Hours</b>	46	43	41

## || The Happiness at Work Survey

Since 2011, we have been engaging outside agencies to carry out annual “Chunghwa Telecom Happiness at Work Surveys” on an anonymous basis. This helps us to understand how employees feel about their work and their working status, and are used as a reference for the improvement of management. The survey topics include individual opinions about the working environment, welfare and corporate transformation. By listening to the opinions of the employee, we get to understand their feelings and expectations. The 2018 “Happiness at Work” survey graded at an average of **81.74** points out of 100. In total, **6,063** questionnaires were returned (**28%** recovery rate), **5,089** of which were determined to be valid (**84%**). We will continue these surveys and respond to employee opinions.

# Health and Safety Management

Chunghwa Telecom was the **first** telecom service provider in Taiwan to adopt the OHSAS 18000 Occupational Health and Safety Management System. By the end of 2018, **26** Company business groups and branches had already passed international certification. We use careful systematic management to ensure the health and safety of our employees. In addition to identifying hazards and assessing the risks associated with telecom operations, the Company has also applied restrictions and enhanced risk control for high-risk tasks, while taking effective precautions to reduce occupational hazards. In addition to complying with safety and health regulations, the Company has also been active in the improvement of the current work environment and takes regular action with regard to safety and health facilities and measures.

We take part in all government initiatives and actively promote a healthy workplace. **5** divisions within the Company have received awards under the “National Workplace Safety and Health Campaign” organized by the Health Promotion Administration, Ministry of Health and Welfare.



The Occupational Health and Safety Assessment Series (OHSAS) 18000 was replaced with ISO 45001 in 2018. CHT plans to complete the certification process for all its business divisions by 2020.

## The Dedicated Occupational Safety and Health Management Unit

We have a dedicated “Labor Safety and Health Department” responsible for the planning and implementation of labor safety and health matters. A “Labor Safety and Health Committee” has also been created that meets every quarter to deliberate, coordinate and make suggestions on labor safety and health issues.

The “Labor Safety and Health Committee” has **29** members, including representatives from each department unit and the labor union as well as several technicians and medical personnel. Among these, **10** members are from the labor union, accounting for **35%**. **4** meetings were held in 2018 and **5** proposals were presented by the labor representatives. Three of these were related to the improvement of safety and health facilities, one to the refinement of safety and health management, and one was related to employee benefits.

## The First Telecom Carrier in Taiwan to Receive ISO 45001 Certification

In 2018, CHT's mobile business group (including its offices in Taipei, Taichung, and Kaohsiung) became the first cellular service provider in Taiwan to receive ISO 45001 (Occupational Health and Safety) certification. The group was also the **first** to receive OHSAS 18001 and TOSHMS certifications, including Mobile Business Group and Taipei, Taichung, and Kaohsiung Branch.

Since its establishment, CHT has always put great emphasis on occupational safety. We implement corporate level health & safety by providing adequate training, instituting control measures, performing internal audits, and conducting on-site inspections. Due to the withdrawal of the OHSAS 18000 standard, CHT's southern Taiwan business group is in the process of updating its safety management procedures to meet the ISO 45001 requirements. CHT plans to complete the ISO 45001 certification process for all our business divisions by 2020.



## Full-Time Physicians and Nurses to Improve Employee's Health Management

To better provide immediate medical assistance and attend to worker health, we engaged **20** full-time nurses and contracted **22** physicians in 2018 for this specific purpose. They were assigned to locations at Xinyi, Aiguo, the Da'uan Industrial Park, New Taipei City, Taoyuan, Hsinchu, Miaoli, Central Taiwan, Chiayi, Tainan, Kaohsiung and Pingtung. The Company has deployed **6** i-med Systems at local customer centers for employees involved in high-risk activities. Blood pressure is measured and employees are given careful health checks before they engage in any high-risk work. This reduces the risk of accidents in high-risk situations.

## Health Promotions for Senior Employees

A significant portion of Chunghwa Telecom employees are 50 years old or more. This is one reason why we consider health care an important issue, especially for senior employees. In 2018, we launched a series of health checkups and health management programs for senior employees. In addition to helping them develop physical capabilities, it was also part of our intention to create a support system among friends.

- 1. Health checkups :** The Company provided checkup services specifically targeted at senior employees, including carotid duplex and echocardiography for the risk of ischemic stroke, coronary artery narrowing and incomplete heart valve closure, as well as fundus photography for checking macular degeneration, retinal vessels and glaucoma.
- 2. Health promotion lectures :** The Company invited the head of Chinese Medicine at Taipei City Hospital Ren-Ai Branch to give a lecture on the idea of "preserving health and health maintenance." The Company also invited a dietitian from Chi-Hsin Health Clinic to talk about "eating correctly to prevent cardiovascular diseases," emphasizing the importance of health planning towards the maintenance of bodily functions.
- 3. Others :** As a countermeasure to influenza outbreaks, Chunghwa Telecom subsidized influenza vaccination for **1,561** employees.

## National Fitness Program

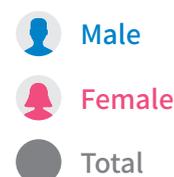
In 2018, the Sports Administration of the Ministry of Education cooperate with Global Views Monthly to organize National Fitness Program, **156** employees from CHT Xinyi Park signed up to learn more about fitness. The program included body measurements (height, weight, waist line, hip line, muscle mass, body fat, protein/mineral levels, and degree of obesity), muscle strength training (grips), flexibility training (forward flexion exercise), and cardiorespiratory fitness (knee-ups), designed to help employees learn more about their health and absorb new knowledge about sports.

## Reducing Occupational Hazards

The Chunghwa Telecom “Work Accident Guidelines” contain detailed procedures for assessing occupational illness. Employees suspected of having become ill as a result of their occupation are assisted with an application for verification at the local municipal/county/city authority, in accordance with the “Protecting Workers from Occupational Accidents Act.” We manage risks at the source, by making sure that construction risks are under control from the early design stages of a project. The line construction management system has been amended with respect to highlighting high-risk operations as well as risk assessment information to ensure operators are able to identify potential risk in advance. All high-risk operations are subject to approval by the ICT. Workers are also required to take site pictures with handheld devices and upload them to the monitoring system so that precautionary measures can be identified and taken to prevent such accidents as falls, oxygen deprivation, etc. To promote employee awareness and safety and health skills, we organized **138** training sessions in 2018 and there were **6,949** enrollments. The Company encountered 50 cases of occupational hazard in 2018; 27 of which had occurred during work (including 14 traffic accidents and 2 fatalities—one in a car accident, and the other struck by falling objects when operating a stacker), during commuting, a work-related injury, a traffic accident while commuting, and a fall. To raise employee awareness of traffic safety and reduce the occurrence of traffic accidents, we organized the “Prevention and Handling of Traffic Accident” training. The instruction was given by members of the New Taipei City Traffic Accident Investigation Committee. Employees are constantly being reminded at the Occupational Safety and Health Committee meetings, work safety meetings, and training sessions to exercise greater attention to personal safety and safe driving.

	2016			2017			2018		
<b>Injury Rate (IR)</b>	0.09	0.17	0.11	0.12	0.16	0.13	0.13	0.25	0.16
<b>Occupational Disease Rate (ODR)</b>	0	0	0	0	0	0	0	0	0
<b>Loss Day Rate (LDR)</b>	3.79	7.12	4.74	40.41	3.31	29.86	80.27	7.9	59.64
<b>Absence Rate (AR)</b>	0.31	0.66	0.41	0.30	0.70	0.41	0.37	0.79	0.49

- Injury Rate (IR) = (Total number of injuries/Number of hours worked by all employees) x 200,000
- Occupational Diseases Rate (ODR) = (Number of occupational diseases/Total work hours) x 200,000
- Lost Day Rate (LDR) = Total loss of work days/Total work hours) x 200,000
- Absentee Rate (AR) (Including personal and sick leave) = (Total number of absent days/Total number of man-days) x 100%
- Days absent: paid and unpaid personal leave and sick or extended sick leave (excluding official leave or leave due to workplace injuries).
- Including traffic accidents during commute.



## A Safe and Healthy Workplace

CHT considers its employees' health to be a valuable company asset. Providing a safe and healthy workplace is a basic requirement of good corporate social responsibility. In 2018, we spent NT\$ **81,430** thousand on employee health care. Our contributions in relation to employee health included:

Item	Description
<b>Health Examination of Employees and Dependents</b>	<ul style="list-style-type: none"> <li>The Company offers much better care than required by law and employees are given the choice of various health checkup packages depending on their age, risk factors and so on. A total of <b>21,504</b> (99.09%) employees had checkups during the year.</li> <li>Family members are also entitled to checkups at the same rate, and a total of <b>3,535</b> persons participated during the year.</li> </ul>
<b>Free Influenza Vaccination</b>	<ul style="list-style-type: none"> <li>Free influenza vaccination is available for all employees who fit the requirements for vaccination at public expense. Registration can be done online and <b>1,561</b> employees were vaccinated.</li> </ul>
<b>Employee Assistance Program (EAP)</b>	<ul style="list-style-type: none"> <li>CHT was one of the largest corporations in Taiwan to start promoting the Employee Assistance Program (EAP) since 2007. The EAP carries out <b>5</b> consultation sessions each year, in which outside experts are contracted to help employees resolve their legal, medical, family, workplace, and stress problems.</li> <li>Case managers made <b>3</b> visits and completed <b>463</b> service sessions in 2018.</li> </ul>
<b>Employee Health Service</b>	<ul style="list-style-type: none"> <li>A total of <b>12,853</b> employees participated in <b>178</b> health seminars. There were <b>2</b> sports competitions in which <b>65</b> employees participated. There were 91 educational trips attended by <b>9,654</b> employees. Health examinations were given to <b>928</b> employees in <b>13</b> sessions and <b>25,284</b> employees participated in <b>299</b> large-scale events.</li> <li>The Company published two health-related articles each month that contained comprehensive information about the concept of disease prevention.</li> </ul>

## Contractor Accident at Neihu Warehouse

CHT’s northern branch contracted a trucking company to transport cables to its Neihu warehouse. During the unloading process, a worker did not clear the vehicle’s operating zone and this wasn’t noticed by the driver, resulting in his death. After the accident, we immediately notified the relevant government agencies in accordance with the Occupational Safety and Health Act and sat down with warehouse employees to review safety procedures.

### Improvement Measures

1. Establish the “Standard Operating Procedures for Material Transporting in Warehouses.”
2. Convene with warehouse employees and contractors to reinforce safety training and awareness.
3. Organize an employee assistance program (EAP) to provide professional counseling services to employees.

## The “eSafe Wizard” App

As part of our effort to mobilize management, the “eSafe Wizard” app allows employees and contractors to report safety violations and apply for operation permits. The app also allows us to remotely perform spot checks on safety compliance, moving the entire management process onto the cloud. It is completely paperless, instantaneous, and highly effective. In 2018, **90.8%** of operation permits (including hot work, lifting, scaffolding, electrical maintenance, and fire-safety shutdowns) were issued through the system, and **97%** of safety violations were reported on the app. The app received the “Innovation in Labor Safety Awards” presented by Taipei City Government’s Department of Labor. We want to share this technology with others, which is why the app is currently in use not only across all CHT business divisions, but also by Taiwan Railway Administration and Taiwan Power Company.

### App Functionality

1. Mobilization—the “eSafe Wizard” app includes the following functions: safety violation notification, automatic safety inspection, operation permit application, on-site inspection, remote spot checks, internal communication, and occupational health & safety quizzes.
2. Significant outcomes were achieved using “eSafe Wizard” as an operations management tool in 2018. It is completely paperless, mobile, instantaneous, effective, and convenient.
3. Significant outcomes were achieved promoting “eSafe Wizard” as a project management tool across all business divisions.
4. The notification function of the app is an effective channel for promoting occupational health & safety. The app also allows users to learn more about safety and take quizzes online.

Item	Description		
Employee Health Promotion	<ul style="list-style-type: none"> <li>Physicians visited the plants <b>35</b> times a month. Sessions were for three hours and each patient was allocated 30 minutes.</li> <li>Healthcare personnel use the “Employee Health Management System” for the analysis and for the evaluation of health records. Where necessary, extra consultations can be arranged between the physicians and the employees for proper guidance and healthcare.</li> </ul>		
	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><b>Headcount: Thirty-minute medical consultation with a physician.</b> <b>2,646</b> (30 minutes / per person)</td> <td style="text-align: center;"><b>On-site visits by physicians</b> <b>420</b> persons</td> <td style="text-align: center;"><b>Headcount: consultation with a nurse</b> <b>5,501</b> persons</td> </tr> </table>	<b>Headcount: Thirty-minute medical consultation with a physician.</b> <b>2,646</b> (30 minutes / per person)	<b>On-site visits by physicians</b> <b>420</b> persons
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Healthy Workplace	<ul style="list-style-type: none"> <li>The noise level, lighting, temperature, humidity and air quality of our offices is tested regularly. The offices are also cleaned and maintained on a regular basis to ensure workers have a comfortable working environment.</li> <li>Furthermore, all offices feature ergonomic chairs, natural ventilation, indoor plants and other elements of a healthy work environment.</li> </ul>		
Employee Cafeteria	<ul style="list-style-type: none"> <li>Our employee cafeteria offers choices from a diverse range of nutritionally balanced meals to choose from.</li> <li>All food suppliers are subjected to rigorous review to ensure the safety of food served to our employees.</li> </ul>		
Balancing Work and Life	<ul style="list-style-type: none"> <li>Chunghwa Telecom has <b>31</b> hostels that provide travel accommodation. An annual travel subsidy of NT\$ <b>8,000</b> encourages employees to achieve a balance between work and life.</li> </ul>		
Flexible Working Hours	<ul style="list-style-type: none"> <li>Chunghwa Telecom provides two flexible working hour sessions in the morning and afternoon: 8:00~9:00 and 17:00~18:00.</li> </ul>		

## Building a Happy Business

CHT regard employees as important assets. We offer a commitment to “Peace of mind” to our employees, and refrain from making layoffs and salary reductions. This means employees can devote themselves fully to boosting performance at work to create more value for themselves and the Company. In response to the government’s policy to boost birth rates in 2018, CHT is providing childcare and maternity benefits to young employees with children aged 0–6 years old.

We are committed to building through software and hardware resources, so that employees can be confident in their work, creating higher value for individuals and businesses, and create a healthy and secure business.

Item	Activities and Description	Number of Participant/Beneficiaries	Contribution/Supplement
 <b>Maternity Allowance</b>	We offer a 6-month maternity allowance in compliance with the Employment Insurance Act. CHT also offers additional monthly allowances totaling half the sum assured under the Labor Insurance Scheme.	<b>127</b> persons	NT\$ <b>14,984</b> thousand
 <b>Childcare Allowance (Company Issued)</b>	Employees with children aged 0–6 years old will automatically receive a childcare allowance of NT\$ <b>5,000</b> per year.	<b>3,544</b> persons	NT\$ <b>7,911</b> thousand
 <b>Sports Activity</b>	Regional activities include <b>105</b> road running events, <b>159</b> hiking activities, <b>122</b> ball sports activities and <b>1,325</b> others (such as employee year-end dinners, travel, and so on).	<b>57</b> thousand persons	NT\$ <b>12,624</b> thousand
 <b>ESOT</b>	Improvement of employee welfare, enhancement of employee coherence, sharing company achievements and the establishment of an employee stock ownership committee to guarantee the quality of life after retirement or resignation.	About <b>19</b> thousand persons	NT\$ <b>2.3</b> thousand /month per person
 <b>Dependent Education Subsidy</b>	<b>Twice</b> a year (two semesters).	<b>19,141</b> persons	NT\$ <b>118,330</b> thousand
 <b>Wedding Subsidy</b>	A wedding subsidy is available for employees who are to be lawfully married.	<b>230</b> persons	NT\$ <b>570</b> thousand
 <b>Childbirth Subsidy</b>	Employees or their spouses are eligible for a childbirth subsidy.	<b>439</b> persons	NT\$ <b>1,090</b> thousand
 <b>Funeral Subsidy</b>	A funeral subsidy is available in the event of the death of a parent, foster parent, step-parent, the spouse or a child of an employee.	<b>834</b> persons	NT\$ <b>4,170</b> thousand
 <b>Recreation and Sports Space</b>	Includes an integrated stadium, swimming pool, tennis, badminton, basketball, and table tennis courts, multi-functional event space, karaoke room, and an employee dormitory.	Total <b>13,103</b> square meters	

Welfare is provided for employees of Chunghwa Telecom, but not for those of subsidiaries.

## Building Smart & Green Company Dormitories

The ever-rising housing prices in Taiwan make it difficult to retain highly skilled R&D workers. Therefore, CHT is building smart & green dormitories to attract technological talent to join the company, fostering our long-term ability to embrace and develop new technology while contributing towards environmental sustainability.

The Smart & Green Dormitory Project at Yangmei, costing NT\$ 300 million, is estimated to be completed by 2021, providing a cozy, healthy, safe, and convenient environment for our staff to live in. Similar projects are under way at Wanhua and Sanchong.

## || Better Maternity Benefits than the Legal Requisites

We have been implementing an unpaid childcare leave system since 2006 to help employees juggle their attention between work and family. Chunghwa Telecom is required, under the Employment Insurance Act, to pay a six months maternity allowance to employees who give birth. Female employees who have taken this leave are further entitled, under company policy, to receive an additional monthly allowance of half the sum assured under the Labor Insurance Scheme during child care leave, for a period up to two years. Employees of Chunghwa Telecom are also entitled to other privileges such as family care leave, paternity leave, menstrual leave, and a nursery room service.

In 2018, **102** employees applied for unpaid child care leave; **127** employees applied for child care leave allowances. NT\$ **14,984** thousand was paid out as child care leave allowances, an increase of NT\$ **160** thousand over 2017.

Year	Item	Male	Female	Total
2018	The Number Qualified for UPL for Raising Children 2018 (A)	962	480	1,442
	Number of Applications for UPL 2018 (B)	29	73	102
	Application Rate for UPL 2018 (B/A)	3%	15%	7%
	Number of Expected Reinstatements 2018 (C)	25	52	77
	Number of Applications for Reinstatement 2018 (D)	22	52	74
	Reinstatement Rate 2018 (D/C)	88%	100%	96%
2017	Number of Reinstatements 2017 (E)	23	74	97
	One year Retention after Reinstatement 2017 (F)	23	74	97
	Retention Rate 2017 (F/E)	100%	100%	100%

1. The number of employees entitled to apply for a parental leave of absence in 2018 (A): calculated as employees who had applied for maternity leave and parental leave in 2016-2018.
2. The number of expected reinstatements 2018 (C): The number of employees who applied from 2016 to 2018 and should be reinstated in 2018.
3. The number of actual reinstatements 2018 (C): The number of employees who applied from 2016 to 2018 and were reinstated in 2018.
4. Reinstatement rate: (actual number of reinstated employees that year/number of employees who should have been reinstated that year) × 100%
5. Retention rate: (the number who continued working after reinstatement/reinstated number for the previous year) × 100%

## || Retirement Benefits

Employee requests for retirement are processed in accordance with the “Chunghwa Telecom Employee Retirement Pension and Separation Guidelines,” the “Labor Standards Act,” and the “Labor Pensions Act.”

- The Labor Standards Act: The Company makes monthly pension contributions of up to 15% of an employees' monthly salary to the pension fund. This fund is held under the auspices of the Labor Pension Supervisory Committee. The current balance of the pension fund account is **38.8** billion.
- The Labor Pension Act: The Company makes monthly contributions of no less than 6% of an employees' monthly salary. These contributions are deposited in the employees' pension account held by the Bureau of Labor Insurance of the Ministry of Labor, in accordance with the Contribution Rate Sheet approved by the Executive Yuan.

Monthly pension contributions were made in accordance with the “Monthly Contribution Wages Classification Scheme” published by the Ministry of Labor, subject to biannual adjustments.

To help employees adapt to life after retirement, the Telecom Training Institute organized a series of “Retiree Adaptation Courses.” **10** sessions were held in 2018 for audiences totaling **466**. Furthermore, a donation of NT\$ **4.5** million was made to the “Chunghwa Telecom Retirees Association” for various activities, and NT\$ **1.5** million for the organization of travel events. A further NT\$ **300,000** was donated for a Chinese New Year banquet held for volunteers.

To help facilitate the transfer of knowledge and experience, we have established a set of “Consultant Recruitment Guidelines” and retired employees engage in our endeavors to maintain continuous growth. Consultants can have a paid or honorary role. Executive vice presidents and above, and heads of first-grade institutions, may be hired by Chunghwa Telecom as paid consultants after retirement. Paid consultants shall serve a term of no more than one year, and assume honorary roles from the day after the one-year period has expired.

