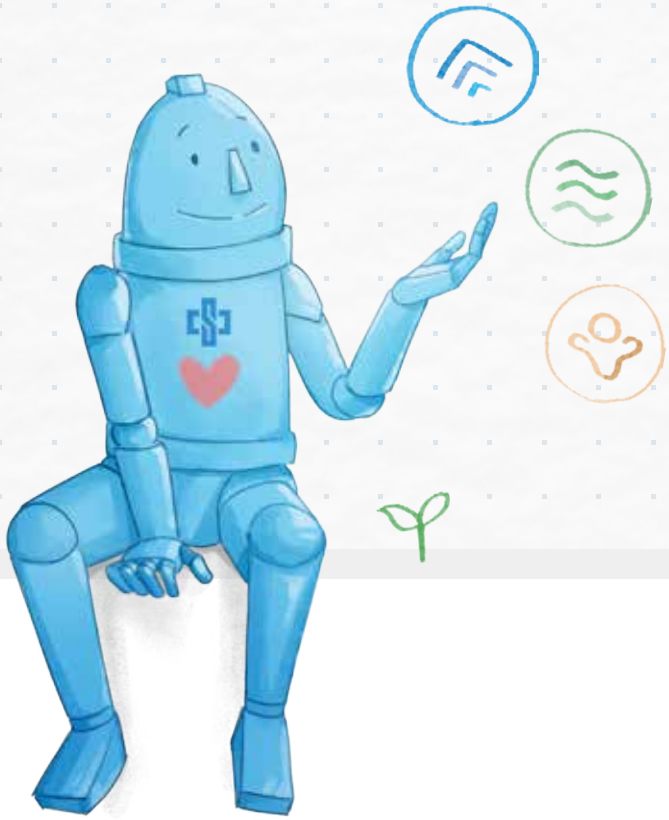
2019 CORPORATE SOCIAL RESPONSIBILITY REPORT

CHINA STEEL

CONTENT

0. Overview

1. Sustainable Operation



2. Corporate Governance

3. Value Creation

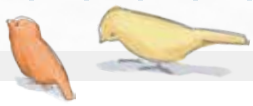
4. Industry Chain Improvement

5. Environmental Protection

6. Employees Care

7. Social Participation

8. Appendix



0.1 About This Report

Starting with the 2002 Environmental Report, China Steel Corporation (CSC) has widened the scope of non-financial reporting to all aspects of corporate social responsibility (CSR) and sustainability. Since 2010, CSC has been publishing annual Sustainability Reports in accordance with the Global Reporting Initiative (GRI) guidance. In 2012, the CSC CSR website was launched for more accessible, transparent, timely, complete, and interactive reporting. Sustainability Reports and the CSR website are important communication channels as well as CSC's integral approaches to continual improvement of sustainable operations.

Standards

The 2019 CSC Corporate Social Responsibility Report has been prepared in accordance with the GRI Standards: Core option and "Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports" by TWSE Listed Companies. It also refers to the OECD Guidelines for Multinational Enterprises, the Earth Charter, the UN Global Compact, the UN SDGs, ISO 26000 Guidance on Social Responsibility, and non-financial disclosure of the steel industry.

Scope

This report covers CSC's operational systems and practices in the 2019 calendar year with a special focus on CSC's management approach and performances on material topics.

Report on Management Methods and Quality

Data and information presented in this report were supplied by CSC departments with the approval of respective Directors. The initial draft, compiled by the Environmental Protection Dept., was reviewed by the CSR Core Working Group. It was confirmed through a rigorous administrative procedure before being finalized and was approved by the Chairman for publication. This report was assured by a third-party entity, in adherence to AA1000 AccountAbility Principles (2018) as conducted in accordance with type 1 of AA1000AS (2008) with 2018 Addendum sustainability assurance engagement while part of the data complies with Type 2 (Please see the appendix 1) as well as the GRI Standards: Core option. Financial information was extracted from financial reports audited by CPA, and the chapters on "Green Process" and "Occupational Health and Safety" were based on related international management systems (ISO 50001, ISO 14001, and CNS 15506 / OHSAS 18001, etc.) and externally reviewed.