## Human Rights Value Protection

We proactively monitor human rights issues, and actively protect the value of human rights. We have responded to the UN Declaration of Human Rights and the ILO Convention on the elimination of all forms of discrimination and the prohibition of forced and child labor. We have also responded to the UN International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights. We are dedicated to the promotion of human rights awareness and to the assurance of respect and fair treatment to all stakeholders.

CHT is a member of the International Telecom Union and we fully comply with all the “International Radio Regulations” established with respect to equal rights to information. The regulation lays down rules concerning: freedom of communication, transparency in global roaming charges and competition, the support of Telecoms in developing nations, telecom services for persons with disabilities and the freedom of speech over telecom networks.

In addition, we support the UN Guiding Principles on Business and Human Rights, for which a human rights due diligence investigation is presently being conducted. We also make sure that each human rights issue in the operational value chain is evaluated and we maintain all risk at a minimum level.

Human rights issues include anti-discrimination, gender equality, freedom of association, collective bargaining, child labor, forced or compulsory labor, and aboriginal rights.

### 2018 Value Chain Human Rights Evaluation Results

Subjects of the Value Chain	Location/ Amount	Evaluation Mechanism	Evaluation Percentage	Percentage at Risk	Description/Boosting Mechanism
 CHT owned institutes at 1 to 2 lower levels	28	<ul style="list-style-type: none"> <li>Labor-management meeting</li> <li>Collective agreement</li> <li>Workers' Union meeting</li> <li>Annual human rights event inspection</li> </ul>	100%	3.0 %	<ul style="list-style-type: none"> <li>Some institutes were in violation of regulations and legislation and corrective measures had to be taken.</li> <li>We continue to protect human rights through the Workers' Union and Collective Agreements.</li> </ul>
 Subsidiaries	19	Annual CSR implementation inspection	100%		
 Re-investment Companies	6	Annual CSR implementation inspection	100%	8.2%	Some institutes were in violation of regulations and legislation and corrective measures had to be taken. We continue to protect human rights through the Workers' Union and Collective Agreements.
 Up-stream and Down-stream Suppliers	Tier 1 1,408	<ul style="list-style-type: none"> <li>CSR survey inventory</li> <li>CSR second party audit</li> <li>Occupational health and safety audit</li> </ul>	100%	1.7 %	<ul style="list-style-type: none"> <li>Some suppliers had violated the labor laws and regulations.</li> <li>We will continue to increase the evaluation percentage using more Supplier Conference and other channels, Follow-up of suppliers with identified risk will also be done to see if improvements have been made.</li> </ul>
	Critical tier 1 143				
	Critical tier 2 28				
 The Public	All consumers	<ul style="list-style-type: none"> <li>Diverse complaint channels (including discrimination and harassment)</li> <li>Satisfaction survey</li> <li>Personal information and privacy rights protection inspection</li> <li>Minority group service mechanism</li> </ul>	100%	0 %	<ul style="list-style-type: none"> <li>There was no discrimination or harassment, or any invasion of CHT customer privacy or misuse of personal information in 2018.</li> <li>We will continue to promote the 5I SDGs Initiative to ensure information equality among the groups.</li> </ul>

## Human Rights Material Risk Issues

After a study of the 2018 risk analysis and inspection of the human rights value chain, we have concluded the following material issues, including:

### Local Human Rights

To fulfill the concept of anti-forced labor and appropriate working environment, we required the bidders to sign a “Declaration of Minerals as Conflict-Free” at the procurement phase. We evaluated the suppliers to determine if raw materials derived from human rights high-risk areas like the République Démocratique du Congo were being utilized to avoid further infringement of the basic human rights of local residents in places where we provided information communication services and products. We depend on demand and require the suppliers to provide certification of material resources, third-party verification or accepted auditing to confirm no related violations.

We also required that all suppliers complied with the “Restriction of Hazardous Substances Directive” (RoHS) to prevent hazardous substances from the source endangering local employees, the environment or customers. Employment Human Rights.

### Employment Human Rights

We use the Occupational Health and Safety Management System (OHSAS 18000; ISO 45001) to avoid potential risk and have systematically fulfilled employee safety and health management. In addition to compliance with the safety and health-related regulations toward high-risk tasks, we have also enhanced risk control. We continue to improve the working environment and act in regards to safety and health facilities and measures to actively ensure employee protection.

Sometimes customer service personnel encounter irrational requests and even personal abuse from customers in the course of the provision of our services. We established an SOP for employee response and acted at a critical level in certain circumstances. Legal assistance can be authorized to aid in the event of serious offenses and to prevent illegal practices. CHT adopted the ISO 10002 quality management system in 2011 and have a certified and flawless customer service procedure and management mechanism in place. In addition, we regularly offer pertinent educational training courses in customer relations, the management of emotional stress, and occupational hazard prevention. While building up professional capability, we positively avoid pressure on customer service personnel to avoid mental and physical health problems. Customer service personnel were given **8** training courses during the year and training hours totaled **1,490** hours in 2018.

### Customer Human Rights

Due to the nature of our industry, in addition to establishing information security management applicable to the enterprise operation, we also implement measures to safeguard our customer’s personal information. To improve our operational management, we implemented information security in compliance with the international standards ISO 27001 and BS 10012 and carried out regular supplier auditing and supervision through employees or a third party. We also carried out vulnerability scanning and the testing of all equipment and software from outside suppliers to ensure there were no back-doors or malware.

We take customer privacy protection very seriously and in addition to acquiring the customer’s agreement before the collection of any personal information, we established the internal “Security and Safety Principle of Customer Information Re-use.” This means that personnel need to make formal application and receive managerial approval before being granted the authority that allows access to the advanced information security system. The system itself not only supervises and records employee operations but also only reveals the number of customers under certain conditions without touching detailed information. Related information also complies with the principle of “no names are revealed” to prevent the downloading of personal information and avoid leakage or disclosure.

### Information Equality

Chunghwa Telecom is creating a free and open information sharing environment without technological boundaries that can be shared by everyone. Such a system inherits culture, extends education, promotes industry, and upgrading art with a connection to the universe of the Internet. Digital technology can be beneficial to everyone irrespective of age, social standing, wealth, geographical location, or education. We base our approach on the characteristics of the ICT industry and the spirit of “value is where the responsibility lies,” in our work with the communities in Taiwan. Our main objective is to “minimize the digital divide and create digital opportunities,” Chunghwa Telecom watches the trends of this digital divide and offer solutions that facilitate social innovation and digital inclusion. We spare no effort in the advocacy of the “corporate volunteer,” participate in community services, and proactively assist communities in the creation of digital opportunities.

# Safeguarding Consumer Rights and Interests

## Digital Transformation of Diverse Virtual and Physical Channel Services

Chunghwa Telecom values consumers’ opinion. In addition to conveying technical features of the products and services we offer, we look at the matter from the point of view of the consumer. We provide consumers with the most comprehensive, high quality and efficient services putting a wide and diverse range of service channels at their disposal. By the end of December 2018, we had **469** direct physical channel service stores, and **268** franchised stores, a total of **737** service outlets that provide convenient service for all consumers in cities, or even in remote areas in Taiwan.

## Ethical Marketing and Information Transparency

We provide a handbook about products and services for consumers that details product characteristics and applications, consider the negative aspect of overuse, and has friendly reminders provided while marketing. In addition, Chunghwa Telecom has set up the “Channel Sale Support Items Management Guideline” and “Channel Sales Support Items Management Implementation Procedures” to make the display of sales support items and operation management consistent throughout all the service and business locations. This ensures a positive service environment for consumers. These are vital for maintaining a superior and professional image as well as the service quality at Chunghwa Telecom. **No violations of health and safety and product labeling was reported in 2018.**

## Diverse Services – The CHT Combinative Store

Following the establishment of the **first** telecom combinative store in Taiwan in 2017, more stores were established in Zhongli, Miaoli and Hsinchu in 2018. The stores include a cafe, 3C and an experimental display. Green store capability was also developed and energy saving household appliances such as TV, refrigerators, air purifiers and even electric bicycles provide customers with new service experiences.

## Extending Our Reach in the Mobile Payment Market with Hami Pay

In 2018, Taishin International Bank joined CTBC Bank, E. Sun Bank, Union Bank of Taiwan, and Cathay United Bank as the 5th bank to join the Hami Pay app—CHT’s mobile payment platform—providing our customers with convenient and simple-to-use payment services. We are always seeking to form new alliances with financial institutions to adapt to the “era of mobile payment.”

To extend the market penetration of Hami Pay, the iOS version now includes a “bill pay” function. Customers can pay their phone bills, credit card bills, utility bills, and even parking tickets, with a variety of payment methods to choose from. CHT will continue to improve the user experience in the Hami Pay app to bolster the mobile payment ecosystem in Taiwan.



Category	Description
Customer Service Kiosks	These serve as the “Database” for business and engineering-related information. When new information is received, it will be verified according to an SOP. Afterward, an FAQ will be further drafted and uploaded to the customer information station for use by the Chunghwa Telecom customer service personnel (at service outlets and call centers) and the Internet counter.
Consumer Hotline	Provides complete information on the features of products and services, and related special offers.



## || Proper Management of Personal Information

Chunghwa Telecom complies strictly with the Personal Information Protection Act with respect to the collection, processing, and use of personal information and guarantees the best security and protection of personal information using its meticulously designed management system.

All our employees are involved in the implementation of personal information protection and are all fully aware of the need for security. To this end we have established a management mechanism for personal information. In addition to this we carry out proper awareness training on a regular basis and internal audits are done for certification and to give an unbroken trace of the outcome all the performance indicators.

In 2018, there were 12 complaints about alleged information leakage, 2 cases fewer than in 2017. Complaints of this type accounted for only 0.00003% of our customer service hotline. The cases were checked using all the available channels and **none of them were proved to be the result of a violation of the relevant regulations.**

### Chunghwa Telecom Management Mechanism for Personal Information

Category	Description
 <p>Collection</p>	<ul style="list-style-type: none"> <li>Our “Privacy Policy” and “Personal Information Protection Statement” are both accessible on our official website. With these documents our customers can learn more about how CHT collects, processes, and uses personal information, when and how CHT shares information with third-parties, and the rights they may exercise to prevent the misuse of information.</li> <li>We perform a personal information inventory (PII) and privacy impact analysis (PIA) prior to any major business decisions and only collect the minimum amount of information needed.</li> <li>We update items listed in our “Personal Information Protection Statement” on a regular basis to comply with the law.</li> </ul>
 <p>Processing</p>	<ul style="list-style-type: none"> <li>Any networks, systems, programs, terminals, and employees that are involved in the collection, processing, or usage of personal information are regulated and monitored by CHT’s Cybersecurity Protection Program, ensuring the security of customers’ personal information.</li> <li>We require all third-parties to sign a non-disclosure agreement (NDA) when certain business operations require the sharing of personal information (including data collection, processing, or usage). All are supervised by contract.</li> </ul>
 <p>Usage</p>	<ul style="list-style-type: none"> <li>All information collected will be used for, and only for, the disclosed purposes. If the information is to be used for purposes other than the ones disclosed, CHT will obtain additional permission from customers, except in instances permitted by law.</li> <li>In case of government inquiries or court orders, compliance officers will only provide the minimum amount of information necessary in accordance with the “Regulations of Provision of Call Records by Telecom Companies to Government Agencies” and the “Regulations of Provision of User Data by Telecom Companies to Government Agencies.”</li> </ul>
 <p>Personal Control</p>	<ul style="list-style-type: none"> <li>Pursuant to the Personal Information Protection Act, customers have the right to make inquiries and request copies of their personal information, opt out of marketing communications, terminate contracts, and request deletion of their personal information.</li> </ul>
 <p>Customer Service Control</p>	<ul style="list-style-type: none"> <li>Chunghwa Telecom member services, all customer service hotlines and digital mobile products have been certified under BS 10012.</li> <li>Customer service operations are carried out within the boundaries outlined in the “Customer Service Department Personal Information Protection Manual.” The Company promotes proper awareness on a regular basis and detailed records are kept for future reference.</li> <li>The Company has a personal information incident procedure in place that requires the customer service center to handle all leakage of personal information in accordance with the “Customer Service Department Personal Information Incident Procedure Handbook.”</li> <li>In an attempt to provide each department with the right incentives to enforce personal information protection, we organize a competition every six months and reward the top three performers with trophies and prizes. The competition rates participants on several aspects including cross-server virus alert, a social engineering email test, third-party verification and personal information incidents.</li> </ul>

Please refer to page 126-129 of CHT’s 2018 Annual Report for more information on our “Risk Management Framework for Cybersecurity and Personal Information Protection.”

## Refined Customer Service

Chunghwa Telecom provides services which are refined, thoughtful and professional to build warm atmosphere around customer relations. We use big data analysis to learn the true needs of customers so that we can offer thoughtful and customized services and products. In 2018, CHT was crowned the “Customer Service Excellence Award (CSEA)” by the Taiwan Contact Center Development Association (TCCDA), and our call center was given the “Best Telemarketing Team” award. We also ranked as the **No. 1** “4G service provider” in Next Magazine’s 15th Annual Outstanding Service List in the same year.



CHT’s positive approach cultivates both favorable impressions and brand loyalty. We set high standards for our customer service hotline. To ensure quality service, we sought multiple international certifications, including ISO 9001, ISO 10002, BS 10012, and ISO/IEC 27001. In recent years, we have been using big data analytics to identify customers’ concerns and to improve the overall user experience. Through sincere communication and system improvements, we are able to create additional value for our customers.

### Chunghwa Telecom Customer Service Mechanism Overview

Item	Description																
<b>Customer Service Location / Size</b>	<ul style="list-style-type: none"> <li>The Company has <b>15</b> customer service centers</li> <li>The number of customer service personnel averages <b>3,000</b></li> </ul>																
<b>Multi-Channel Customer Services</b>	<ul style="list-style-type: none"> <li>Webchat</li> <li>Social media, “Chunghwa Telecom Dr. Q Fan Page”</li> <li>Web customer service center</li> <li>Mobile customer service center</li> <li>Mobile App</li> <li>SMS</li> </ul>																
<b>Training Result</b>	<p>We use customer service training workshops to refine our customer-centric approach and devotion to the provision of the most thoughtful services. In 2018 <b>5</b> such workshops were held in the Chunghwa Telecom training facilities in Banqiao, Taichung, and Kaohsiung. A total of <b>345</b> people participated in these training sessions which were also made available online for remote teaching. CHT holds a very high standard for customer representatives. Besides the basic requirement of tone and manners of speech, we place even more emphasis on professional knowledge and competence. In 2018 alone, <b>5,684</b> employees received <b>141,207</b> hours of training combined.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Total Participants Total</th> <th>Total Training Hours</th> <th>Average training Hours</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>5,684</td> <td>141,207</td> <td>24.8</td> </tr> <tr> <td>2017</td> <td>6,832</td> <td>161,911</td> <td>23.7</td> </tr> <tr> <td>2016</td> <td>7,487</td> <td>171,355</td> <td>22.9</td> </tr> </tbody> </table>	Year	Total Participants Total	Total Training Hours	Average training Hours	2018	5,684	141,207	24.8	2017	6,832	161,911	23.7	2016	7,487	171,355	22.9
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2017	6,832	161,911	23.7														
2016	7,487	171,355	22.9														

## AI Customer Service Chatbot

We continue to bring innovation to the way customers communicate with us to improve user experience. In 2017, we created the “AI Customer Service Chatbot,” which is **100 %** in-house developed by CHT Labs. Customer representatives took on the role of “robot trainers,” transforming massive yet disorganized customer data into useful and systematic information in the AI knowledge base. Developers also designed various customer interaction scenarios to fine-tune the chatbot’s machine learning process. The goal is to offer 24/7 real-time customer service, providing users with useful information and solving basic issues that might arise.

A preliminary version of the chatbot was launched in 2018 for our cellular service business division, and as of year-end 2018, **60,000** out of **100,000** calls (**60%**) were answered and resolved by the chatbot, with an AI recognition success rate of **96%**. The overall outcomes were satisfactory.

We plan to include our ISDN and ADSL services in the chatbot in 2019, and ADSL would provide functions such as answering customer inquiries (e.g., data usage, unpaid bills, contract details, etc.) and purchasing international roaming services.

## Commendation for Best Customer Service Personnel

To inspire passion and professionalism among customer service officers, we reward customer service personnel who receive praise from customers, and accept these credits as part of their performance appraisal as an excellent service quality. Meanwhile, a “Service Excellence” section has been created on the Intranet to publish cases of excellent service for personnel to share, learn and download.



## KPIs for Customer Service Hotline

In 2011, Chunghwa Telecom became the telecom carrier to have all its centers certified for the “ISO 10002:2004 Customer Complaint Management System.” The Company views customer complaints as opportunities to make ongoing improvements. The resolution of customer complaints and dissatisfaction is rule-based and they must be settled within 3 working days. This approach ensures the continuous improvement of service quality. In addition to the customer service hotline, consumers may also use the corporate website or Representative Line authorized by the President (02-23446789) to raise complaints directly to the assistance of the senior executive.

KPI	2016	2017	2018
Customer Service Response Within 20 Seconds	77.38%	72.26%	73.42%
Service Satisfaction (5-point scale)	4.64	4.68	4.71

## Consumer Satisfaction Survey

We conduct a broad variety of satisfaction surveys to identify the issues of most concern to consumers and their expectations. We use these findings to guide future improvements. After each survey, the opinions and suggestions are conveyed promptly to product or business personnel (including Risk Management and the Public Relations Departments) using the consumer feedback system. Furthermore, consumers’ opinions are brought to the attention of the senior manager of the product and customer service departments for discussion at monthly meetings to ensure that the consumers’ expectations receive proper consideration.

Regarding the IPA (Importance-Performance Analysis) items belonging to the fourth quadrant (high importance and low performance) after a review of the results of the annual satisfaction survey, we will request that the relevant functional units conduct further analysis and propose measures for concrete improvement every year. There will also be a follow-up in the next quarter to keep track of the progress of any corrective action found necessary. Due to a spike in demand during the Mother’s Day promotion, customer satisfaction decreased in 2018.

Designate an **external market** survey company to conduct consumer satisfaction survey

Survey Result (10-point scale)

- Large Enterprise 9.05**
- Small and Medium Enterprise Consumer 8.49**
- Average Consumer 6.89**

## || Total Coverage of Free 4G Telecommunication in Remote Areas

We are constantly expanding our mobile network. We have the most 4G cell towers and the highest 4G signal coverage in Taiwan. According to test results published by the government, our network speed is the fastest across all 22 administrative districts in Taiwan. Our network quality has been unanimously commended by domestic and international mobile analytics organizations, including OpenSignal (“top 4G download speed” and “best overall download speed”) and Speedtest (“fastest mobile Internet speed in Taiwan”). As always, customer satisfaction is our top priority. We will continue to improve our mobile network to provide customers with top-notch services. To ensure the equal sharing of information, in addition to a positive strengthening of mobile Internet quality in populous metropolitan areas, we have paid more attention to signal coverage in remote areas. We have achieved **100%** total 4G coverage in all towns, and continue to go deep into the mountain areas and off-shore islands. Of the 747 remote villages and areas in Taiwan, **736** have 4G LTE coverage.

To promote equal digital rights, we support the “DIGI+ Program” initiative introduced by the Executive Yuan. We plan to increase 1Gbps network coverage to **90%** by 2020, 2Gbps network coverage to **90%** by 2025. Providing ultra-broadband Internet in remote areas is a means to balance urban-rural development, encouraging innovation in the digital economy, creating added value in the industry, and, in turn, stimulating overall economic growth. In 2018, we invested NT\$ **200** million in **116** network improvement projects, and the following projects were successfully completed: 1Gbps network speed across all townships, 100 Mbps across all villages, increasing Wi-Fi hotspot bandwidths, improving 4G cell towers in rural areas, etc.

## || Expand Wireless Hotspots

We have also supported the government initiative for the promotion of free wireless Internet services on a nationwide scale. By making a reasonable Wi-Fi rental package available, as well as a robust user authentication platform and a nationwide maintenance/monitoring system, we have helped the government deploy free Wi-Fi hotspots all over the country. By the end of 2018, we had installed more than **57,000** public Wi-Fi hotspots, giving users access to stable high-bandwidth in a densely covered Wi-Fi service.

Our contributions to social events in 2018 included working with local county and city governments to provide Wi-Fi hotspots and enable Internet access at festive gatherings and international sports events. We installed **330** hotspots for the 2018 Flora Expo, **74** hotspots for New Year’s Eve festivity, **197** for the Lantern Festival and about **64** for other activities. The Company participated in **23** festive occasions, built **665** hotspots in total, and spent more than NT\$ **7.7** million.