CSR Core Working Group Members include the Human Resources Dept., Public Affairs Dept., Marketing Administration Dept., Finance Dept., Secretariat Dept., Industrial Safety and Hygiene Dept., Environmental Protection Dept., Utilities Dept., Iron and Steel R&D Dept., Labor Union of CSC, and CSC Group Education Foundation.

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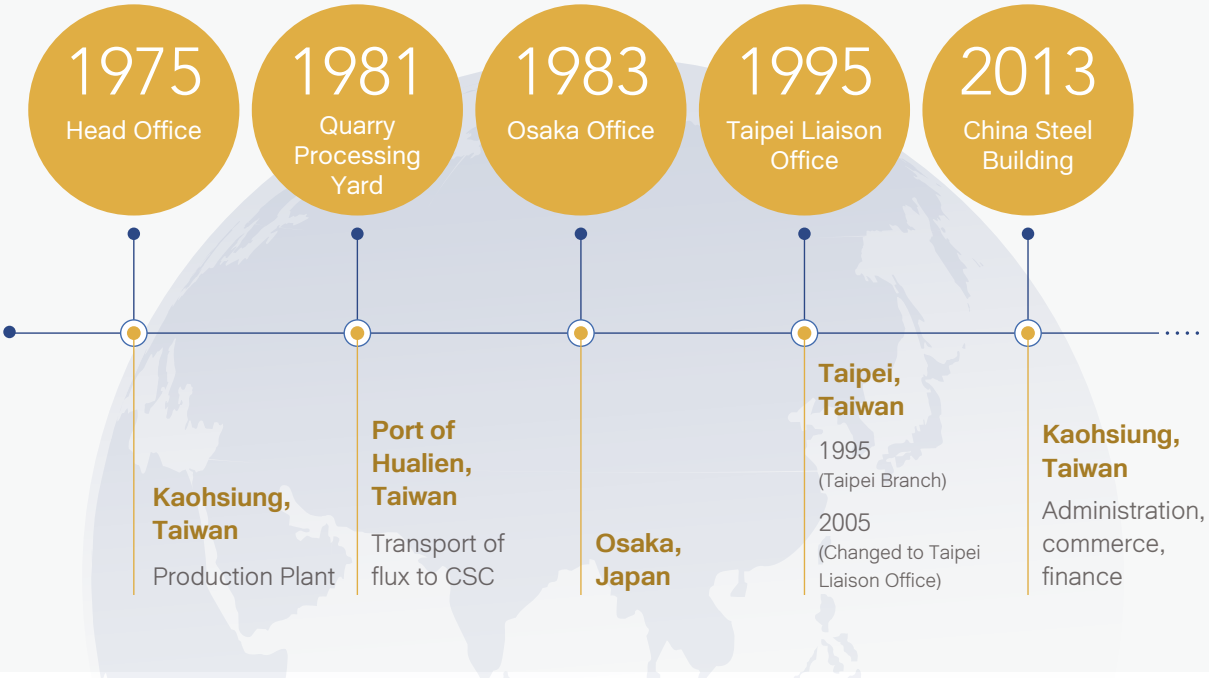
CSC CSR Website

0.2 About CSC

0.2.1 Chronicle

CSC was founded in December 3rd, 1971. Over the past half century, CSC has overcome many tough challenges. After going through four phases of expansion along with Dragon Steel Corporation's stage II construction, CSC built a magnificent steel plant from scratch, providing the foundation for Taiwan's industrial development and acting as an important promoter of Taiwan's economic miracle.

Locations



0.2.2 Business and Scale

CSC is a world-class steel corporation with an annual production capacity (in terms of crude steel) around 10 million tonnes. According to the report published by World Steel Association (worldsteel), the crude steel production of CSC was ranked 22nd among all worldsteel members in 2018. Moreover, CSC's competitiveness was ranked 22nd among 35 steel corporations by World Steel Dynamics (WSD) in June, 2019.

In order to enhance its operational synergy, CSC group has diversified its businesses into five business areas: Steel, Engineering & construction, Industrial materials, Logistics, and Services and investments.

Chronology of Major Event

1970

Dec 3, 1971	CSC is officially registered, with head office located in Taipei.
Sep 16, 1972	Kaohsiung Plant Site Office is established.
Sep 1, 1974	Phase I construction commences.
Dec 26, 1974	CSC stock is listed on Taiwan Stock Exchange Corporation.
Sep 15, 1975	Head office relocates to Kaohsiung. Plant Site Office closes.
Jul 1, 1977	CSC becomes a state enterprise.
Dec 16, 1977	Phase I is completed, with capacity of 1.5 Mt (in terms of crude steel) per year.
Jul 1, 1978	Phase II construction commences.

1980

Jun 30, 1982	Phase II is completed. Capacity reaches 3.25 Mt per year.
Jul 1, 1984	Phase III construction commences.
Apr 30, 1988	Phase III is completed. Capacity reaches 5.652 Mt per year.

1990

Jul 15, 1993	Phase IV construction commences.
Apr 12, 1995	CSC is privatized.
May 31, 1997	Phase IV is completed. Capacity reaches 8.054 Mt per year.
Jun 2, 1998	CSC Group's corporate identity system is formally introduced to the public.

2000

Apr 15, 2006	Annual production capacity is officially raised to 9.86 Mt owing to success in equipment renovations and improvements carried out over the years.
Nov 22, 2006	Groundbreaking for the China Steel Building takes place.
Oct 6, 2008	Dragon Steel Corporation (DSC) becomes a wholly owned subsidiary of CSC.

2010

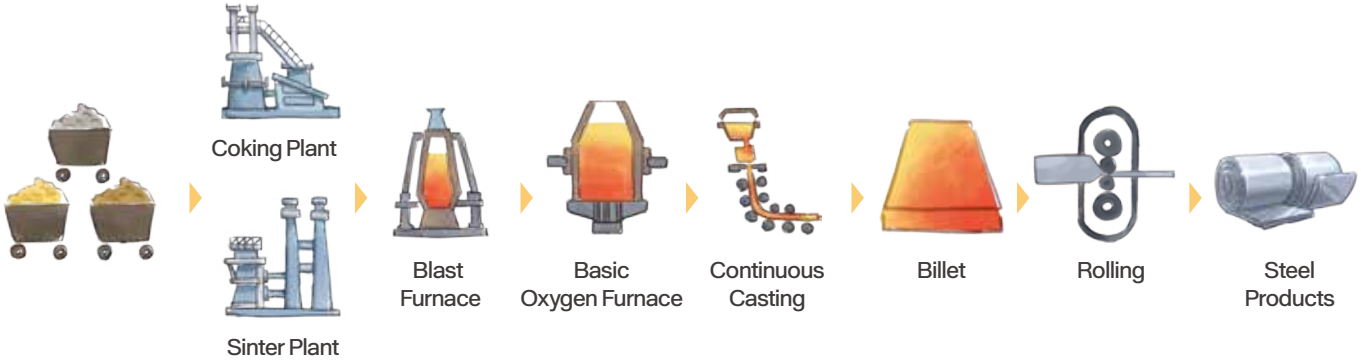
Jun 30, 2010	DSC's stage II phase 1 expansion project is completed. CSC Group's capacity reaches 13.36 million tonnes per year.
Mar 5, 2013	DSC's stage II phase 2 expansion project is completed. CSC Group's capacity reaches 15.86 Mt per year.
Oct 22, 2013	China Steel Building is inaugurated.
Dec 20, 2017	The Board of Directors approves the initiation of the revamp of the coke ovens (phases I and II).
Dec 31, 2018	CSC Group's operating revenues in 2018 sets the record of exceeding 400 billion TWD for the first time.