## || Enhanced Disaster Response and Communication Coverage

Chunghwa Telecom continues to install repeaters, backup wireless routers, and backup power supplies to increase reliable transmission capacity in remote areas. By increasing the capacity of backup batteries to more than **72** hours, the Company ensures that residents in remote locations can stay connected even when main power has been disrupted by a natural disaster.

Item	Description
<b>Responses Measure</b>	We conduct annual emergency drills for a wide number of different events, from the coordination of network resources and equipment to emergency repairs. Our base stations have been deployed in a diversified manner and are covered by robust backup plans so that failure of circuitry, power or equipment at any base station will not disrupt the operation of other nearby base stations.
<b>Occurrence of Disaster</b>	If communication is severely disrupted in the unfortunate event of a natural disaster, we take contingency measures, that depends on the actual circumstances, to maintain communication between the disaster locations and the outside world. These can include microwave radio, satellite transmission, portable base stations, etc.
<b>Special Cases</b>	Areas that are enclosed and accessible only through one road, such as on the Suhua Highway, are covered using multiple base stations so that even if one station were to be damaged in a natural disaster, other paired stations may still function to maintain contact with the area by phone.

## || Disaster Report and Upgraded Safety

In efforts to minimize the impact of disasters by prompt messaging, the Chunghwa Telecom self-developed “Emergency Response SMS System” sent out more than **140,000** SMS alerts in 2018. The role of this service in disaster prevention and notification was outstanding. In addition, a “Public Warning System” (PWS) has been established to support the national policy of emergency message dissemination about typhoons, earthquakes, thunderstorms, landslides, roadblocks, reservoir flooding or an outbreak of disease, fast and correctly to specific regions simultaneously. As long as a mobile phone is open to the PWS function all our 3G and 4G customers will receive messages about disasters.

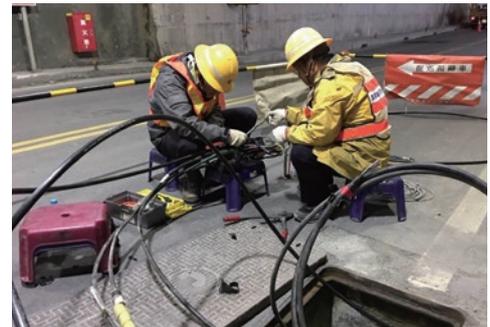
In 2018, we provided technological assistance for the government on multiple occasions: New Taipei City Government’s and Hsinchu County Government’s “All-out Defense Mobilization Drills,” Directorate General of Highways’ “Traffic Conditions Alert System,” and Atomic Energy Council’s periodic “Nuclear Safety Drills”—all using the “Wireless Emergency Alerts” system to notify citizens in designated areas, significantly improving the general public’s awareness of disasters and disaster response measures. In addition, we used the “PWS cell broadcast” system for the first time to help the government disseminate information on prevalent animal/plant diseases and hazardous air quality.

## 2018 Hualien Earthquake Relief Operations

The 2018 Hualien Earthquake brought massive destruction to the area, causing multiple buildings to collapse. After the earthquake, CHT immediately established an emergency response center, deploying a fleet of “Cell-on-Wheels (COW)” trucks while diverting all our resources into restoring cellular service to the region so that earthquake victims can get in touch with their families.

CHT firmly believes in the power of “paying it forward.” Not only did we donate NT\$ **10** million to the victims to help them through the darkest moments of their lives, we also worked with charitable organizations (Chinese Christian Relief Association and World Vision Taiwan) to accept donations by text message. All proceeds went into the earthquake relief mission.

Furthermore, we provided victims with three months of free cellular services. All outstanding bills were given a grace period of three months. Qualifying victims were also offered a NT\$ 1,000 discounts on new mobile devices. Affected households classified as victims by the government were exempt from any charges related to landline services, broadband services, and MOD services (including subscription fees and add-on purchases) from February 7 onwards until the household applies for reinstallation. Other affected households were exempt from all charges until regular service resumed.



## Major Service Interruptions in 2018 and Countermeasures

In compliance with regulations set forth by the National Communications Commission (NCC), CHT discloses major service interruptions and subsequent response measures on its website. In 2018, one major interruption occurred, which is summarized and analyzed below:

1. Description of the interruption: NGN equipment in Taipei S2 district malfunctioned, causing network congestion for 40,000 SIP users hosted on the IMS-1 system.
2. Reason for the interruption:
  - Outdated IMS equipment led to poor performance.
  - Core equipment malfunctioned, causing inability to respond to requests. This was accompanied by repeated reissuance of requests by the SVG module, eventually resulting in system overload.
3. Improvement measures:
  - Adjusting parameters of **200** SVG modules—reducing the limit of simultaneous requests from 30 to **10**, and increasing the keepalive (KA) interval from 10 minutes to **60** minutes.
  - Transferring SVG modules into the newly built Taoyuan Fuguo and Taichung Lixing NGN-IMS plants—Due to the large amount of enterprise clients using IP Centrex, the transfer was implemented in two stages.
  - Taoyuan Fuguo and Taichung Lixing NGN-IMS plants can host more than 300,000 individual and enterprise clients. They are equipped with resource monitoring modules, system analytics logs, and bandwidth monitoring mechanisms, allowing us to closely monitor system performance.
4. Implementation status:
  - Heterogeneous network redundancy—adjusting the routing of TS network switches, based on the demand of enterprise clients, to better utilize idle network resources.
  - Establish a cross-departmental task force to review current system maintenance procedures and map out future improvement plans based on the development of NGN-IMS technology.
5. Outcomes:
  - Average annual interruption frequency lowered from 0.0130 per user in 2017 to **0.0016** per user in 2018.
  - Average annual interruption duration lowered from 1.5 minutes in 2017 to **0.63** minutes in 2018.

## The Alleviation of Public Concern about Electromagnetic Waves

According to a report by the World Health Organization (WHO) and related scientific research, exposure to base stations and Wi-Fi signals does not affect human health. For this issue, Chunghwa Telecom ensures strict compliance with the authority’s safety standards when constructing telecom infrastructure. The Specific Absorption Rate (SAR) of all mobile communication products we purchased have complied with the restrictions of the National Communications Commission (NCC).

Given the scarcity of suitable base station locations and the need to assure consumer rights to quality communication, we will strive to comply with regulations by taking the approved precautions at all stages of installation. In 2018, Chunghwa Telecom incurred NT\$ 6.5 million in fines and administrative penalties on 13 counts of violations associated with base stations. These violations occurred as we sought to address consumer demand for “good reception” and concern towards “negative health impacts from base stations.”

The measurement of the electromagnetic radiation in the environment conforms to the standard of the International Commission on Non-Ionizing Radiation Protection (ICNIRP), which must be lower than 0.45 μW/cm<sup>2</sup> at 900MHz and less than 0.9μW/cm<sup>2</sup> at 1,800MHz. Any resident who has concerns regarding base stations near their home can request a free complimentary measurement of the strength of the nearby electromagnetic waves by calling 0800-580-010.

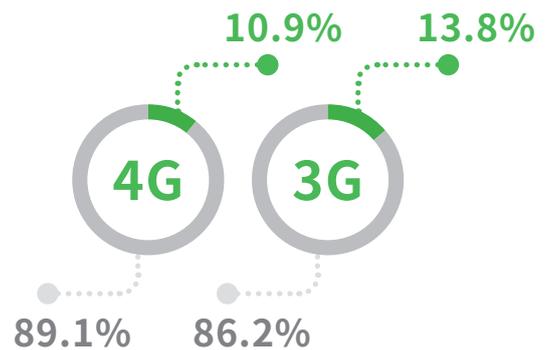
### Advocate the Accurate Understanding of Electromagnetic Waves

Chunghwa Telecom has been working closely with the Taiwan Telecom Industry Development Association to convey to the public the correct information about electromagnetic waves, by organizing conferences and issuing promotional materials.

- The Company joined NCC and 14 county/city governments nationwide in hosting **15** seminars on the topic of electromagnetic waves and **149** free complimentary electromagnetic wave measurements have been completed to date.
- Local government bodies were issued some promotional material and pamphlets about electromagnetic radiation, which were distributed to the public during various activities to promote proper understanding.

### Types of Base Stations Installed by CHT

Installed on existing buildings.



Shared Station

Independent Station





## Telecom Services and Promotions

### Fraud Prevention

In 2007, Chunghwa Telecom assisted the government in establishing the 165 Anti-Fraud Consultation Hotline to support the police and authorities in the defiance against fraud.

Item	Description
Resources Committed	<ul style="list-style-type: none"> <li>An average of <b>8</b> customer service personnel joined the service every month to work with the Criminal Investigation Bureau in a concerted front-line duty effort from Monday to Friday.</li> <li>“Disconnection Service Fraud Prevention System” offers information on some suspected telephone gimmicks used for cheating customers and a timely settlement of the problem. An average of 1 customer service person participated in the program each month.</li> </ul>
Prevention of Fraud on Network / Mobile Devices	<ul style="list-style-type: none"> <li>A two-way, SMS-based authentication system was introduced for small payments.</li> <li>A scam alert was added to all two-way SMS authentication messages.</li> </ul>
Progress Description in 2018	<ul style="list-style-type: none"> <li>The hotline received <b>188,873</b> calls, and <b>16,114</b> cases of fraud were referred to the authorities.</li> <li>The Company assisted the Criminal Investigation Bureau, National Policy Agency in disconnecting <b>406</b> phone numbers, and successfully stopped <b>1,608</b> scams.</li> </ul>

### Reducing Negative Impact of the Internet

We continue to minimize negative material circulating on the Internet through diverse action plans, and endeavor to provide consumers with a healthy, trouble-free network environment.

Item	Description
Anti-Virus and Anti-Hacker	A HiNet mailbox gives customers access to a free webmail service. A simple setup, allows users to decide if questionable e-mail will be automatically deleted in the future. We continue to monitor the formulation of the regulatory obligations of the “Regulations for Commercial Electronic Spam Mail.”
Adult Content	Provides “K12 Mailbox Forced Isolation,” the “HiNet Adult Content Gatekeeper,” and the “Mobile Adult Content Security Guard” keeps children and teenagers out of harmful websites.
Usage Time Control	The “HiNet Online Time Management Service” and mobile phone “3G Talk Without Worries” programs, giving parents effective control of the mobile phone and Internet use.
MOD Parental Lock	The Parental Lock can be set at “protected” or “parental guidance.” Settings are in effect immediately once the password has been entered. The parental lock can be used to protect children from harmful or bad content.



## Strategy

- Facilitation of greenness in the ICT industry (Green of ICT) and overall greenness of society through ICT (Green by ICT)



## Management

- Instituted the “Code of Corporate Social Responsibility for Suppliers of Chunghwa Telecom Co., Ltd.”
- Instituted the “Chunghwa Telecom Co., Ltd, Procurement Grievance Procedures”
- Establishment of the “Environmental Sustainability Strategies and 5-Year Plan”



## Action

- Efficient energy management using “EARTH”
- The launch of the 5G initiative in pursuit of profit, environmental sustainability, and social responsibility
- Became the **first** telecom service provider in Taiwan to implement:
  - Collaboration with the Sustainable Alliance for Low-carbon Economy (SALE) to issue the “Sustainable Partnership Certificate”
  - Signed on as a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) initiative.
  - Incorporation of the ISO 20400 Sustainable Procurement Standard.
  - Joined the Carbon Disclosure Project (CDP) Supply Chain



The Green Corporation Pioneer



The SDGs CHT contributes to in this section



## Response

- CHT Supplier CSR Supplier Conference
- Visit and interchange sustainable environment
- Targets low-carbon industries and promotes solar power



## Target

### Pledge to establish Science Based Targets (SBT) in 2019

### Completes 100% of the Following Targets in 2020:

- “Tier 1 suppliers” CSR current status assessment
- “Critical tier 1 suppliers” educational training of carbon management knowledge and ESG on-site audits

### Promises to Reach the Following Targets in 2023:

- The capacity for renewable energy constructed from proprietary was **750** kWp
- Taking 2017 as the base year, a **10%** reduction of greenhouse gas emissions in our buildings
- Taking 2017 as the base year to cumulatively save **10%** of the energy by 2023 pursuant to the generator room energy-saving program
- Collect the suppliers’ information on climate change and carbon emission at least once a year



## Indicator

**GRI** GRI GHG Emissions **834,513.30** t-CO<sub>2</sub>e

**CHT** A CHT photovoltaic system with a total capacity **672.025** kWp

**CHT** Implement the “Suppliers CSR second party audit” on **10** suppliers

**CHT** **97** Taiwan Renewable Energy Certificates (T-REC) acquired

## The 5G Green Enterprise

Although telecom is regarded as a low-polluting industry, Chunghwa Telecom is well aware of the environmental impacts associated with energy, resources, waste, maintenance, purchasing and other aspects of our operation. We have devised a new set of “Sustainable Environment Development Strategy and Target Plan” that outlines our overall strategy and roadmap for sustainable environmental development. In addition, budgets will be provided in each year to support action plans.



### Green Operations

- A self-developed EARTH system for **100%** control of environmental information
- Received ISO 14001/ISO 50001 certification at **all** our business locations



### Green Energy

- Self-constructed photovoltaic systems reached a total capacity of **672.025** kWp
- Acquired **97** Taiwan Renewable Energy Certificates



### Green Stores

- Transformed **469** service centers into “Green Stores”
- Promoted paperless services and accumulated a saving of **560,000,000** sheets of paper per year



### Green Supply Chain

- Became the **first** telecom carrier to promote supply chain sustainability management
- Formally incorporated the ISO 20400 Sustainable Procurement Standard.
- Participated in the CDP Supply Chain Project to expand the efficiency of carbon management



### Green Procurement

- Reached a total of NT\$ **1.487** billion in green procurement in 2018
- Reached **5%** of total procurement as green procurement every year

## The Banqiao IDC Was Awarded Two Awards at the 2018 APIGBA Awards

Chunghwa Telecom has actively responded to the government’s policy to promote renewable energy. Our solar power plant **tops** the industry in capacity, with those installed in our own facilities further excelling in scale. The Banqiao IDC was awarded the Gold Prize in Systems and Silver Prize in Design at the 2018 APIGBA Awards. Being the only participant to win two prizes, we were recognized for our persistence and hard work in pursuing environmental sustainability.



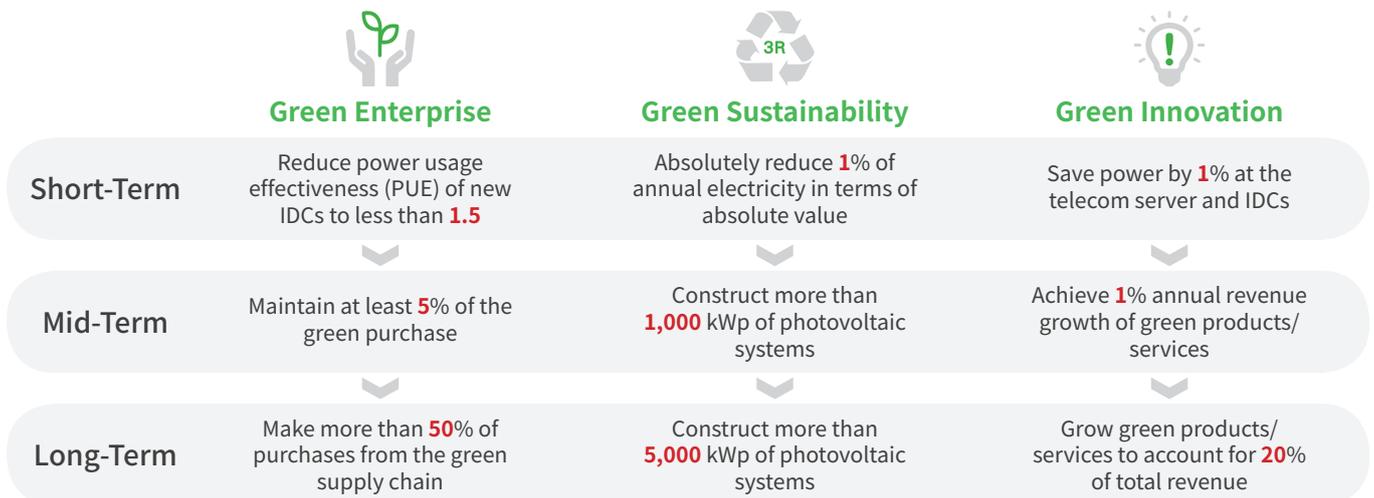
Chunghwa Telecom Banqiao IDC center is the **first** international IDC in the Greater China Region that acquired the “TIA-942 Rated 4” certification. It adopts our self-developed, integrative “Smart Home and Architecture Platform,” which includes the “Smart Architecture Platform,” “Smart Home Service,” and “Facility and Property Management.” The system, which interlocks with its subsystems, helps to create centralized monitoring and management of the sub-systems in this center. Managers on-site and users can therefore enjoy the convenience of a centralized automatic monitoring system, which keeps up with the current trends of smart architecture and helps to realize safety, health, convenience, comfort, energy-saving and sustainability goals.

## Building the Largest IDC in Taiwan

Following the establishment of the Banqiao IDC, we plan to build a new IDC in Neihu, due to demand from international technology companies. The center is expected to accommodate **7,000** server cabinets; the total investment is expected to total NT\$ **7-10** billion. This IDC will be our largest IDC in terms of server cabinet numbers as well as the largest individual IDC in Taiwan.

Chunghwa Telecom has **9** certified machine rooms and **8** well-equipped machine rooms, amounting to **17** IDC centers, which can accommodate **15,000** server cabinets. The new IDC in Neihu will be providing additional **7,000** server cabinets, increasing the current number by **46-47%**. It’ll be improving the investment environment and enhancing the competitiveness for startup companies; our future customers will mainly be industries in the fields of startups, integration, film, AI and big data.

To fulfill our green commitment and embrace the world’s green challenge, Chunghwa Telecom has adopted a “Green Enterprise, Sustainability and Innovation Strategy” with the introduction of 5G (Green) that aim to address financial success, sustainability and social responsibility.

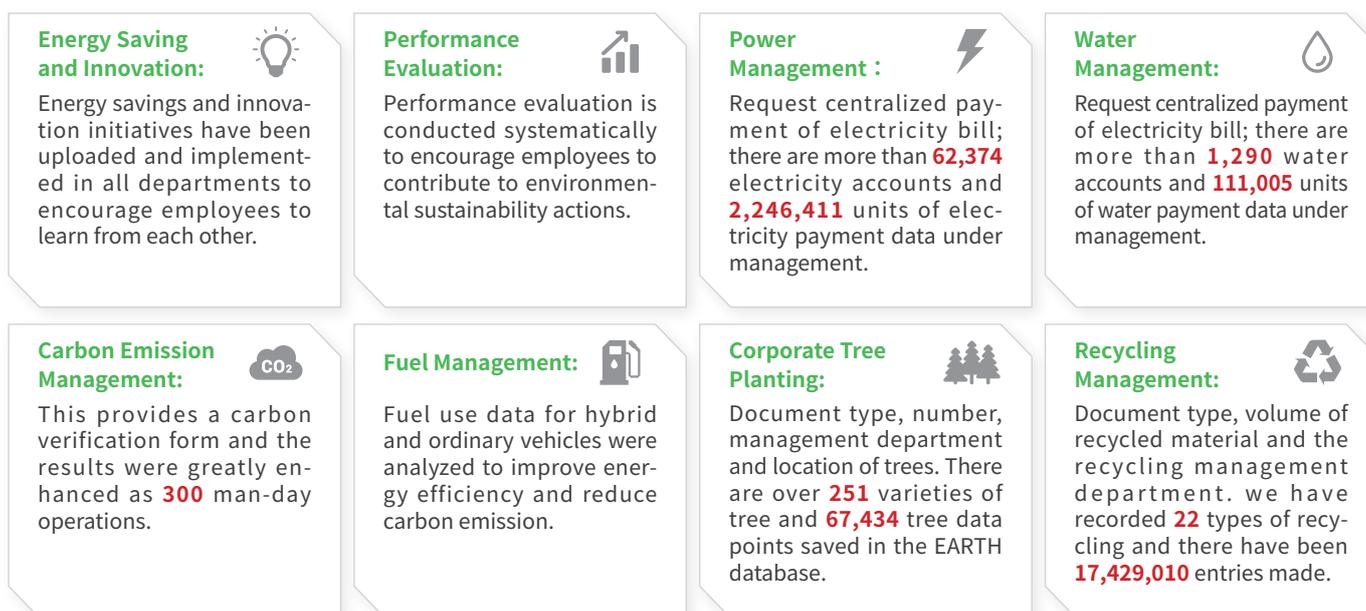


## 1G Green Operations

Chunghwa Telecom has set themselves a goal to become a sustainable “Green enterprise,” and has made environmental issues an incorporated part of business operation and management. We hope to play a more proactive role in issues such as energy and climate change. By improving energy efficiency and exploring eco-friendly products and services, we are confident of our potential to inspire a new generation of low-carbon industries.