2020

Jan 16, 2020	CSC positions itself as a steel mill that produces premium products with high value and devotes itself to the development of the green energy industry as its operation and development means to enhance its competitiveness for the next 50 years.
Feb 21, 2020	CSC sets a new milestone in its pricing system by offering monthly and quarterly pricing simultaneously for the first time.

*Mt: Million tonnes

Production Work Flow



Raw Materials → Ironmaking → Steelmaking → Rolling → Products

Sintering

Iron ore, flux, and coke breeze are mixed, granulated, and then charged into the sintering machine, where coke breeze is ignited. The hot sinter clumps go through crushing, cooling, and screening processes. They are then sent to Blast Furnace as the main material for ironmaking.

Blast Furnace

Iron ores, cokes, and fluxes are charged into BF from the top to react with the hot air flow introduced from tuyeres. Molten hot metal and slag are produced.

Continuous Casting

A ladle filled with liquid steel is transferred to turret from upstream plant by crane, charged into a tundish, and distributed into molds. It then cools down, solidifies, and comes to complete solidification through secondary cooling. It is then straightened and, according to each order, cut into blooms (with a square cross section) or slabs (with a rectangular cross section). The semi-finished products are conditioned if necessary and then sent for rolling.

Coking

Coking coals are mixed, crushed, and then charged into the coke oven. Carbonization in oven produces hot coke and crude coke oven gas.

Basic Oxygen Furnace

Hot metal is sent to a pretreatment station for de-S / de-P and then sent to BOF for oxygen blowing. According to the characteristics of steel and quality demand of each order, it is sent for secondary refining for composition adjustment and then sent for continuous casting.

Rolling

Semi-finished products are inspected and grinded / scarfed to remove surface defects. They are then rolled into bars, wire rods, plates, coils, and sheets.

0.3 Sustainability Performance

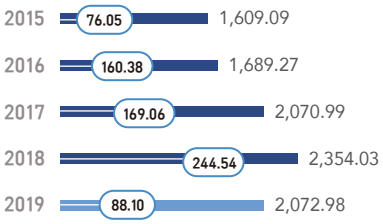
0.3.1 Sustainability Performance Overview

Note: For better quality of our report, there were several data changes, denoted with *, due to the calculation or coverage scale revised.