### Environment ARTificer THEurgy (EARTH)

We developed the Environment ARTificer THEurgy (EARTH) system in 2008 to manage resources and protect the environment more efficiently as well as to reduce spending on energy consumption. EARTH system features include:



### Green Environmental Hostels

Chunghwa Telecom Hostels provide accommodation for employee business or leisure travel. In response to environmental protection and personal hygiene, the hostels do not provide disposable, or consumable items or towels. They also take energy-saving measures such as solar water heating, air conditioning using heat pumps and LED lighting. **19** hostels had been certified as Environmentally Friendly Accommodation by 2018.

### Ecotourism

Chunghwa Telecom hopes to provide eco-tours that are both educational and entertaining for our employees, so that they understand concepts of extreme weather, responsible tourism, respect for nature and the rights of local residents. We hold regular company eco-tours with the hopes of incorporating environmental education into traveling and daily life. We held **93** tours in 2018, costing a total of NT\$ **86,015** thousand with **17,959** participants.

### Environmental Management Expenses

Item	2016	2017	2018
<b>Environmental management expense (NT\$ thousand)</b>	286,734	300,722	319,637
<b>Accounted percentage of turnover (%)</b>	0.12	0.15	0.15

## 2G Green Energy

Chunghwa Telecom has been positively supporting the government policy and applying its extensive ICT background knowledge in the construction of solar power stations. By the end of 2018, the Company had **70** solar power stations around Taiwan with a total capacity of **672** kWp.

### Seizing the Opportunities of Green Energy Business

Chunghwa Telecom has sought to take advantage of the business opportunities in green energy and won the contracts for the construction of solar power plants for Taiwan Power Company, Taiwan Cement Corporation, as well as many other private companies; with said power plants reaching **150** MW in total capacity and are expected to contribute NT\$**7-8** billion to Chunghwa Telecom's solar power revenue. In 2017, we undertook Taiwan Power Company's solar power plant construction project in Changhua Coastal Park, which saw full power supply commencing at the beginning of 2019 – this has become a milestone in Chunghwa Telecom's foray in the solar power field.

We currently have two construction projects: one is commissioned by a subsidiary of Taiwan Cement Corporation and the other by Taiwan Power Company. The former entails the construction of a ground-mounted solar station with a capacity of **12** MW, and this is currently the biggest contracting project for a solar power plant taken on by a private company. The latter outsourced the first stage of the advanced metering infrastructure (AMI) to us.

The smart energy service used in conjunction with the Internet of things can both save and store energy by storing wind or solar power generated during the off-peak period. Big data analytics and billing services allow customers to use energy saved from the off-peak period during the peak period, a method that effectively allocates and saves energy, thus reducing cost.

### Electricity Consumption Analysis

Year	Total Electricity Consumption (10,000 kWh) (A)	General Consumption (10,000 kWh) (B)	Business Consumption - Meter Rate Lighting Service (10,000 kWh) (C)	Business Consumption - Flat Rate Lighting Service (10,000 kWh) (D)	Business Consumption Increment (10,000 kWh) (E)	Business Consumption Increment Rate (F)
2007	135,180	9,420	125,151	609	NA	NA
2016	140,438	109,590	24,980	5,867	-	-
2017	136,269	108,525	22,289	5,455	-3,103	-11.18%
2018	129,107	98,180	24,107	6,819	3,182	2.46%

1. The method of calculation was modified in 2016 to more efficiently present power usage.
2. General consumption: office buildings and employee dormitories; Business consumption: base stations, depot, and public telephone, which are not CHT-owned property.
3. A=B+C+D, General consumption mainly includes the power consumption of office building. Business consumption increment includes flat and meter rate lighting service.
4. E=Business consumption this year - Business consumption last year; F=E/A
5. This table presents electricity consumption with customer ID, other consumption without customer ID is covered by greenhouse gas inventory.

### Energy Savings for Data Centers

Chunghwa Telecom places great emphasis on the energy efficiency of our data centers, and is currently implementing energy conservation measures for telecom data centers (including IDCs). The efficient application of our proprietary iEN smart energy management system is our scientific approach to reducing energy, carbon emission and protection of the environment.

#### Electricity Consumption of IDCs

Year	2016	2017	2018
Power Usage (10,000 kWh)	15,210	16,065	16,440

#### Renewable energy usage in IDC in Banqiao

C=A/(A+B)

Year	2017	2018
A: Solar power generation (kWh)	84,842	95,624
B: Total power consumption (kWh)	13,082,000	21,411,200
C: Energy-saving rate	0.64%	0.44%

## Water Resource Management

Water usage at Chunghwa Telecom is mostly domestic. Apart from bathroom use, air conditioner cooling accounts for another major water use. Given the ongoing increase in business activities and manpower, there is limited room for water reduction besides the recovery of rainwater and cooling water.

We benchmarked the 2012 water usage as the standard, and now control the annual growth of water usage to no more than 2%. In addition to a new water leakage detection feature in products, we have also included Company water consumption in the EARTH system. Centralized water bill payment is done through the EARTH “water bill management” function to reduce the printing of water bills. Managers can use the system to search, generate trend charts and report forms, and provide exception reports to avoid mistakes in billing and meter reading. Managers can also review the situation of water usage according to trend charts and reports, reduce expenses in water, and improve the efficiency of management.

The management and analysis information interface can be used to promote water conservation measures and set concrete management goals. We also promote water-saving measures to increase efficiency in water use:

1. Install sink faucet sprayers to reduce waste
2. Install dual flush toilets to reduce waste
3. Use collected rainwater for watering office plants
4. Encourage the installation of water reclamation equipment in new buildings, so that physically separated and treated sewage water can be reused for non-potable purposes after it has reached a certain quality standard

## Recycling of Water Resource

Unit: metric ton

Year	2016	2017	2018
Tap water	721,476	776,377	753,023
Air-conditioner water	1,758,145	1,742,680	1,624,419
Recycled water	14,087	7,614	7,398

Starting from 2018, the amount of resource and energy consumed by Honghwa International in its rented areas are excluded.

To enhance the effectiveness of water recycling and reuse, we have set up raft foundation water collection systems underground to collect clean rainwater from rooftops and the ground surface. We have also initiated the recycling of cooled and condensed water from office air-conditioners and promoted a recycling and reuse plan for rainwater, bathwater and air conditioner water. The recycled water is reused for watering plants and cleaning sidewalks.

## Water Footprint

To keep track of water risks at Chunghwa Telecom and to respond to Goal 6 “Clean water and sanitation” of the United Nations Sustainable Development Goals, we’ve implemented the Water Footprint Project, and plan to exam the water footprint in Banqiao IDC machine rooms in 2019, becoming certified for SGS-Taiwan ISO 14046. Expected benefits include:

1. Established strategies for water management: effectively manage water resources through establishing a standard operating procedure concerning our water footprint.
2. Strengthened water consumption management: through the implementation of a water footprint inventory, we can effectively keep track of the virtual water distribution inside our company, which allows us to establish a sound water management system as well as come up with appropriate measures to achieve the goal of water conservation.



## Waste Management

Chunghwa Telecom understands the importance of resources reduction, recycling and reuse and has combined a five-year environmental sustainability development plan with the EARTH system. This is used to manage the use of resources and control energy efficiency, as well as to conduct systematic management of recyclables and waste treatment. We contracted a professional waste treatment company to transport our daily waste to landfills or incinerators for disposal. Recyclable waste is handled by a contracted cleaning company that is responsible for classification, treatment and proper disposal.

Unit: metric ton

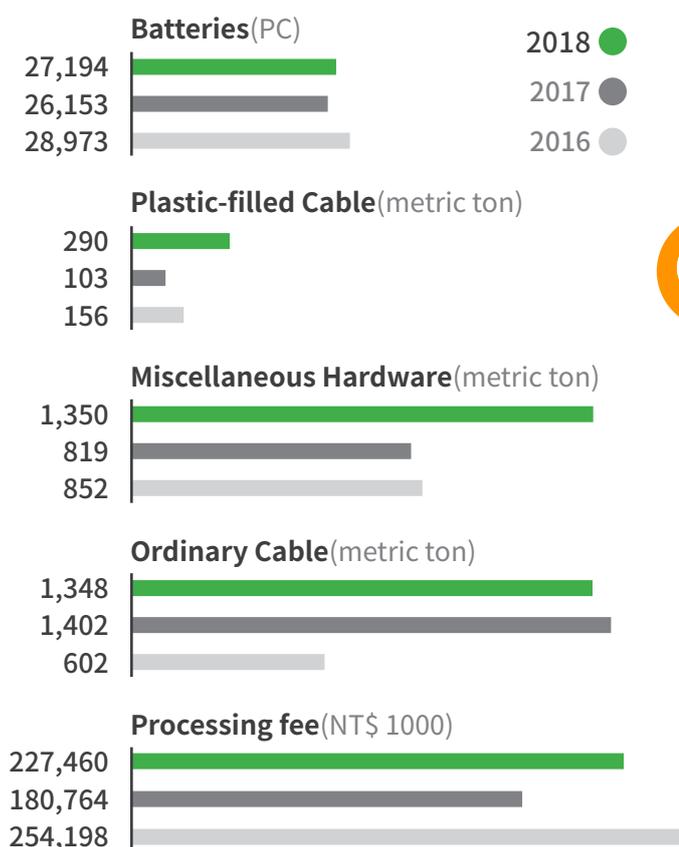
Year	2016	2017	2018
Weight of daily waste	4,706	4,389	3,505

Starting from 2018, the amount of resources and energy consumed by Honghwa International in its rented areas are excluded.

## Industrial Waste

Scrapped lead-acid batteries are recyclable industrial waste regulated by the EPA. Business organizations are responsible for the reduction of pollution, disposal of toxic substances and simple waste disposal. All recycling and disposal operations are outsourced by joint contract based on the public auction. The contractor must be a qualified service provider listed on the website of the Recycling Fund Management Board of the EPA to ensure legitimate management and disposal and to reduce environmental impact.

Scrapped lead-acid batteries from each business unit are auctioned on site, and the “Announcement and Delivery Slip for Removal and Disposal of Waste Lead-Acid Batteries” is retained for reference. The gradual rise in raw material prices has also caused the recycling and reuse value of scrapped lead-acid batteries to increase. A total of **50,963** lead-acid batteries with a total weight of **3,294,691** kg were scrapped and sold for NT\$ **58,816** thousand in 2018. In fulfilling our responsibility for environmental protection, we also increased Company revenue. The public and private waste clearance and disposal companies recognized by environmental institutions are designated to handle the treatment of other industrial waste such as cables and miscellaneous hardware.



## 3G Green Stores

Chunghwa Telecom is a highly-localized telecom carrier, a generous contributor to community development, and one of the most important partners to other telecom carriers around the world. As technologies progressed and improved, we began some operations that were outside the conventional telecom boundaries, “corporate social responsibility” concepts were introduced into products and services research, development, applications, and into the Company management strategies.

### Green Revenue

In addition to developing products that are friendly to the environment, we have been promoting Green Stores and were the **first** telecom carrier in Taiwan to fully turn service centers into Green Stores. Customers are encouraged to purchase green products from our “Chunghwa Telecom Green Stores.” In 2018, green revenue was NT\$ **803.9** million, which was **0.48%** of the total revenue.

### Good Results in Cross-Industry Marketing

The Company has had a cross-industry alliance with China Motors since 2016 to promote the “e-Moving electric vehicle/bicycle” preferential plan at all branches. All Chunghwa Telecom indoor phone or broadband customers can select and purchase e-moving products at the direct branches. By 2018 we had sold **1,371** e-moving vehicles and sales performance in cross-industry marketing was good.

### Paperless Receipt Service

We have been promoting the use of electronic billing since 2001 to conserve energy, and reduce carbon emission by eliminating the use of paper for bills. In 2017, we offered the “paperless receipt service” to satisfy customer need and also contribute to a reduction of global warming. As of the end of 2018, the percentage of paperless receipts exceeded **68%**. The service saved **568** million sheets of paper and an estimated **50,973** trees, it had also reduced carbon emission by **10,093** metric tons by the end of 2018.

Year	2016	2017	2018
Number of customers applying for e-bills	1,394	1,609	1,869
Ratio of customers applying for e-bills	52%	59%	68%
Quantity of paper saved (1,000 sheets)	418,300	482,630	560,700
Number of trees saved	38,027	43,876	50,973
Reduction of carbon emission volume (metric ton)	7,592	8,678	10,093

1. From 2017 onwards, the calculation is based on the quantity of paper saved and reduction of carbon emission by the use of e-bills, combined bills and paperless receipts.
2. The elimination of each bill saves 2.5 sheets of printed A4 paper and an envelope. Total amount of paper saved: the quantity of paper saved (thousand) × 2.5 × 12 (month)
3. One sheet of A4 paper generates 18 grams of CO<sub>2</sub>; the amount of carbon emission reduced: the quantity of paper saved (1,000 sheets) × 18 grams
4. The number of trees saved: For each ton of paper pulp produced, 20 trees are felled; one ton of paper pulp produces 220 thousand sheets of A4 paper. Therefore, the number of trees saved = the quantity of paper saved ÷ 22 × 20.

### Chunghwa Telecom’s Text Billing

Since the second half of 2018, we’ve implemented the SMS billing system, where customers can pay or view their bills anywhere and at any time by verifying their identity through the use of one-time passwords (OTP) or their ID cards; this convenient and eco-friendly service has garnered praise from almost **2** million users.

The verifying process through use of an ID card can be done by verifying their ID number, which allows users to easily acquire a barcode for the account they’d like to pay for; having acquired the barcode, they can pay at any of our service locations, and also include Senao International, 7-11, FamilyMart, Hi-Life, and OK Mart, simply by presenting the barcode. If it isn’t convenient for a user to visit such a location, he or she can tap on “Amount Due” on the barcode page and proceed with the payment online.

## 4G Green Supply Chain

The responsibilities and mission of Chunghwa Telecom, as the leader of the telecom industry are “Green of ICT and Green by ICT.” This implies facilitation of the greenness of the ICT industry (Green of ICT) and overall greenness of society through ICT (Green by ICT). From 2008 onwards, Chunghwa Telecom developed measures year by year to improve the sustainability of the supply chain, and in 2018 we accomplished two pioneering achievements:



**We were the first telecom company to propose the “Sustainable Supply Chain Initiative,”**

effectively connecting with internationally prominent sustainability organizations and partners, also connecting the supply chain to respond to the United Nations Sustainable Development Goals (SDGs).

**We were first in the industry to join the “CDP Supply Chain Project”**

to strengthen, integrate and analyze greenhouse gas emission by suppliers using the CDP platform to ensure carbon management information transparency in the Chunghwa Telecom supply chain. We invited 100 suppliers to participate in an international platform to submit carbon management information and improve their ability in managing carbon emissions with scientific and quantification mechanisms.

Future green supply chains will entail more than just supplier commitment to environmental protection and the life cycle of green products. Chunghwa Telecom will continue to explore value-added applications of ICT, and introduce robust systems to facilitate better coordination and management, as well as complete monitoring of the supply chain.

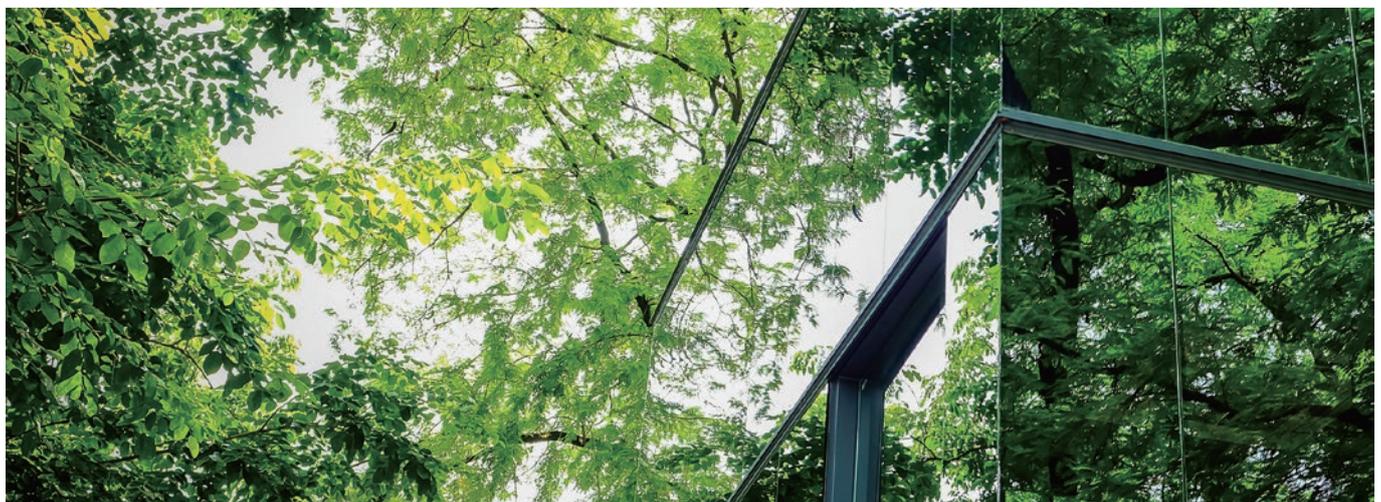
## 5G Green Procurement

Chunghwa Telecom supports government policy and prepares annual budgets for the purchase of green products that are either environmental-certified (less polluting, recyclable, resource-saving or green building material) or self-declared to be of less environmental impact throughout the product lifecycle (from raw material to disposal). The Company also actively participates in green procurement programs and activities to inspire green purchases amongst others in the industry and the public.

Our goals and policies concerning green procurement have been explained in detail in the five-year plan mentioned above. We hope to maintain green purchases at more than 5% of the total purchases per year over the mid-term, and increase this percentage to more than 50% over the long term. To achieve this goal, we incorporated the ISO 20400 Sustainable Procurement Standard at the end of 2018. The implementation of the ISO management system helped reinforce the idea of green procurement.

Year	2016	2017	2018
<b>Green procurement total (NT\$ million)</b>	1,379	1,223	1,487
<b>Accounted percentage of total procurement</b>	5.62%	4.45%	3.36 %

For more information about Green Supply Chain and Green Procurement, please refer to p.102-107.



## 2018 Environmental Performance

Item	Description
 <p><b>Environmental Information Disclosures</b></p>	<ul style="list-style-type: none"> <li>Published CSR reports and the disclosure of environmental data to respond to the Dow Jones Sustainability Index (DJSI) every year.</li> <li>Execution of an annual greenhouse gas inventory and acquisition of ISO 14064-1 verification and certifications.</li> <li>Responded to the annual Carbon Disclosure Project (CDP) questionnaire.</li> <li>Responded to related national rating questionnaires (including Common Wealth and Global View Magazines).</li> <li>Signed on as a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) initiative.</li> </ul>
 <p><b>Improve Energy Use Efficiency</b></p>	<ul style="list-style-type: none"> <li>Merged and exploited data center spaces.</li> <li>Saved cooling energy: implemented some energy saving with <b>6,186</b> HP inverter module, sensible heat air conditioners of <b>34,513</b> RT, <b>9,902</b> highly efficient air conditioners, <b>2,808</b> RT ventilation air conditioners and <b>689</b> natural ventilation air conditioners by the end of 2018.</li> <li>Used green materials for newly constructed data centers and buildings.</li> <li>Set up rainwater, underground, and condensed cooling water recycling systems for the reuse of water resources.</li> <li>Replaced lamps in the public areas and internal office buildings with environmentally friendly LED bulbs.</li> </ul>
 <p><b>Implement Green Energy</b></p>	<ul style="list-style-type: none"> <li>Constructed more than <b>672</b> kWp of photovoltaic systems by the end of 2018.</li> <li>Constructed a total capacity of <b>12.6</b> kW wind power plan.</li> <li>Acquired <b>97</b> Taiwan Renewable Energy Certificate.</li> </ul>
 <p><b>Autonomous Environmental Protection</b></p>	<ul style="list-style-type: none"> <li>Replaced old vehicles with environmentally friendly ones, and used electric vehicles in trials.</li> <li>Sponsored the construction of the YouBike station at the corner of Xinyi Road and Hangzhou South Road.</li> <li>Promoted clean homes, energy-saving offices, car-free days, and paperless Office Document Automation System (ODAS).</li> <li>The Taiwan Energy Conservation Patrol: focus is on increasing energy efficiency within small and medium enterprises and vulnerable social institutions.</li> <li>Set waste reduction and recycling goals.</li> </ul>
 <p><b>Value-Added Products and Services</b></p>	<ul style="list-style-type: none"> <li>Promoted e-bill with a marketing section.</li> <li>Electronic invoicing: invoice data were prepared for permanent cloud storage to save material, human resources, and receive preferential tax treatment as an incentive and exemption from fines by the government.</li> <li>iEN smart energy-saving services and promotion of <b>8</b> energy-saving products.</li> <li>Mobile device recycling: recycle bins are available at all service centers in line with the promotion of waste recycling.</li> <li>Green Stores: transform <b>469</b> service centers nationwide into “Green Stores,” and sell <b>3</b> or more environmentally certified products.</li> <li>Assisted suppliers with applications for eco-friendly product labels on their mobile</li> <li>Communication products: Provided the related necessary information to suppliers for eco-friendly product labels.</li> </ul>

# Sustainable Supply Chain

Every year Chunghwa Telecom purchases the software, hardware and services necessary for operations from international and domestic suppliers. This includes networking and data equipment, cables, marketing, design and waste disposal services. Our enormous purchasing power gives us a profound influence over the supply chain, hence the responsibility to guide our suppliers in the fulfillment of their CSR. This is achieved by implementing conduct that complies with the international ESG supply chain regulations to guide the ICT industry towards sustainability.