MM: Million; k: 1,000; t: tonne; tCS: tonne Crude Steel

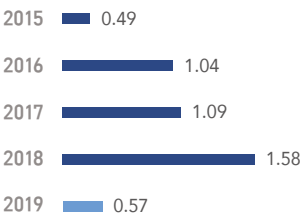
Revenues and Net Profit

Revenues / Net Profit
Unit : 100 MM TWD



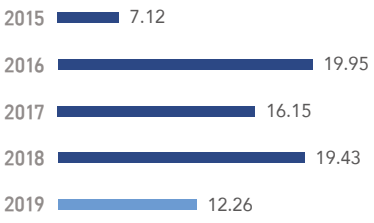
EPS

Unit : TWD



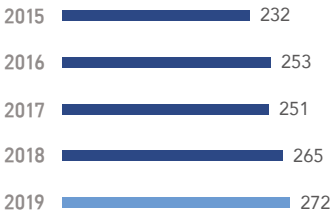
Income Tax

Unit : 100 MM TWD



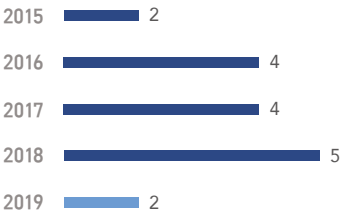
Long-term Capital to Fixed Assets Ratio

Unit : %



Return of Assets

Unit : %

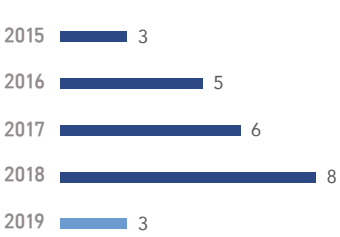


Liabilities to Assets Ratio

Unit : %

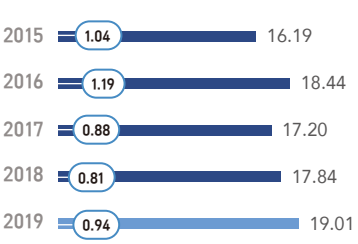
Return on Equity

Unit : %



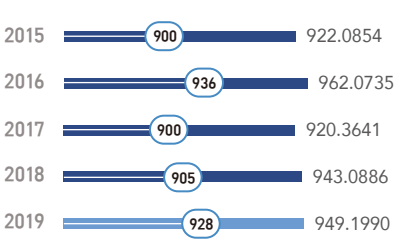
R&D Expense

Expense / Ratio
Unit : 100 MM TWD ; %



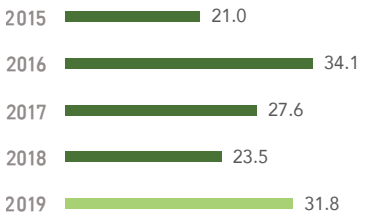
Production and Productivity*

Production / Productivity
Unit : 10,000 tCS ; tCS / man-year



Investment on Energy and Environment

Unit：100 MM TWD



Self-generated Electricity

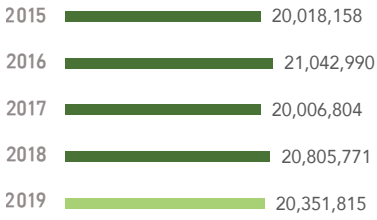
Unit：%

Energy Intensity

Unit：GJ / tCS

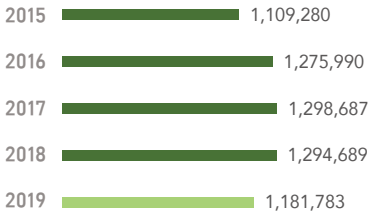
GHG Emissions - Scope 1

Unit：tCO_2e



GHG Emissions - Scope 2*

Unit：tCO_2e

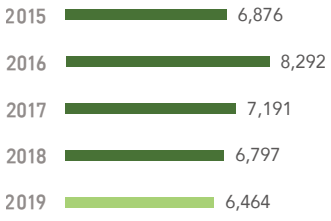


GHG Intensity*

Unit：tCO_2e / tCS

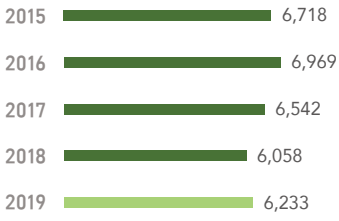
NOx Emissions

Unit：t



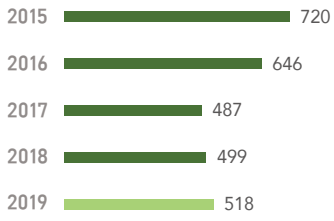
SOx Emissions

Unit：t



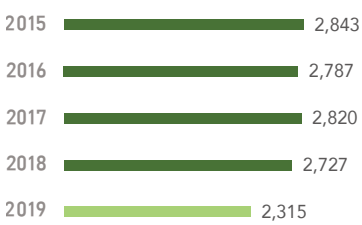
VOCs Emissions

Unit：t



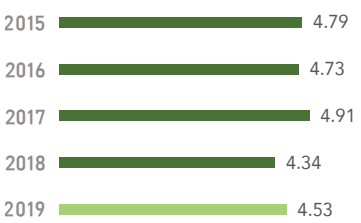
Particulate Emissions

Unit：t



Water Intensity

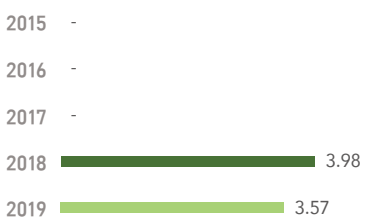
Unit：t / tCS



New Water Intensity

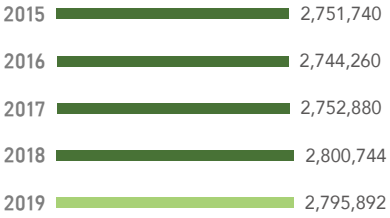
Unit：t / tCS

Note: The data of new water intensity is collected after reclaimed water introduced in 2018.