We were the **first** telecom enterprise in Taiwan to join the CDP Supply Chain Project in 2017 when the industry was confronted by the critical issues of global climate change and its effect on corporate development. In 2018, we again became the **first** telecom company to incorporate the ISO 20400 Sustainable Procurement Standard. We strive to establish a better connection to the world on our path towards the development of sustainability.

From earlier on we have encouraged suppliers to disclose their carbon emissions and reduce them gradually. We plan to incorporate “low-carbon emissions” into our tender regulations: only groups with carbon emissions under a certain level can participate in our tendering process. Through sustainable planning, supplier evaluation and a green supply chain constructed on a hierarchical management system, we hope to achieve the following goals of sustainability: environmental protection, effective operations and management, robust labor rights, as well as safety and sanitation.

## CHT’s Sustainable Supply Chain Initiative—Sustainable Partner Certification

Chunghwa Telecom upholds its company motto and its mission as a Digital Economy Motivator and a Creative Industry Pilot, formally adopting the ISO 20400 Sustainable Procurement Standard to evaluate our suppliers’ performance in sustainability. We’ve finished planning for the “Sustainable Partner Certification,” which consists of 4 tiers, “Gold, Silver, Bronze and Participation.” We examine suppliers’ SGS second party audit results based on their type and level of importance, and rate them accordingly. If a supplier fails to pass the certification process, it is granted a limited period of time to implement corrective measures. Rated suppliers shall receive a mark that corresponds to their rating, and this mark will be seen as favorable when submitting a tender.

We hope to compile a “Chunghwa Telecom Sustainable Supply Chain” list through evaluation, training, audit and certification; we’d also like to lead our suppliers toward a sustainable future, improve the sustainability of telecom companies, business, and society as a whole, as well as keep abreast with the international trends of low-carbon economy.



## ESG Management Supply Chain Strategy

Strategy	Management Target	2018 Result
Integrate ESG Principles to Chungghwa telecom supplier assessment	<ul style="list-style-type: none"> <li>Complete <b>100%</b> of “tier 1 suppliers” CSR current status assessment in 2020</li> </ul>	<ul style="list-style-type: none"> <li><b>100%</b> of suppliers completed the CSR survey questionnaire</li> </ul>
Ensure ESG conduct of the suppliers complies with “Code of Corporate Social Responsibility for Suppliers of Chungghwa Telecom Co Ltd.”	<ul style="list-style-type: none"> <li>Complete <b>100%</b> of “critical tier 1 suppliers” ESG on-site visits and audits in 2023</li> </ul>	<ul style="list-style-type: none"> <li>CSR on-site visits and audit rate reached <b>97.26%</b></li> </ul>
Continue communication activities to promote supplier climate change adaptation measures and emissions data management	<ul style="list-style-type: none"> <li>Complete <b>100%</b> of “critical tier 1 suppliers” carbon management knowledge, and education in 2020</li> <li>Collect information on climate change and carbon emission from suppliers at least once a year.</li> <li>The number of suppliers who respond to Chungghwa Telecom’s CDP Supply Chain Project questionnaire reaches <b>200</b></li> </ul>	<ul style="list-style-type: none"> <li>The <b>first</b> Taiwan telecom carrier to participate in the CDP Supply Chain Project</li> <li>The suppliers’ response rate to the questionnaire was <b>66%</b></li> </ul>

The Chungghwa Telecom suppliers fall into three categories: property, labor and engineering. Apart from professional network communications equipment which is mainly purchased overseas, we buy as much from local suppliers as possible to promote local economic development. The domestic procurement percentage was **90%** in 2018. Our target is to reach **95%** by 2023.

### Chungghwa Telecom Procurement Status



We promote corporate social responsibilities on two levels. (1) For new suppliers just starting to learn about corporate social responsibilities, we offer encouragement, education and support during their development of the proper awareness for CSR. (2) For established suppliers who are fully aware of the need for CSR, we conduct third-party audits, issue online CSR questionnaires, organize conferences, and launch sustainability campaigns as means to engage them in a winning relationship.

### Suppliers Analysis

Item	Number of Suppliers	Accounted Percentage of Turnover (%)
Tier 1 suppliers	1,408	98.54%
Critical tier 1 suppliers	143	85.86%
Critical non-tier 1 suppliers	28	-

- Tier 1 suppliers are those that provide products or services directly to Chungghwa Telecom with an annual procurement of  $\geq$  NT\$ 100 thousand.
- Critical tier 1 suppliers are those that provide products or services directly to Chungghwa Telecom with an annual procurement of  $\geq$  NT\$ 50 million.
- Critical non-tier 1 suppliers are those that provide critical products and services to CHT tier 1 suppliers, but are not CHT tier 1 suppliers.

## Overview of the Supply Chain ESG Management Results

Item	Description	2018 Target	2018 Result	2019 Target
<b>Online Supplier CSR Status Questionnaire (%)</b>	Require suppliers with purchase amounts of more than NT\$5 million to fill in the “Supplier CSR Status Questionnaire,” items include: Corporate Ethics, Labor, Environment, Occupational Health & Safety	88%	89%	90 %
<b>CHT’s procurement staff subjected to CSR-related training (%)</b>	Actions have been taken to ensure that all procurement personnel understand and comply strictly with “Code of Corporate Social Responsibility for Suppliers of Chunghwa Telecom Co Ltd.”	100%	100%	100%
<b>CHT suppliers bound by contracts with CSR-related terms (%)</b>	All procurement contracts specifically require suppliers to comply with “Code of Corporate Social Responsibility for Suppliers of Chunghwa Telecom Co Ltd.”	100%	100%	100%
<b>Include the “CSR self-assessment form for suppliers” in the required documentation for the tendering process</b>	All procurement documents require suppliers to fill out the “CSR self-assessment form for suppliers.” Suppliers are required to present an explanation on corrective measures in the case of any legal violation	100%	100%	100%
<b>Suppliers without violations against environmental protection laws (%)</b>	Learn about supplier environmental management practices through online questionnaires	98%	100 %	100%
<b>Supplier CSR second party audits</b>	Use supplier CSR second party audits to ensure that none of its critical suppliers are prone to environmental, forced labor or human rights risks.	100%	100%	100%
<b>Audits on civil engineering/cable contractors</b>	A total of <b>204</b> audits were conducted on <b>78</b> contractors. At the end of 2018, 33 suppliers were found to have committed violations. They were fined NT\$ 880,712 thousand.			
<b>Safety and health on-site inspections</b>	The Northern and Southern Taiwan Business Groups and the Mobile Business Group all have health and safety officers assigned to inspect suppliers on-site at least three times a week. Any defects discovered were notified to the relevant departments and followed up for improvements. A total of <b>8,317</b> inspections were conducted on <b>404</b> suppliers in 2018.			

## Mutual Benefits with Business Partners

We published “Code of Corporate Social Responsibility for Suppliers of Chunghwa Telecom Co Ltd” in 2011, and it clearly outlines the Company’s expectations in terms of “business, ethics, labor, environment, safety, and health.” The guidelines apply to all suppliers that provide products or services to Chunghwa Telecom or its subsidiaries or joint ventures, and extend to other participants of the supply chain to which the supplier is directly or indirectly related. We hope that suppliers will commit to our values and take more proactive steps towards maintaining a sustainable business relationship.

CHT shares resources with suppliers to help them develop R&D capabilities and future technologies. We also devote ourselves to the creation of a friendly and innovative environment. We engage suppliers in R&D projects, reward their contributions, and make arrangements for the transfer of acquired technology and licenses fairly. Regarding hardware, we continue to support the development of telecom facilities and testing environments; in terms of software, we utilize open platforms to share our benefits with suppliers.

Type	Description
Rewards top-performing suppliers	To reward top-performing suppliers, Chunghwa Telecom conducted a trial in southern Taiwan, offering qualified suppliers the privilege of “tender bond waiver when submitting tenders, as well as a reduction of the performance bond to 5% of the value of the contract won.” This was an attempt to exert influence as an industry leader and bring more attention to corporate social responsibility.
Training of professional skills	Our Telecom Training Institute has been providing suppliers with relevant training and certification courses to satisfy their requirements. Some of the popular courses include: cabling contractor certification, telecom line construction quality assurance certification, and fiber optic contractor training. In 2018, the institute organized <b>34</b> classes and trained <b>738</b> workers; <b>318</b> of whom had obtained certification.



## CSR On-Site Audits and Capacity Promotion

To promote awareness of CSR and ESG management in supply chain partners, SGS-Taiwan has been subject to tier 1 supplier on-site audits since 2010 in accordance with ESG supply chain principles drafted by Chunghwa Telecom. Their existing occupational safety and health provisions resulted in an on-site audit rate of **97.26%** in 2018.

We have planned to increase the number of suppliers that receive the SGS-Taiwan on-site audit to **20** and to add a review session. We have undertaken to insist on an audit rate of **100%** in our critical tier 1 supplier ESG on-site audits so that all our supply chain partners will be in compliance with ESG management requirements before 2023. Our goal is to complete the sustainability classification of **170** suppliers and issue the certification mark by 2025.

CHT Management Indicator	Method	Ratio
Supplier ESG auditing ration per year	Occupational safety and health on-site audits	28.69 %
Percentage of suppliers assessed in ESG in the last 3 years	Second party audits+ engineering / cable audits	Critical tier 1 suppliers + Critical non-tier 1 suppliers <b>68.57 %</b>

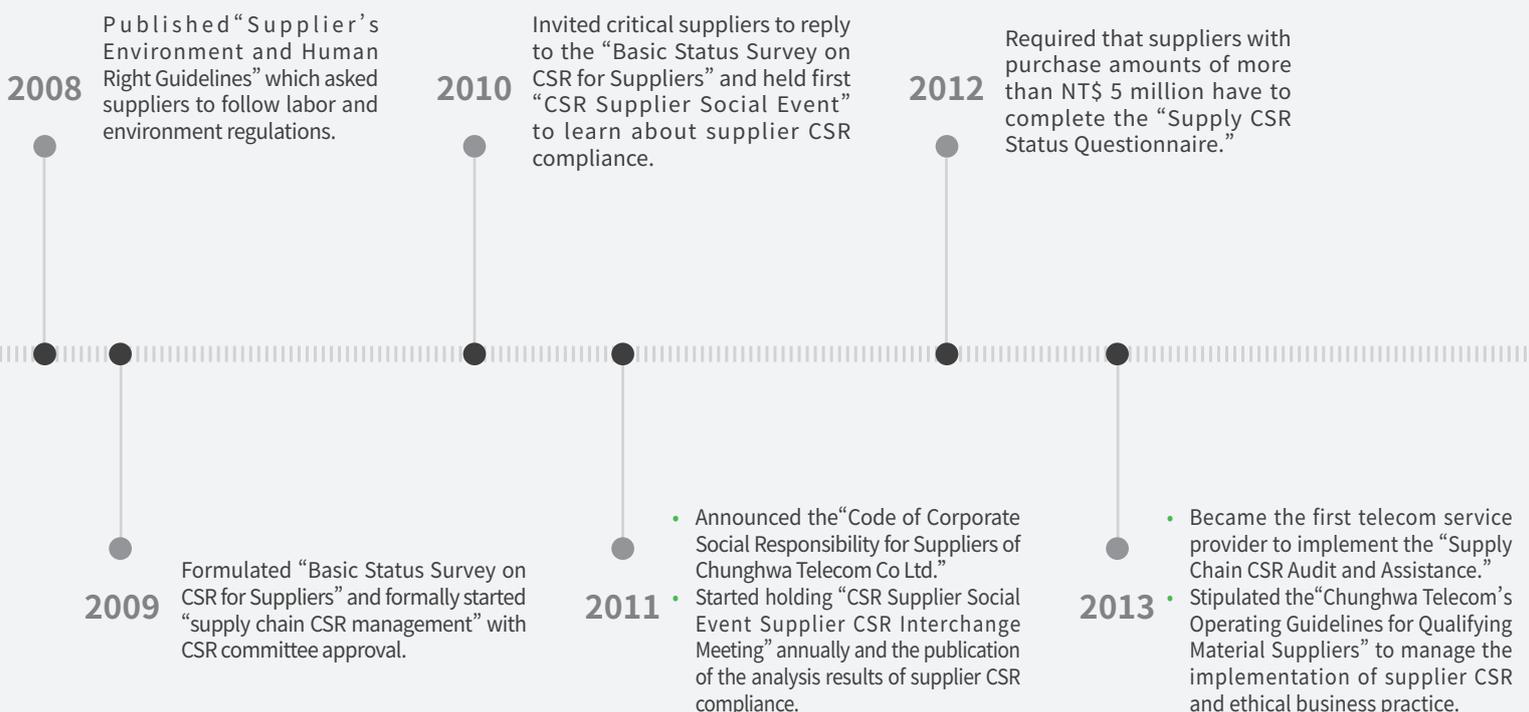
## The Guidance of Supply Chain Partners in a Response to Climate Change

After “The Paris Agreement” took effect, we entered an age of low-carbon economy. Chunghwa Telecom is a carrier in the information and communications industry, and this is a crucial issue of great urgency. We need to understand and respond to the impact of climate change and plan appropriate response strategies and actions at once.

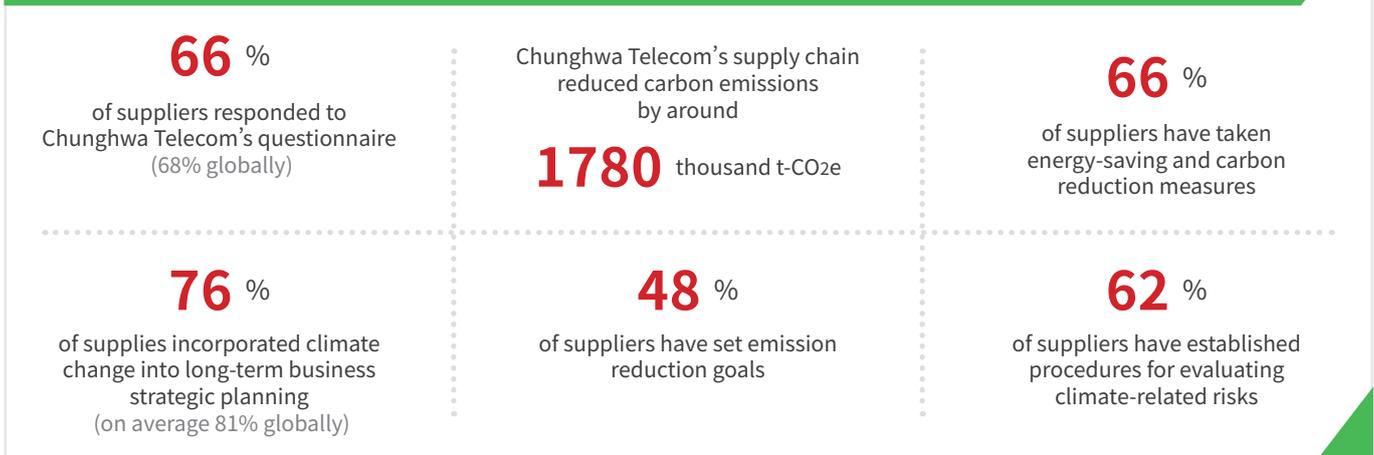
We made Climate Change the main theme of our supplier CSR Interchange Meeting in 2017. We invited a CDP representative and people from advanced domestic enterprises with forward-looking carbon management to share how to identify risks and opportunities brought by the climate change issue. We also formally activated and announced our membership of the “Carbon Disclosure Project (CDP) Supply Chain Project.” We are promoting an understanding of climate change among our suppliers and will make every effort to increase their efficiency in carbon management. CHT is putting an encouragement mechanism in place that will help suppliers with the research and development of products and services that have less impact on climate and the environment. Our three goals for the supply chain carbon management are:

1. Increase supplier awareness and knowledge of climate change
2. Collect greenhouse gas emission information
3. Communicate and encourage changes in the behavior of suppliers

## Supply Chain Sustainable Low-Carbon Management

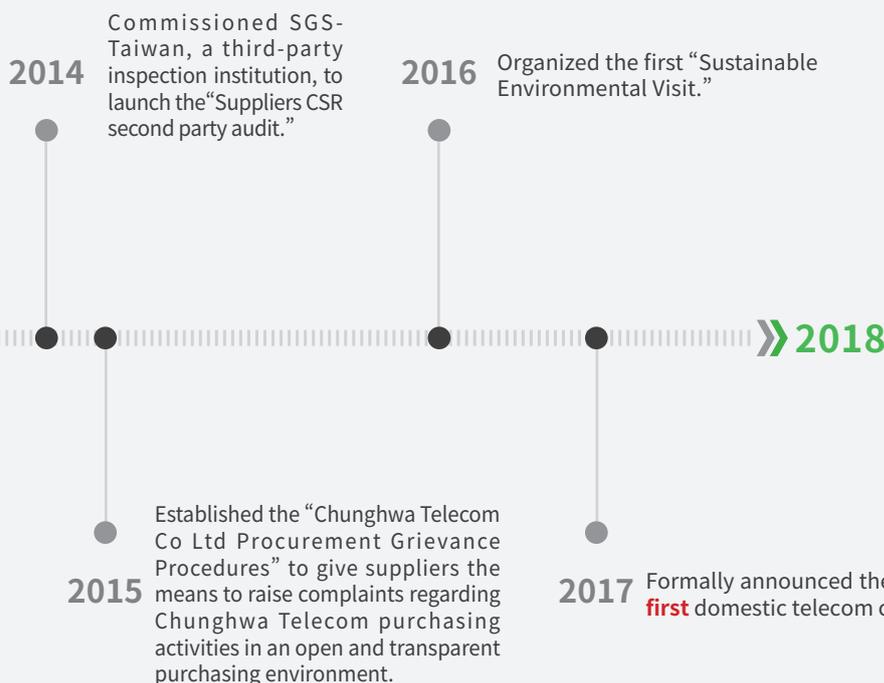


## Abstract of the Results of Chunghwa Telecom’s 2018 “CDP Supply Chain Project”



## The Achievements of CHT’s 2018 Supplier Energy Conservation Project

Types of Projects	The Amount of Carbon Emissions Reduced (kg-CO <sub>2</sub> e)	Estimated Amount of Money Saved Each Year (NT\$)
Energy efficiency: construction material	29,061	128,431
Energy efficiency: construction service	83,288	17,098,364
Energy efficiency: manufacturing process	21,914	2,533,336.42
Establishment/installation of a low-carbon energy source	128.9	338.73
Procurement of low-carbon energy	1,614,264	1,000,000
Reduction of carbon emissions during the manufacturing process	7,468	1,070,360
Miscellaneous	21,933	67,221,359.35
<b>Total</b>	<b>1,778,056.86</b>	<b>89,100,000</b>



- Continued to organize “Supplier Sustainability Exchange and Sustainable Facility Visits” and participate in the “CDP Supply Chain Project”
- Continued to carry out “CSR second party audit” on key suppliers; planned to increase the number of suppliers that receive the SGS-Taiwan onsite audit to **20**, and added a review session.
- Formal incorporation of the ISO 20400 Sustainable Procurement Standard
- Collaborated with the Sustainable Alliance for Low-carbon Economy (SALE) to classify sustainable products and service and incorporated “Sustainable Partner” assessment mechanism, which consists of four tiers: Gold, Silver, Bronze and Participation. We were the **first** telecom company in Taiwan to implement Sustainable Partner Certification.