Production Process Water Recirculation

Unit：Million liters

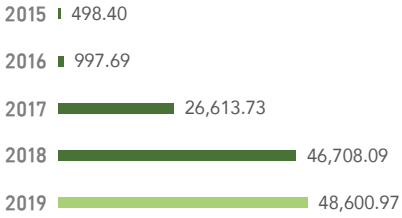


Processing Water Recycling Rate

Unit：%

Capacity of Solar Power Generation(Cumulative Value)

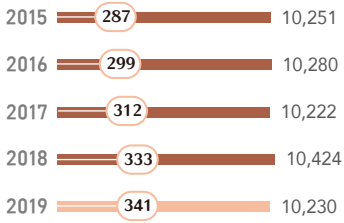
Unit：kW



Number of Employees

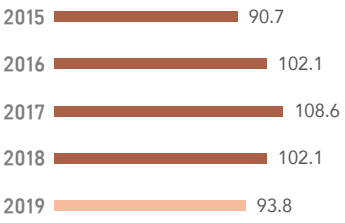
Persons Female

Unit：Persons



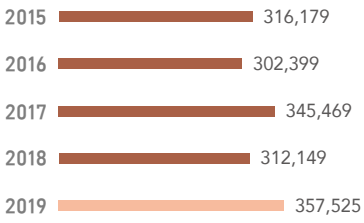
Training Expense

Unit：MM TWD



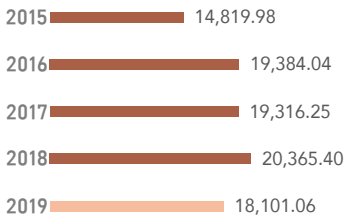
Training Hours

Unit：Hour



Salaries and Welfare

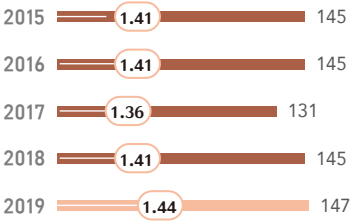
Unit：MM TWD



Disabled Hires

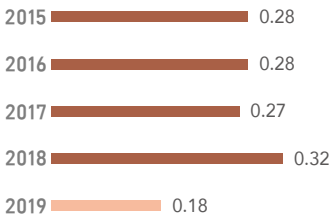
Persons Ratio

Unit：Persons；%



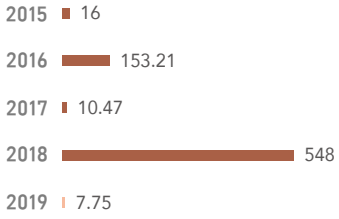
Disability Frequency

Unit：Incidents / MM working hours



Disability Severity

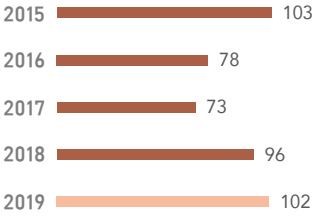
Unit：Lost workdays / MM working hours



Social Expense

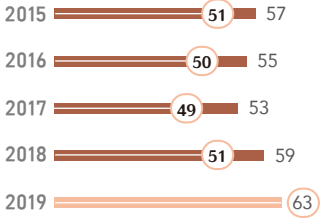
(Including donation)

Unit：MM TWD



Environmental Education Bus

Tours Schools



0.3.2 Awards and Recognitions

Be Recognised as worldsteel Sustainability Champions in 2019

Obtained the Climate Change Action Certificate issued by worldsteel

Prizes were given from Taiwan Corporate Sustainability Awards

Sustainable Navigator Award from BSI

CSC was granted the No.1 Water Conservation Award by the Water Resources Agency, MOEA.