## Strategy

- Minimize the digital divide and create digital opportunities



## Management

- The LBG assessment of investment in the community
- Social Return on Investment (SROI) calculation

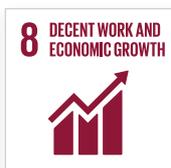
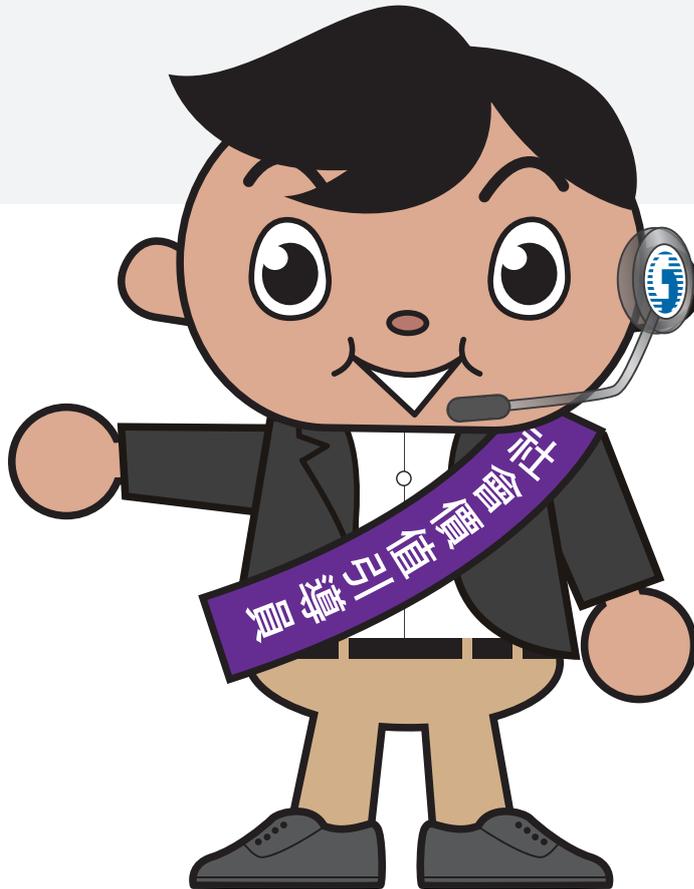


## Action

- 5I SDGs digital inclusion initiative
- Telecom universal service
- Digital Good Neighbors
- “Read with You” – Community Network Tutoring



The Social Value Guide



The SDGs CHT contributes to in this section

# R

## Response

- Training volunteers for the visually impaired
- Corporate volunteer action

# T

## Target

### Short-Term

Effort to make telecom services more accessible by adding locations to the Digital Good Neighbors program

### Mid-and Long-Term

- Social investment will reach **1%** of revenues by 2025
- To support the installation of access points for large-scale national festivals or sporting events that provide **10** million tourists with a high-quality internet service every year
- The Chunghwa Telecom Foundation funds NT\$ **36** million in the creation of digital opportunities in local communities

# I

## Indicator

- GRI** Social investment: NT\$**815,389** thousand
- GRI** Telecom subsidy for underprivileged groups: NT\$ **137,865** thousand
- CHT** Digital Good Neighbors: **85** locations
- CHT** SROI of “Click · Taiwan” NT\$ **3.04**

## Chunghwa Telecom “5I SDGs” Initiative

As the pilot of CSR, Chunghwa Telecom has developed its core competence to positively minimize the digital divide and devote itself to the creation of digital opportunities. Since 2015, we have chosen to connect with the 2030 Sustainable Development Goals (SDGs) of the United Nations. Through real action we have demonstrated our determination to develop and implement global sustainability.

In 2017, we promoted the “5I SDGs” initiative: “I Helping, I Sharing, I Learning, I Technology and I Protecting,” as the **first** real initiative in Taiwan that connects Sustainable Development Goals (SDGs) with the “Digital Country Innovative Economy Development Program” (DIGI+) from the Executive Yuan. Expanding partnerships in collaboration with NPO/NGO, helped us support the sharing of knowledge and technology resources. This enabled us to create a connection between the underprivileged and other diverse groups in this digital era. Technology allows us to link to the good cycle and realize a win-win situation for digital human rights and an innovative economy at the same time.

### Spirit

Win-win-win is beneficial to the implementation of CSR; beneficial to the digital economy and beneficial to global sustainability development by connection with SDGs.

### Vision

To construct a digital inclusion society, we use ICT technology as an instrument and corporate volunteers as the point to go deep into Taiwan communities to promote and popularize establishments. We also increase social innovation and information equality through R&D innovation and actual practices as well.

### Goal

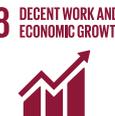
Using service popularization, ICT technology R&D and corporate volunteers, we will complete the following goals:

- To promote and popularize service establishments and provide accessible and sufficient service support
- Cultivate digital information literacy in all groups
- R&D or purchase information assistance measures for the underprivileged

## I Protecting—Eco-Service Group in Local Communities

The CHT Eco-Service Group was established in 2018. Their volunteer members are specialized in fields such as electrical engineering, air conditioning, and illumination; moreover, they’re equipped with innovation and integration capabilities in information and communications technology. They not only share their experiences in voluntary energy conservation and emission reduction with the public, but also provide government agencies and communities in need with free electricity and air conditioning evaluation and inspection services so as to improve the efficiency of energy use and extend the service life of related equipment. In 2018, the Eco-Service Group was mobilized twice to perform energy efficiency diagnostics at Kung Nan San Village in Taipei and Tien Chiao Community in Keelung. In addition to echoing the Environmental Protection Administration’s policy of “Low-Carbon Communities and Energy-Saving Services” these highly efficient energy-saving measures also reduce electricity bills, thus aiding in reaching the “I Protecting” goals contained in the “5I SDGs” initiative!



UN SDGs	Targets	5I	Corporate Volunteers Action
 <p><b>1 NO POVERTY</b></p>	<ul style="list-style-type: none"> <li>By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day</li> <li>By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters</li> </ul>	I Sharing	<ul style="list-style-type: none"> <li>Economic support in remote areas</li> <li>Sustainable local traveling</li> <li>Ecology tours</li> <li>IoT disaster prevention</li> </ul>
 <p><b>2 ZERO HUNGER</b></p>	<ul style="list-style-type: none"> <li>By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round</li> <li>By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment</li> </ul>	I Sharing	<ul style="list-style-type: none"> <li>Economy support in remote areas</li> </ul>
 <p><b>3 GOOD HEALTH AND WELL-BEING</b></p>	<ul style="list-style-type: none"> <li>Strengthen the prevention and treatment of substance abuse</li> <li>By 2030, halve the number of global deaths and injuries from road traffic accidents</li> <li>By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes</li> <li>By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</li> </ul>	I Sharing	<ul style="list-style-type: none"> <li>Corporate volunteers of Digital Good Neighbors promote sex education, the prevention of drug abuse, AIDS, alcoholism, and reduction of the death and injury rate of road accidents</li> </ul>
 <p><b>4 QUALITY EDUCATION</b></p>	<ul style="list-style-type: none"> <li>By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education</li> <li>By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development</li> </ul>	I Programming I Learning I Helping	<ul style="list-style-type: none"> <li>Online distance tutoring</li> <li>Cultural preservation of indigenous people</li> <li>PC teaching for the visually impaired</li> <li>Social innovation service</li> <li>Scholarships</li> </ul>
 <p><b>6 CLEAN WATER AND SANITATION</b></p>	<ul style="list-style-type: none"> <li>By 2030, achieve universal and equitable access to safe and affordable drinking water for all</li> <li>By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally</li> <li>By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity</li> </ul>	I Protecting	<ul style="list-style-type: none"> <li>Environmental education promotion</li> <li>Sewage water re-usage</li> <li>Mountains, forests, wetlands and rivers adoption near business locations</li> </ul>
 <p><b>7 AFFORDABLE AND CLEAN ENERGY</b></p>	<ul style="list-style-type: none"> <li>By 2030, ensure universal access to affordable, reliable and modern energy services</li> <li>By 2030, increase substantially the share of renewable energy in the global energy mix</li> </ul>	I Protecting	<ul style="list-style-type: none"> <li>Establishment of Renewable energy sources</li> </ul>
 <p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p>	<ul style="list-style-type: none"> <li>Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services</li> <li>Protect labour rights and promote safe and secure working environments for all workers, including migrant workers and eradicate forced labour</li> <li>By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products</li> </ul>	I Protecting	<ul style="list-style-type: none"> <li>Support of social enterprise</li> <li>Protection of labor rights</li> <li>Sustainable local travel</li> <li>Volunteer ecology tour guide</li> </ul>

UN SDGs	Targets	5I	Corporate Volunteers Action
<p><b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> 	<ul style="list-style-type: none"> <li>Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all</li> <li>Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020</li> </ul>	I Sharing	<ul style="list-style-type: none"> <li>Co-constructed base stations, popularized service applications after the construction of the hardware facility</li> </ul>
<p><b>10</b> REDUCED INEQUALITIES</p> 	<ul style="list-style-type: none"> <li>By 2030, progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average</li> <li>Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard</li> <li>Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality</li> </ul>	I Sharing I Helping	<ul style="list-style-type: none"> <li>Economy support in remote areas</li> <li>Protection of labor rights</li> </ul>
<p><b>11</b> SUSTAINABLE CITIES AND COMMUNITIES</p> 	<ul style="list-style-type: none"> <li>By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</li> <li>By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</li> <li>By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities</li> <li>By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations</li> </ul>	I Helping	<ul style="list-style-type: none"> <li>Smart city, smart urban and rural products and services</li> <li>Smart navigation</li> <li>IoT and circular economy</li> <li>Disaster prevention in cities and communities</li> </ul>
<p><b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION</p> 	<ul style="list-style-type: none"> <li>By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses</li> <li>By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</li> <li>Promote public procurement practices that are sustainable, in accordance with national policies and priorities</li> <li>By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</li> </ul>	I Protecting	<ul style="list-style-type: none"> <li>Promotion of good environmental habits</li> <li>Reduction of office waste</li> <li>Supply chain management</li> <li>Sustainable local travel</li> </ul>
<p><b>13</b> CLIMATE ACTION</p> 	<ul style="list-style-type: none"> <li>Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</li> <li>Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</li> </ul>	I Protecting	<ul style="list-style-type: none"> <li>Environmental education promotions</li> </ul>
<p><b>14</b> LIFE BELOW WATER</p> 	<ul style="list-style-type: none"> <li>By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from landbased activities, including marine debris and nutrient pollution</li> </ul>	I Protecting	<ul style="list-style-type: none"> <li>Coastal cleanup Volunteer</li> <li>Sustainable local travel</li> </ul>

## 360 Degree of digital Inclusion Actions

Chunghwa Telecom focuses its social investment in “minimizing the digital divide” and the “creating of digital opportunities,” given the specific nature and the core competence of information and communication in the ICT industry. We also spare no effort in the advocacy of “corporate volunteers” to participate in local community services, and proactively assist the communities in creating digital opportunities. We promote all aspects of digital inclusion using 360-degree vision.

In 2018 Chunghwa Telecom established **35** sites for accessibility to telecom services in long-term support of a government initiative to protect fundamental rights to communications.

### Chunghwa Telecom Digital Inclusion Strategy

Strategy	Item	2018 Result
 Minimize the Digital Divide	<b>Chunghwa Telecom Foundation Digital Good Neighbors</b>	<ul style="list-style-type: none"> <li>The Digital Good Neighbors was located in <b>85</b> places</li> </ul>
	<b>The annual investment of Telecom universal service is approximately 4.2 hundred million</b>	<ul style="list-style-type: none"> <li>Telephone services for more than <b>230,000</b> homes in <b>86</b> rural communities in Taiwan.</li> <li>Data communication service for more than <b>110,000</b> households</li> <li>Data connection service for more than <b>536</b> high schools, primary schools, and public libraries.</li> <li>More than <b>1,422</b> public telephones installed across <b>16</b> counties/cities</li> </ul>
	<b>Preferential subsidies for the disadvantaged groups</b>	<ul style="list-style-type: none"> <li>Care for <b>53,963</b> households of the disadvantaged groups, with subsidies amounting to NT\$<b>137,865,000</b></li> </ul>
	<b>Equipment support for major events</b>	<ul style="list-style-type: none"> <li>Broadband circuit, MOD platform promotion, mobile base station vehicles, SMS, Wi-Fi AP, temporary data circuit</li> <li>The coverage rate of the 12Mbps popularization broadband service is over <b>98.01%</b></li> </ul>
 Create Digital Opportunities	<b>Chunghwa Telecom Foundation Click Taiwan</b>	<ul style="list-style-type: none"> <li>Click Taiwan: videos totaling <b>56</b> school students went deep into <b>26</b> different villages</li> </ul>
	<b>Hami Software Development Contest</b>	<ul style="list-style-type: none"> <li>The innovative application challenge has been running for nearly <b>11</b> years to promote digital development in Taiwan</li> </ul>
	<b>PC education/Network tutoring</b>	<ul style="list-style-type: none"> <li>Read with You “Community Network Tutoring” has tutored near <b>2,577</b> students over <b>11</b> years and the tutorial hours has now reached <b>83,696</b></li> <li>iPhone usage training courses for the visually impaired were regularly held in support of the visually impaired assistance plan</li> </ul>
	<b>Assistance application development/Employment</b>	<ul style="list-style-type: none"> <li>Development of accessible assistance – the Assistance App for the Visually Impaired has been downloaded <b>52,679</b> times.</li> <li>We established the EYE Social Innovative Call Center where the visually impaired can become paid service personnel and earn their own living.</li> </ul>

## Social Investment Management

Chunghwa Telecom refers to the community investment evaluation mechanism of the LBG (London Benchmark Group), to conduct evaluations on the possible community social benefits and business opportunities before an investment is made.

The quantification of the contribution of social investment allows us to make reasonable resources allocation, while avoiding repetition. It helps the decision-making and promotion of charities as well as future sponsorship.

### Social Investment Statistics for 2018 Unit: NT\$ thousand

Cash Donations	212,028
Product or service Donations	554,316
Management Expenditures	47,176
Corporate Volunteer Services	1,870
<b>Total</b>	<b>815,389</b>
Hours of Corporate Volunteer Services	6,368
Percentage of Revenue	0.38%

## Minimizing the Digital Divide

Chunghwa Telecom Foundation was founded in 2006. Starting with implementing corporate social responsibility, and through long-term cultivation of our core competence to communities, tribes, urban fringe, and areas with relatively lack of resources, the Foundation is a resource platform for connecting and arranging the “good” material, and further share to needed locations. It has become the strength that supports and assists the advancement of these local areas.

### The Chunghwa Telecom Foundation – The Digital Good Neighbors

To minimize the digital divide between cities and counties, the Chunghwa Telecom Foundation started the “Digital Good Neighbors” program 12 years ago. CHT combines the core profession, help building a digital learning environment, and bring broadband to the end of the pipeline, thus creating digital popularity and benefits for the communities.

The Chunghwa Telecom Foundation as a resource platform goes into the community tribes and promote digital applications with local organizations. We also provides program resources according to local need, these include digital training courses, youth volunteer events, art and reading activities, CHT Women’s Basketball, industrial assistance, recorded video learning and more. Up to the end of 2018, we were cooperating with **85** different NGOs and our tracks were all over Taiwan, including northern, central, southern Taiwan and the surrounding islands.

In October 2018, the Chunghwa Telecom Foundation collaborated with Pingtung County Government in holding the “Digital Good Neighbor Information Session” and invited **10** communities to join, with the farthest one from the Hengchun Peninsula. This joint effort of private institutions and the government has helped to produce the best possible results utilizing limited resources and aided in bridging the urban-rural divide in digital exposure and resources.

### Little Environmental Directors – Our Hometown, Digitally Captured

To encourage the usage of digital tools, Chunghwa Telecom Foundation held the “Little Environmental Directors” video-making course at Little Liuqiu (Liuqiu Island), a day before the World Earth Day; the participants were **36** local students with an average age of under 13. In addition to learning about environmental issues such as protection, they produced **6** videos on tablets after being taught a range of skills including video filming, editing and post-processing. Using imagery in this way, to speak on behalf of the environment, has helped the concept of environmental protection take root in young students.

The student-produced videos were played in the passenger waiting room in Donggang, the Visitor Center, and onboard the ferries; the hope is to amplify the effect of the event so that tourists and residents of Little Liuqiu can better address issues regarding local environmental protections. These videos promoted the idea of “reducing plastic waste while traveling, leading an eco-friendly life” to locals and tourists alike. The Foundation also drew on the experience of this successful event and continued taking steps to amplify its influence.

1. We helped the Environmental Protection Bureau of Pingtung County to hold the course at Linbian Elementary School (Linbian Township) and Shengli Elementary School (Pingtung City), tutoring **108** students in total and thus expanding the effect of the course in Little Liuqiu.
2. We played the student-produced videos at Donggang Port, the Visitor Center, and onboard ferries.
  - The public ferries of the Office of Liuqiu Township
  - The passenger waiting room in Donggang
  - The Visitor Center of Little Liuqiu
3. We promoted the project through the “Click Taiwan” Facebook Page.

Project Names	The Total Number of People Reached	Views	Shares
Little Environmental Directors – “Behind the Scenes” of the Little Liuqiu Event	18,113	5,015	38
Little Environmental Directors – My Life with Less Plastic, a Short Film	8,574	2,967	12
Little Environmental Directors – Liuqiu, Travel “Electrically” with Zero Emissions, a Short Film	5,038	1,897	5
Live-streamed Eco-Friendly Course – Wei-Tzu Sun, Speaker	1,643	411	3
Live-streamed Eco-Friendly Course – Guei-Lian Hong, Speaker	2,474	833	10



More event videos: <https://reurl.cc/5v38v>

### 2018 Social Contribution of the Foundation



## Preferential Subsidies for the Disadvantaged Groups

Chungghwa Telecom has long been subsidizing telecom services for the socially disadvantaged, and assuring their access to basic communications.

Preferential Plan	Preferential Content	Preferential Amount (NT\$ thousand)	Beneficiaries (persons)
<b>Caring Series Rate Plan (Mobile)</b>	<ul style="list-style-type: none"> <li>Double communication hours at the original rate plan for the visually impaired, hearing impaired and speech impaired.</li> <li>300 free SMS intra-network and 100 free SMS extra-network for the hearing and speech impaired. The “intra-network image telephone” rate is the same for 3G customers.</li> </ul>	2,465	555
<b>Broadband Preferential Plan for Low-income Households</b>	<ul style="list-style-type: none"> <li>50% off on 16M/3M, 35M/6M, 60M/20M, 100M/40M and 100M/40M monthly rate.</li> <li>50% off on ADSL 2M/64K &amp; 5M/384K monthly rate.</li> </ul>	53,684	11,731
<b>4G Mobile Data Plan for the Disabled</b>	Disabled persons are entitled to an NT\$200 discount on monthly subscriptions when subscribing to the 4G 636 plan and above plus Wi-Fi hotspots for NT\$ 89.	76,778	33,498
<b>Broadband Preferential Plan for the Disabled</b>	<ul style="list-style-type: none"> <li>5% off on HiNet 16M/3M, 35M/65M, 60M/20M and 100M/40M monthly rate.</li> <li>15% off on ADSL 5M /384K monthly rate. 5% off for other speed rates.</li> </ul>	2,818	5,149
<b>MOD Caring Project and Project for the Socially Unfortunate</b>	<ul style="list-style-type: none"> <li>Platform charges: A 50% discount (NT\$45 / month) from the work completion date.</li> <li>Subscribers of the family premium package, family advance package, family advance package B, family high-quality package, family special package, family popular package are entitled to 10% discount, and the normal rate after the discount period expires.</li> <li>The above projects all apply to the socially unfortunate and the caring project has no time limitation, the project for the socially unfortunate provides discounts for the first 24 months after the work completion date.</li> </ul>	2,097	2,760
<b>Healthy Net Plan</b>	HiNet Adult Content Gatekeeper protects children from harmful websites such as pornography, violence, suicide, weapons, gambling, and drugs. The service in the first year is rendered to low-income households for free.	22.6	19
<b>Welfare Public Telephone</b>	<ul style="list-style-type: none"> <li>Installed 110 cm from the floor in public areas for the convenience of the disabled.</li> <li>The keyboard was designed with embossing on the “5” key for the visually impaired, and a voice adjustment function (from 3db to 6db) was provided exclusively for people with hearing aids.</li> <li>A slot for inserting an IC card is designed on the side of all public telephone sets for the convenience of the visually impaired.</li> </ul>		
<b>Message Relay Service for the Hearing and Speech Impaired</b>	All telephone messages will be translated and faxed to the service hotline 0800 – 080885 (Help Me in Chinese homonym). The service personnel will then relay the message in voice and return the message to the hearing and speech impaired caller (up to 80 words for the relay and up to 30 words for reply). Those who are not hearing and speech impaired may also call the hotline (0800-080880) for the relay of messages via fax to the hearing and speech impaired. The service hours are 08:00 to 21:00 daily.		

## || The Creation of Digital Opportunities

By utilizing our expertise in telecom technology, we will ensure that everyone shares the advantage of technology despite financial or social standing, or geographical location. In this way we hope to quickly achieve the objective of minimizing the digital divide and creating digital opportunity. In addition to previously described action plans and subsidy, different from those of other enterprises, we also contributed resources to developing related products and services to meet the needs of the disabled and allow them to realize their right of access to the digital technology universe.

### Click Taiwan Continues to Involve Young People in its Tenth Year, Staying True to Ourselves

#### || Summer Outreach Program that Provides and Documents Services

The 2018 “Click Taiwan” program received **310** applications from **147** departments in **61** universities nationwide. **56** students were selected to perform services and capture stories at **26** Digital Good Neighbors in remote areas. These students came from different backgrounds, schools and departments, and had devoted themselves to community services by contributing their own specialties. This included the creation of stories, games designed for grandparent-grandchild interaction, production assistance with video material advertising tribal tours, the promotion of oral hygiene, event recording, graffiti art and photography courses. They captured real motivating stories with their cameras. To encourage more youth participation and get a better effect, we held photography exhibition excursions through the campuses of different colleges nationwide to share theme videos within school courses.



*If I hadn't come here, I wouldn't have been able to fully comprehend the issue of excess produce.*  
(Stationed at Tzu Hui Shan Tao Academy, Pingtung)



*I learned a lot from the children and saw their infinite possibilities.*  
(Stationed at Chung Lu Church, Changhua)



*I learned the true meaning of "kindness": an idea expressed through attitude rather than words.*  
(Stationed at Tatomak Tribe, Taitung)



*I was touched by this trip: the honest and open atmosphere seemed to draw people in as soon as they arrived.*  
(Stationed at Ching Liao Church, Tainan)

More “Click Taiwan” : <http://youth.chtf.org.tw/> 

## The Social Return on Investment (SROI) of “Click Taiwan”

The foundation cooperated with the Department of Radio & Television of National Chengchi University in 2009 in “Click Taiwan.” During the summer vacation, college students spent 15-20 days as a “Digital Good Neighbor” to “provide and document services”; they would use their skills to help the local community and record videos of local stories. This project encourages young people to make changes, challenge the norm, gain new experiences, and get to know themselves and the land through participating in different activities. The program entered its tenth year in 2018.

To get a more precise analysis of the benefits, which could be used as reference for future improvement, we used the Social Return on Invest (SROI) to examine the project by looking at its effects and further calculated and analyzed the real social impact of 2018 “Click Taiwan.”

Through a comprehensive analysis, we’ve found that an investment of just NT\$ 1 can return NT\$ **3.04** worth of social benefits. This calculation included expenses such as the cost of the 2018 project to the Foundation and the college students’ service hours. According to our calculations, this project had a measurable impact on the participating students and the communities.

Through SROI calculations, we hope to understand the benefits of the “Click Taiwan” program, collect its data and assess the impact it’s brought to Taiwan. We also hope to refine the direction and implementation of the project based on this analysis. In the future, we will introduce SROI to other projects so that when we implement relevant projects and events, we will have a more comprehensive understanding of the impact brought to society as well as the value and benefits of the CSR project; and in so doing create a more harmonious Taiwanese society.

### “Click Taiwan, Hearty Southbound” — Discovering the Value of Your Culture

The program entered its tenth year in 2018, and through a long process of hard work, we saw how college students and communities interacted with each other and grew together; we also observed an increasing number of new immigrants bringing new energy to Taiwan. At this 10-year milestone, we hoped to extend the spirit of “Click Taiwan” to this group of new immigrants. Through participating in this program, second generation immigrants were able to gain a deeper understanding of their mothers’ native cultures and would understand the advantage of having two different cultural backgrounds, which we hope will help new immigrants and their children to integrate into the Taiwanese society.

Vietnamese immigrants are the majority among Southeast Asian immigrants, and therefore, “Vietnam” was the theme for the first “Click Taiwan, Hearty Southbound.” We selected five groups from the ones recommended by academic circles and private organizations. Their members included new immigrants, their college-age children, and two Taiwanese students. We first launched the program during the winter break of 2018.



*This project created a stronger bond between me, my mother and my relatives in Vietnam. We had our first family photo because of this program.*

I-Ting Huang,  
Hearty Southbound member



*This trip broadened my horizons; I think that one can learn how to treat others equally by participating in this program.*

Miao-Ying Chou,  
Hearty Southbound member



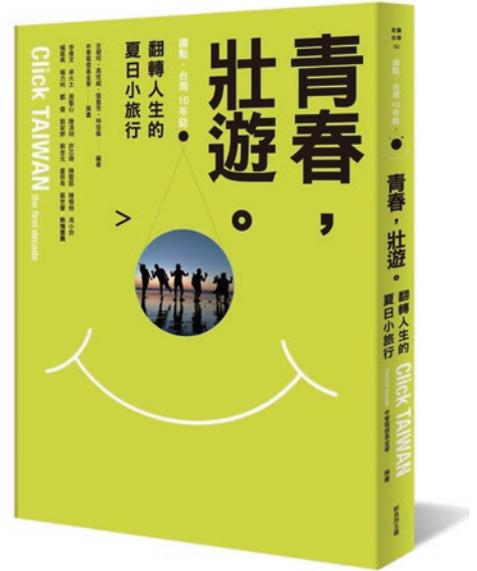
*I learned that not having a common language doesn't hinder the formation of family bonds.*

Yu-Wen Huang,  
Hearty Southbound member

More about “Click Taiwan, Hearty Southbound”: <https://youth.chtf.org.tw/achievement/south> 

## “Youth, Grand Tour” — Reflections from Program Participants

Having held the program “Click Taiwan” for ten consecutive years, we have accumulated many stories from the participants. To spread the word about this project, we interviewed 12 previous participants and invited them to share how their experiences from this project affected them in terms of their thinking and participation in relevant social activities. Through these interviews, we hope to outline the value of this project to the younger generation.



“I believe that programs like “Click Taiwan,” where we learn from doing and enjoy the company of our fellow participants’ company, can guide us in building confidence, pursuing dreams, and believing in ourselves.”  
 -Wei-Wen Li, Writer,  
 Volunteer for Eco-Friendly Movements

“An authentic story can be found in every participant of “Click Taiwan.” They connect with one another and are very conscious about bridging the rural-urban divide.”  
 -Kevin Chen, CEO of ELIV

## Seeing Need and Offering a Helping Hand

### Inigorating Community Businesses from the Root and Developing Sales Channels

To invigorate the economy of communities, the Chunghwa Telecom Foundation continues to help communities develop sales channels. In 2018, in addition to utilizing industry expert mentoring, the Chunghwa Telecom Foundation collaborated with community residents nationwide, the foundation of community businesses, to learn how to develop a green economy through eco-friendly means and increase professional expertise. This resulted in the quality of farm produce improving; we also hope it will have the further effect of bringing young people back to their communities and create more employment opportunities.



“It’s a pity if organic farming ends up becoming profit-oriented. I hope that through our persistence in practicing the idea of “caring for the Earth, the people, and sharing the surplus,” more people will adopt this way of farming and duplicate it in other places. The end of this learning experience is the start of taking action”  
 -Shao-Hsing Lin, Yunlin

“This learning experience reminded me of my home in the countryside of Thailand. Through observation, one could see how nature changed and how trees grew. I learned to document my observations and got to know diversity in how one should go about planting, the importance of just distribution, as well as organizations that pass on such culture. I’ll apply what I learned here to our farmland at home”  
 -Lily, new immigrant in Pingtung

The “Festive Gift” fair is our long-term promotional project for community businesses. We place many orders from these businesses every year, which help them to not only expand their brands, but also develop more sales channels. At the end of 2018, we helped communities develop **12** businesses, **24** new products and **12** routes for community trips as ways to support quality local businesses and enhance the visibility of Taiwan.

### Chunghwa Telecom Women’s Basketball Team Gives Back to Communities

To discover and cultivate basketball seeded players, our CHT Women’s Basketball Team participates in social activities to introduce national champion level players to the communities and tribes. We hold the “Charity 3 on 3 Basketball Tournament” all around Taiwan, scouting and training talent for Taiwanese basketball. In 2018, we held **3** charity tournaments in Hualien, Chiayi and Penghu, where **410** teams participated.

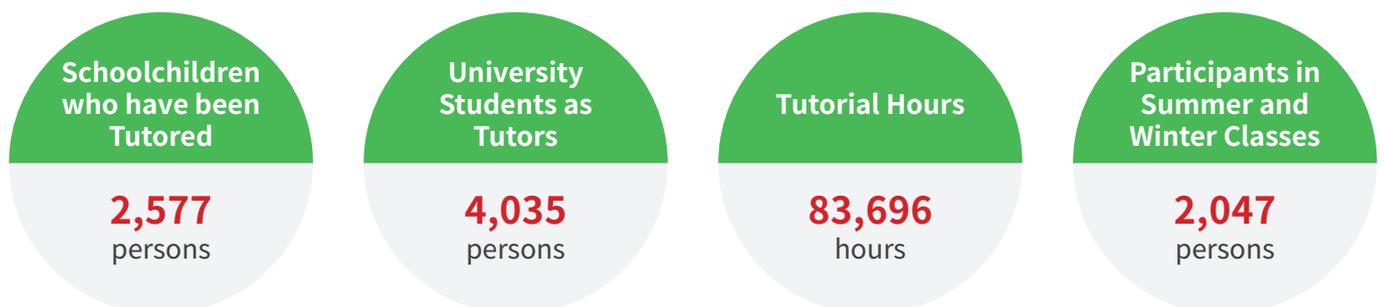


## PC Education/Network Tutoring



Chunghwa Telecom has supported education and shown its concern for rural villages ever since 2009, in the aftermath of Typhoon Morakot. We extended our services to the permanent settlements and newly developed communities in the disaster zones. Using visual Internet technology, we delivered educational resources in the form of private tutoring in rural villages for the unfortunate. We hope to give the children of the next generation a learning environment which is “safe, dignified, and hopeful.”

Item	Description
Goal	<p><b>By 2022, we hope to:</b></p> <ul style="list-style-type: none"> <li>Assist <b>2,900</b> students in the remote areas with network tutoring</li> <li>Accumulate more than <b>4,500</b> volunteers to participate in network tutoring</li> <li>Accumulate more than <b>100,000</b> volunteer hours for network tutoring and training</li> </ul>
Characteristic	Online education with one-on-one individual tutoring by university students helps pupils of junior high schools and primary schools in the rural villages to enhance their learning and provides equal learning opportunities.
Method	<ul style="list-style-type: none"> <li>To realize the spirit of stakeholder engagement, we have cooperated with the Center of Care Services for Rural Area Education in Taiwan, and the Fu Jen Catholic University, in online education.</li> <li>University students helped the cause with one-on-one tutoring to take care of the school children in the rural villages and disaster zones.</li> <li>Customized exclusive class supplements to care for the spiritual growth of schoolchildren through companionship, interaction and communication</li> </ul>
Participant	Pingtung Feng Lin Church, Pingtung Chao Chou Boys Town, the Taitung Kaulahan Association, Taitung Chinese Love & Joy Charity Association, Taitung Fukid Tribe, Kaohsiung Yuanfu Community, the Tainan Yellow Ribbon Network Association, Chiayi Fu Jen High School, the Orchid Island, Matzu High School, Taitung Luye Church, Hualien Yuli Catholic Church, and Taoyuan Guanyin Catholic Church.
Major Result	<ul style="list-style-type: none"> <li>University students improve the children’s learning outcomes with one-on-one individual tutoring of the school children in rural villages. They also took care of their need for personal communication and interaction.</li> <li>Ten years of effort by e-Tutor partners has helped several dozen students gain admission to national and private universities, including the National Yang Ming University and Taipei Medical University. Assistance to remote villages has really reduced the divide between the cities and counties, radically improved the opportunities available to the children and changed their lives.</li> </ul>



The data period started from December 2009 to February 2019.

## I Helping- Corporate Volunteers Training

We take advantage of corporate information and communication resources to support the visually impaired. In 2017, we collaborated with the Taiwan Telecom Industry Development Association to respond to the Suang Lien Foundation promotion of “Secondhand iPhones For the Visually Impaired Assistance Plan.” In addition to a donation of 50 used phones with Senao International, we also provided a free Wi-Fi training classroom for the “iPhone Course for the Visually Impaired” to ensure them the same opportunities and basic communications rights as others. The Chunghwa Telecom corporate volunteer assistance plan entered its fifth stage in 2018. The corporate volunteers reset all the collected iPhones to “factory setting” status, each visually impaired persons who had completed the training was given an iPhone.



## Assistance Application Development



We believe “humanity to be the foundation of technology innovation.” In 2013, we launched a “Voice-based Personal Assistance App” that was specifically designed for the visually impaired. The App incorporates image, voice, reading, and lifestyle functions to assist both visually impaired and elders to face some of their difficulties. By the end of 2018, the App had been downloaded **51,360** times. It is one of the most convenient and useful personal assistants available.

## The Senior Citizens App



“Senior Citizens App” was the first application developed by Chunghwa Telecom and the Institute for Information Industry that addresses the needs of the elderly. The App has several useful features including: phone assistance, a contact list, caller announcement, weather inquiry, health reminder, emergency contact, photo sharing, and video streaming. This App will make Smartphones and Tablets more user-friendly for older people and further minimize the digital divide. In the future, there would be an iOS version and push notifications for the latest health information.

## EYE Social Innovative Call Center Creates Employment Opportunities for the Visually Impaired

Chunghwa Telecom has engaged in long-term cooperation with the Resource Center for the Visually Impaired at Tamkang University for more than 30 years and the EYE Social Innovative Call Center was set up in 2011. This joint effort led to the unveiling of the first “Total Solution” in Taiwan. This includes research and development of a computer-assisted telephone system, the improvement and the training and supervision of talent and the development of skill in customer phone service personnel who respond to the needs of the visually impaired.

- In 2015, the Company completed an upgrade to the Taipei City 1999 hotline, making it user-friendly to the visually impaired. This upgrade included: a real-time notification system, a three-way call feature with voice recording, English/ Japanese services, a verbal abuse referral feature, a call duration reminder, a health regulation inquiry feature, and a quick link to service sub-categories. These upgrades greatly improved the scope and efficiency of the service.
- By the end of 2018, the “Total Solution” had provided **8** working opportunities for the satisfaction surveyors of Chunghwa Telecom (including one visually impaired manager), who are responsible for the production of about 5,000 valid questionnaires each month. There were another **15** customer service personnel (**12** visually impaired and **3** supervisors) for the Taipei City 1999 hotline.
- We initiated new employment opportunities for persons with spinal injuries. **2** with severe injury serve as 4G visual assistance service persons. They assist with image identification for the visually impaired through the 4G cloud services. This helps promote their quality of daily life and independence while providing employment opportunities for the severely disabled.

## Automated Voice Donations

The automated voice system for donations developed by Chunghwa Telecom Laboratories has proved to be helpful for charities, social welfare, cultural, educational, and environmental protection institutions. It gives donors a more convenient means of donation. A donor simply needs to pick up their cell phones, dial the number, and follow the voice prompts to contribute care to those in need. In 2018, there were **6,201** donations, totaling NT\$ **3,305,150**.

# Public Policy Participation

The SDGs CHT contributes to in this chapter

**8** DECENT WORK AND  
ECONOMIC GROWTH



**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



**11** SUSTAINABLE CITIES  
AND COMMUNITIES





In 2018, Chunghwa Telecom donated about NT\$ **490** million in the participation of public policy items including joining national and international associations, supporting government popularization services and constructions and developing its prospective industries.



We have joined almost **100** associations and groups to upgrade its technology and stimulate the development of the industry through exchange and cooperation within the industry or across different industries. The key associations we joined are as follows:

Name of Association	Description	Qualification
The Chinese Institute of Electrical Engineering	Presenting opinions on the telecom policies of the government through the telecom symposium held by the institute, and we sponsor the activities of the institute to support the industries.	Member
Taiwan Intelligent Aerotropolis Association	Chunghwa Telecom leads the planning and operation of the association to develop new business opportunities and the industrial prowess of Taiwan, and develops the kind of skills needed for exporting solutions around the world.	Member
Taiwan Telecommunication Industry Development Association	The platform serves for interchange among the industry peers. With collective consultation and discussion on important issues, this association plays a role as the bridge between the industry and the competent authority. A mobile communications construction group has been established to discuss items such as the co-construction of base stations, shared stations or antenna port preservation.	Member
Chinese International Economic Cooperation Association	We are invited to deliver addresses on special topics and assist in the promotion of international exchange and business joint venture. We cooperate in product distribution to promote business and media exposure at conferences held in Taiwan.	Member
TCCDA (Taiwan Customer Service Center Development Association)	Organizes frequent seminars and introduces the latest customer service system techniques, operation management, and the concept of service and business innovation. This is helpful to Chunghwa Telecom for the improvement of management and customer service.	Member
Pacific Telecommunications Council (PTC)	Contact with worldwide telecom corporations at regular intervals for business deals in nearby locations. This provides substantial results in overseas business expansion.	Member
Business Council for Sustainable Development of Taiwan (BCSD-Taiwan)	Good for the review of sustainable corporate development strategy and the introduction of related management tools. Controls the dynamics of the international development of CSR issues and is helpful with other than financial performance information disclosure.	Member
Cloud Computing & IoT Association in Taiwan	Helps to get a grip on the information of the government cloud and business opportunity and consultation with the government on the cloud industry through the association. In addition, it also increases international and cross-strait interaction opportunities.	Member

## Strategies and Goals for Material Topics

Material Topics	Short-term Goals (2019)	Medium- and Long-Term Strategies (2020-2025)
Ensuring shareholders' equity	<ul style="list-style-type: none"> <li>To maintain the percentage of independent directors at above <b>35%</b></li> <li>Have at least <b>2</b> female directors on the Board</li> <li><b>0</b> conflict of interest cases within the Board</li> </ul>	<ul style="list-style-type: none"> <li>To improve business performance and uphold and promote the interests of shareholders through the 4 transformational projects: "core business," "emerging business," "cost optimization," and "improvement of basic skills" established under the guiding principle of "customer-centered value creation"</li> </ul>
The integrity and business ethics of the employees	<ul style="list-style-type: none"> <li>An employee satisfaction rate of <b>80%</b></li> <li>The employee turnover rate within the first 3 years of employment maintained at under <b>5%</b></li> <li>The rate of implementing annual integrity and ethics test reached <b>100%</b></li> <li>To keep educational training expenses at NT\$ <b>500</b> million</li> </ul>	<ul style="list-style-type: none"> <li>To ensure that employees' average salary is in the top <b>5%</b> of the industry</li> <li>To ensure that starting salaries are higher than the minimum wage in Taiwan</li> <li>To maintain the collective agreement coverage rate at <b>99%</b></li> <li>To reach <b>100%</b> in implementing general education courses</li> </ul>
Building a happy business		
Fair and equal labor-management relations and employee engagement		
Health and safety	<ul style="list-style-type: none"> <li>To reach <b>99%</b> in employees' participation in the routine physical examination</li> </ul>	<ul style="list-style-type: none"> <li>To maintain <b>99%</b> in the employees' participation of the routine physical examination</li> <li>To obtain the management system certification (ISO 45001) for <b>every</b> branch</li> </ul>
Climate change and energy management	<ul style="list-style-type: none"> <li>Register for and pass the examination of the Science Based Targets (SBT)</li> <li>Obtain water footprint certification (ISO 14046) for the IDC in Banqiao</li> <li>Obtain carbon footprint certification (ISO 14067) and the Carbon Footprint Label from the Environment Protection Administration for service centers</li> </ul>	<ul style="list-style-type: none"> <li>To reach a capacity of <b>750</b> kW in renewable energy for the company's own facilities by 2030</li> <li>To reach a cumulative <b>10%</b> decrease in carbon emissions by 2023, with 2017 as the base year</li> </ul>
Information on the products and service	<ul style="list-style-type: none"> <li><b>0</b> cases of major unclear labeling or incidences of fraud</li> </ul>	<ul style="list-style-type: none"> <li>To ensure complete compliance with laws and internal regulations in promotional information of products and services</li> </ul>
Privacy protection	<ul style="list-style-type: none"> <li><b>0</b> cases of major cyber security incidents</li> <li><b>0</b> cases of major personal information leakage incidents</li> </ul>	<ul style="list-style-type: none"> <li>Annual examination of and adjustment to the policies, regulations, and strategies for cyber and personal information security</li> <li>To external and internal audits; to pass the investigations of the competent authorities and obtain third party certifications</li> </ul>
Social and economic law compliance	<ul style="list-style-type: none"> <li><b>0</b> cases of major legal violations</li> <li>To organize annual legal compliance training</li> </ul>	<ul style="list-style-type: none"> <li>To ensure that no major violations of Taiwan's economic, social, or environmental regulations occur</li> </ul>



## ASSURANCE STATEMENT

### **SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE CHUNGHWA TELECOM CO., LTD.'S CORPORATE SOCIAL RESPONSIBILITY REPORT FOR 2018**

#### **NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION**

SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by Chunghwa Telecom CO., LTD. (hereinafter referred to as CHT) to conduct an independent assurance of the Corporate Social Responsibility Report for 2018 (hereinafter referred to as CSR Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the text, and data in accompanying tables, contained in this report.

The information in the CHT's CSR Report of 2018 and its presentation are the responsibility of the management of CHT. SGS has not been involved in the preparation of any of the material included in CHT's CSR Report of 2018.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all CHT's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) 101: Foundation 2016 for accuracy and reliability and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

This report has been assured using our protocols for:

- evaluation of content veracity of the sustainability performance information based on the materiality determination at a high level of scrutiny for CHT and moderate level of scrutiny for subsidiaries, joint ventures, and applicable aspect boundaries outside of the organization covered by this report;
- AA1000 Assurance Standard (2008) Type 2 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008); and
- evaluation of the report against the requirements of Global Reporting Initiative Sustainability Reporting Standards (100, 200, 300 and 400 series) claimed in the GRI content index as material and in accordance with.
- evaluation of the report against the IIRC International <IR> Framework (Chinese version 2015) requirements for content elements.

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, CSR committee members and the senior management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant. Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

#### **STATEMENT OF INDEPENDENCE AND COMPETENCE**

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from CHT, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with ISO 26000, ISO 20121, ISO 50001, SA8000, RBA, QMS, EMS, SMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SRA Assurance service provisions.

#### **VERIFICATION/ ASSURANCE OPINION**

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within CHT's CSR Report of 2018 verified is accurate, reliable and provides a fair and balanced representation of CHT sustainability activities in 01/01/2018 to 12/31/2018.

The assurance team is of the opinion that the Report can be used by the Reporting Organisation's Stakeholders. We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the contents of the report meet the requirements of GRI Standards in accordance with Core Option and AA1000 Assurance Standard (2008) Type 2, High level assurance. The report also appropriately responds to the content elements requirements of The IIRC International <IR> Framework.

#### **AA1000 ACCOUNTABILITY PRINCIPLES (2008) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS**

##### **Inclusivity**

CHT has demonstrated a good commitment to stakeholder inclusivity and stakeholder engagement. A variety of engagement efforts such as survey and communication to employees, customers, investors, suppliers, CSR experts, and other stakeholders are implemented to underpin the organization's understanding of stakeholder concerns.

##### **Materiality**

CHT has established effective processes for determining issues that are material to the business. Formal review has identified stakeholders and those issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to these stakeholders.

##### **Responsiveness**

The report includes coverage given to stakeholder engagement and channels for stakeholder feedback.

#### **GLOBAL REPORTING INITIATIVE REPORTING STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS**

The report, CHT's CSR Report of 2018, is adequately in line with the GRI Standards in accordance with Core Option. The material topics and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material topics and boundaries, and stakeholder engagement, GRI 102-40 to GRI 102-47, are correctly located in content index and report. For future reporting it is recommended CHT to align the selected SDGs' targets with its selected material topics on what efforts has been made and the result of performance.

##### **Signed:**

**For and on behalf of SGS Taiwan Ltd.**



**David Huang**  
**Senior Director**  
**Taipei, Taiwan**  
**21 June, 2019**  
**WWW.SGS.COM**



# GRI Standards Index

## The Management Approach and Its Components

Material Topics	How We Manage the Topic
<b>Economic Performance</b>	We have a robust corporate governance system that involves independent directors and supervisors. The Audit Committee, the Strategy Committee and the Audit Department have been established for effective control of operating costs and business direction.
<b>Market Presence</b>	We have established a compensation committee, which helps to ensure that we provide employees with competitive salaries. We're also able to adequately reward our employees through transparent salary policies.
<b>Anti-corruption</b>	To ensure that all employees can conduct business activities with the highest ethical standard, we have implemented the "Business Integrity Principles," the "Behavior Guidelines," and the "Integrity Procedures and Behavior Guidelines" that outline the ethics and responsibilities that employees are bound to obey in all commercial conducts. Furthermore, we actively convey to employees about the Company's culture or its ethical policies.
<b>Anti-competitive Behavior</b>	
<b>Energy</b>	We perform annual greenhouse gas inventories & verifications and publicly disclose the related environmental information. We effectively keep track of environmental resources and energy saving performance through the self-developed EARTH system.
<b>Emissions</b>	
<b>Employment</b>	CHT treats employees as its most important partners, and is committed to providing employees the utmost "assurance." For best protection of employees' work rights, Chunghwa Telecom has signed the "employment contracts" with individual employees and notifies them of changes regarding employment under the Labor Standards Act. Furthermore, we exploit various communication channels including seminars and labor management meetings to maintain a harmonious and mutually beneficial working relationship.
<b>Labor/ Management</b>	
<b>Occupational Health &amp; Safety</b>	Chunghwa Telecom is the first telecom company in Taiwan to incorporate an Occupational Health and Safety Management System (OHSAS 18000). We ensure the effective management of employee health & safety through an institutional and systematic mechanism. In addition to complying with health & safety regulations and other related regulations, we also continue to improve the OHS facilities and measures of our working environment.
<b>Marketing and Labeling</b>	In addition to providing relevant information and usage descriptions on all products and services offered, we also have a "Marketing Policy" in place to ensure that business activities are carried out in compliance with the authority's rules and requirements. Compliance with such policy constitutes part of senior managers' performance appraisal.
<b>Customer Privacy</b>	We have a Personal Information Protection Task Force created under the Information Strategy Committee; its duties are to execute the Committee's policies and perform personal information risk assessments monthly. All key business activities that are have prone to information risks have been audited and certified by a third party.
<b>Socioeconomic Compliance</b>	Ethical management and legal compliance are the principles and guidelines that govern our operations. To ensure all operations comply with socioeconomic laws and regulations, we have a sound internal audit system, and we promote knowledge of legal compliance through lectures and online tests.

Purpose of the Management Approach	Policy	Goal & Target (Page Number)	Grievance Mechanism
To ensure that the Company's operations conform to the requirements of the government and supervising authorities, and that shareholders' and stakeholders' interests are protected.	"Business Integrity Principles," "Behavioral Guidelines," "Corporate Governance Principles"	p.16	<ul style="list-style-type: none"> <li>Shareholder hotline: 2394-1845</li> <li>Investor hotline: 2344-5488</li> </ul>
Ensuring that the company's compensation policies, systemic standards, and structures comply with government regulations and labor rights.	Employment Contract	p.69	<ul style="list-style-type: none"> <li>Grievance hotline: 0800-080998</li> </ul>
To effectively manage and ensure that all operating activities are compliant with commercial, marketing, and integrity principles, and to eliminate corruption.	"Business Integrity Principles," "Behavior Guidelines," "Corporate Governance Principles"	p.17	<ul style="list-style-type: none"> <li>Grievance hotline: 0800-080998</li> </ul>
To improve the environmental management efficiency via the acquisition of international certifications.	Environmental Policy	p.95	<ul style="list-style-type: none"> <li>Grievance hotline: 0800-080998</li> </ul>
To ensure that employees' employment and work rights are protected.	"Employment Contract," "Business Integrity Principles," "Behavior Guidelines," "Corporate Governance Principles"	p.70	<ul style="list-style-type: none"> <li>Complaint Investigation Committee</li> <li>Grievance hotline: 0800-080998</li> </ul>
Chunghwa Telecom guarantees its employees a safe and healthy working environment to prevent occupational hazards.	Employment Contract, Collective Agreement	p.77	<ul style="list-style-type: none"> <li>Grievance hotline: 0800-080998</li> </ul>
To protect consumers' rights to information and ensure the clarity and transparency of marketing information.	"Distribution Sales Aid Management Guidelines," "Distribution Sales Aid Management Policy," "Marketing Policy"	p.69	<ul style="list-style-type: none"> <li>Telecom Service Center: 0800-080-123</li> </ul>
To ensure that customers' personal information is strictly protected.	"Customer Personal Information Gathering Advice Clause," "Information Security Policy," "Information Security Management Policy and Implementation Rules"	p.85	<ul style="list-style-type: none"> <li>Telecom Service Center: 0800-080-123</li> </ul>
To ensure that the Company's operations are free from violations of environmental regulations.	"Business Integrity Principles," "Behavioral Guidelines," "Corporate Governance Principles," "Distribution Sales Aid Management Guidelines," "Distribution Sales Aid Management Policy," "Marketing Policy," NCC's "Regulations for Administration of Base Stations of Mobile Communications Network Businesses"	p.17,85	<ul style="list-style-type: none"> <li>Complaint Investigation Committee</li> <li>Grievance hotline: 0800-080998</li> </ul>

# Evaluation of the Management Approach

Material Topics	Mechanism for Evaluation	Result of the Evaluation (Page Number)	Adjustment
<b>Economic Performance</b>	Independent directors, supervisor system, internal audit and evaluation by the relevant authority	p.16	None
<b>Market Presence</b>	Payroll committee、internal audit、evaluation by relevant regulatory authorities	p.69	None
<b>Anti-corruption</b>	Internal audit, communication/grievance system (including hotlines, emails, and specialized departments), annual online tests, TWSE corporate governance evaluation	p.17	None
<b>Anti-competitive Behavior</b>	Internal audit, communication/grievance system (including hotlines, emails, and specialized departments), annual online tests, TWSE corporate governance evaluation	p.17	None
<b>Energy</b>	ISO 14001 and ISO 50001 management system certificate, TWSE corporate governance evaluation	p.95	None
<b>Emissions</b>	ISO 14064-1 management system certification, TWSE corporate governance evaluation	p.49	None
<b>Employment</b>	TWSE corporate governance evaluation, labor contract,	p.70	None
<b>Labor/Management</b>	TWSE Corporate Governance Evaluation, Employment Contract, Collective Agreement	p.72	None
<b>Occupational Health and Safety</b>	Employment Contract, Collective Agreement, OHSAS 18000 and ISO 45001 management system certificate	p.77	None
<b>Marketing and Labeling</b>	NCC's telecom service quality survey, communication/consumer complaint report	p.69	None
<b>Customer Privacy</b>	Grievance system, system certification (ISO 27001, BS 10012), internal auditor certification, TWSE corporate governance evaluation	p.85	None
<b>Socioeconomic Compliance</b>	NCC's telecommunication service quality survey, communication/consumer complaint report, TWSE Corporate Governance Evaluation	p.17	None

	Disclosure Item	Page
<b>GRI 103 Management Approach</b>	103-1 Explanation of the management approach	p.30
	103-2 The management approach and its components	p.126-127
	103-3 Evaluation of the management approach	p.128

# General Disclosures

General Disclosure (2016)	Disclosure Items	Page Number/ URL and Comment	Identified Omission and Explanation	External Assurance
<b>Organizational Profile</b>				
102-1	Name of the organization	Chunghwa Telecom		V
102-2	Activities, brands, products, and services	p.11		V
102-3	Location of headquarters	p.9		V
102-4	Location of operations	p.9		V
102-5	Ownership and legal form	p.9		V
102-6	Markets served	p.9		V
102-7	Scale of the organization	p.9		V
102-8	Information on employees and other workers	p.70		V
102-9	Supply chain	p.12-13		V
102-10	Significant changes to the organization and its supply chain	None		V
102-11	Precautionary Principle or approach	p.19,42-50		V
102-12	External initiatives	p.18,45,109		V
102-13	Membership of associations	p.122		V
<b>Strategy</b>				
102-14	Statement from senior decision-maker	p.4-5		V
<b>Ethics and Integrity</b>				
102-16	Values, principles, standards, and norms of behavior	p.17		V
<b>Governance</b>				
102-18	Governance structure	p.14		V
<b>Stakeholder Engagement</b>				
102-40	List of stakeholder groups	p.34-35		V
102-41	Collective bargaining agreements	p.72		V
102-42	Identifying and selecting stakeholders	p.34-35		V
102-43	Approach to stakeholder engagement	p.34-35		V
102-44	Key topics and concerns raised	p.34-35		V
<b>Reporting Practice</b>				
102-45	Entities included in the consolidated financial statements	2018 Corporate Annual Report p.143-160		V
102-46	Defining report content and topic Boundaries	30		V
102-47	List of material topics	30		V
102-48	Restatements of information	Redefining "foreign suppliers"		V
102-49	Changes in reporting	None		V
102-50	Reporting period	2018/1/1-2018/12/31		V
102-51	Date of most recent report	2018/8/31		V
102-52	Reporting Cycle	Once a year		V
102-53	Contact point for questions regarding the report	p.1		V
102-54	Claims of reporting in accordance with the GRI Standards	Core		V
102-55	GRI content index	126-132		V
102-56	External assurance	124-125		V

# Topic-Specific Disclosures

General Disclosure (2016)	Disclosure Items	Page/URL and Description	Res	External Assurance
<b>201 Economic Performance</b>				
201-1	Direct economic value generated and distributed	p.16		V
201-3	Defined benefit plan obligations and other retirement plans	p.81		V
<b>202 Market Presence</b>				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	p.69		V
<b>205 Anti-corruption</b>				
205-3	Confirmed incidents of corruption and actions taken	None		V
<b>206 Anti-competitive Behavior</b>				
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	None		V
<b>302 Energy</b>				
302-1	Energy consumption within the organization	p.96		V
302-4	Reduction of energy consumption	p.96-101		V
302-5	Reductions in energy requirements of products and services	p.94,96,99		V
<b>305 Emissions</b>				
305-1	Direct (Scope 1) GHG emissions	p.49		V
305-2	Energy indirect (Scope 2) GHG emissions	p.49		V
305-3	Other indirect (Scope 3) GHG emissions	p.49		V
305-5	Reduction of GHG emissions	p.47		V
<b>307 Environmental Compliance*</b>				
307-1	Non-compliance with environmental laws and regulations	None		V
<b>401 Employment</b>				
401-1	New employee hires and employee turnover	p.70		V
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	p.77,79-80		V
401-3	Parental leave	p.81		V

General Disclosure (2016)	Disclosure Items	Page/URL and Description	Res	External Assurance
<b>402 Labor/Management Relations</b>				
402-1	Minimum notice periods regarding operational changes	p.72		V
<b>403 Occupational Health and Safety</b>				
403-1	Occupational health and safety management system	p.76		V
403-2	Hazard identification, risk assessment, and incident investigation	p.78		V
403-4	Worker participation, consultation, and communication on occupational health and safety	<a href="https://goo.gl/hiH48K">https://goo.gl/hiH48K</a> Health and safety topics make up 6.5% of trade unions.		V
<b>405 Diversity and Equal Opportunity*</b>				
405-1	Diversity of governance bodies and employees	p.14,70		V
405-2	Ratio of basic salary and remuneration of women to men	p.71		V
<b>416 Customer Health and Safety*</b>				
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	None		V
<b>417 Marketing and Labeling</b>				
417-2	Incidents of non-compliance concerning product and service information and labeling	None		V
417-3	Incidents of non-compliance concerning marketing communications	None		V
<b>418 Customer Privacy</b>				
418-1	Management approach disclosures	None		V
<b>419 Socioeconomic Compliance</b>				
419-1	Management approach disclosures	None		V

Topics marked with \* have been disclosed voluntarily, and are not part of the material topics identified in 2018.

# Telecommunication Sector Specific Indicators

DMA and Indicators	Disclosure Item	Page Number and Comment	Identified Omission and Explanation	External Assurance
<b>SUB-CATEGORY: INTERNAL OPERATIONS</b>				
<b>MATERIAL ASPECT: Investment</b>				
DMA 112	IO1	Capital investment in telecommunication network infrastructure broken down by country/region	p.112	V
	IO2	Net costs for service providers under the Universal Service Obligation when extending service to geographic locations and low-income groups, which are not pro table. Describe relevant legislative and regulatory mechanisms.	p.112	V
<b>MATERIAL ASPECT: Health and Safety</b>				
DMA 90	IO3	Practices to ensure health and safety of field personnel involved in the installation, operation and maintenance of masts, base stations, laying cables and other outside plants. Related health and safety issues include working at heights, electric shock, exposure to EMF and radio frequency fields, and exposure to hazardous chemicals.	p.78-79	V
	IO4	Compliance with ICNIRP (International Commission on Non-Ionizing Radiation Protection) standards on exposure to radiofrequency (RF) emissions from handsets	p.90	V
	IO5	Compliance with ICNIRP (International Commission on Non-Ionizing Radiation Protection) guidelines on exposure to radiofrequency (RF) emissions from base stations	p.90	V
	IO6	Policies and practices with respect to Specific Absorption Rate (SAR) of handsets.	p.90	V
<b>MATERIAL ASPECT: Infrastructure</b>				
DMA 90	IO7	Policies and practices on the siting of masts and transmission sites including stakeholder consultation, site sharing, and initiatives to reduce visual impacts. Describe approach to evaluate consultations and quantify where possible.	p.90	V
	IO8	Number and percentage of stand-alone sites, shared sites, and sites on existing structures.	p.90	V
<b>SUB-CATEGORY: PROVIDING ACCESS</b>				
<b>MATERIAL ASPECT: Access to Telecommunication Products and Services: Bridging the Digital Divide</b>				
DMA 88	PA1	Policies and practices to enable the deployment of telecommunications infrastructure and access to telecommunications products and services in remote and low population density areas. Include an explanation of business models applied.	p.88	V
	PA2	Policies and practices to overcome barriers for access and use of telecommunication products and services including: language, culture, illiteracy, and lack of education, income, disabilities, and age. Include an explanation of business models applied.	p.88-91	V
	PA3	Policies and practices to ensure availability and reliability of telecommunications products and services and quantify, where possible, for specified time periods and locations of down time.	p.88-91	V
	PA4	Quantify the level of availability of telecommunications products and services in areas where the organization operates. Examples include: customer numbers/market share, addressable market, percentage of population covered, percentage of land covered.	p.88	V
	PA5	Number and types of telecommunication products and services provided to and used by low and no income sectors of the population. Provide definitions selected. Include explanations of approach to pricing, illustrated with examples such as price per minute of dialogue/bit of data transfer in various remote, poor or low population density areas.	p.114	V
	PA6	Programs to provide and maintain telecommunication products and services	p.88-89	V
<b>MATERIAL ASPECT: Access to Content</b>				
DMA 83	PA7	Policies and practices to manage human rights issues relating to access and use of telecommunications products and services.	p.83	V
<b>Customer Relations</b>				
DMA 83	PA8	Policies and practices to publicly communicate on EMF related issues. Include information provides at points of sales material.	p.90	V
	PA9	Total amount invested in programs and activities in electromagnetic field research. Include descriptions of programs currently contributed to and funded by the reporting organization.	None	V
	PA10	Initiatives to ensure clarity of charges and tariffs.	<a href="https://www.emome.net/data_plan">https://www.emome.net/data_plan</a>	V
	PA11	Initiatives to inform customers about product features and applications that will promote responsible, efficient, cost-effective, and environmentally preferable use.	p.84	V
<b>SUB-CATEGORY: Technology Applications</b>				
<b>MATERIAL ASPECT: Resource Efficiency</b>				
DMA 57	TA1	Provide examples of the resource efficiency of telecommunication products and services delivered.	p.57-64	V
	TA2	Provide examples of telecommunication products, services and applications that have the potential to replace physical objects (e.g. a telephone book by a database on the web or travel by videoconferencing)	p.57-64	V
	TA3	Disclose any measures of transport and/or resource changes of customer use of the telecommunication products and services listed above. Provide some indication of scale, market size, or potential savings.	p.57-64	V
	TA4	Disclose any estimates of the rebound effect (indirect consequences) of customer use of the products and services listed above, and lessons learned for future development. This may include social consequences as well as environmental.	p.119	V
	TA5	Description of practices relating to intellectual property rights and open source technologies.	p.61	V



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## **Smart CSR Leads Smart City**



**Chunghwa Telecom**