Sustainability

- RobecoSAM Sustainability Award-Bronze Class 2019
- Dow Jones Sustainability Indices (DJSI) Industry member in DJSI-Emerging Markets 2019
- Management level (B) for CDP Climate Change and Water project
- Be Recognised as worldsteel Sustainability Champions by the World Steel Association (worldsteel) in 2019
- Obtained the Climate Change Action Certificate issued by worldsteel
- 8 prizes were given from Taiwan Corporate Sustainability Awards, including “Climate Leadership Awards,” "Circular Economy Leadership Awards," "Sustainable Water Management Awards," “Supply Chain Management Awards,” etc.
- "Sustainable Navigator Award” from BSI
- "2019 Corporate Citizen Award ” from CommonWealth Magazine, ranked top 20 among the top 100 big businesses

Economy

- Constituent of “TWSE Corporate Governance 100 Index,” constituent of “FTSE4Good Emerging Index,” and constituent of “FTSE4Good TIP Taiwan ESG Index” (created by FTSE Russell in partnership with TWSE)
- Top 20% listed companies in “Corporate Governance Evaluation” by TWSE, and top 5% for the third time in 2019
- “Authorized Economic Operator (AEO)” by Customs Administration, Ministry of Finance
- “2018 Golden Vessel Awards” by Taiwan International Ports Corporation, Ltd.
- 8th place of “2019 Taiwan Intellectual Property Office Top 100 patent applicants,” 7th place for patent granted, 4 years in a row being in top 10, and 1st place in the category of traditional industries
- "The Turnkey Project of Kaohsiung Circular Light Rail Transit (Phase II)" ranked 1st place in the contractor's performance evaluation by the Kaohsiung MRT during the first half of 2019

Environment

- "Outstanding Green Procurement Unit" from EPA
- "Outstanding Private Enterprise Green Procurement Unit" from KSEPB
- The water treatment plant of the Utilities Dept. was awarded the industry prize of the "Best Water Conservation Performance in 2019" by the Water Resources Agency, MOEA
- "2019 Annual Outstanding Vendors in Voluntary Reduction of Industrial GHG” by IDB of MOEA
- Obtained the BS 8001 circular economy certification for "BOF Slag Used as Aggregate in Asphalt Pavement" from BSI and obtained the highest level (Optimizing)

Society

- Ranked 15th in the Top 100 Most Desirable Corporations and 1st in the traditional manufacturing category selected among the young generations by Cheers Magazine in 2019
- CSC and Labor Union of CSC were rewarded by the Kaohsiung City Government Labor Affairs Bureau and Minister Ming-Chun Hsu from MOL (She issued a reward of 250,000 TWD) for signing the Collective Agreement in 2019

1 Sustainable Operation

1.1 Message from Top Management

Chairman Chao-Tung Wong

President Shyi-Chin Wang

Steel is an important green material for building a circular economy and low carbon society. Since the beginning of its establishment, CSC has been committed to process improvement, energy conservation, and actively promoting the recycling of energy resources. With economic growth, environmental protection, and social well-being as its main goals, CSC strives for sustainable development. From the completion of the first-stage plant construction between 1977 and 2019, CSC's investment in various environmental protection facilities totaled NT$ 70.96 billion. Between 1992 and 2019, the particulates emission reduction was 91.25%, SOx emission reduction was 75.90%, NOx emission reduction was 58.31%, and the VOCs reduction was 77.45%.

The main objectives for sustainable operations in 2019 were as follows:

I. Accelerate the process of replacing old equipment and expanding environmental improvement plans

Continuous equipment inspections, replacement of old equipment, and environmental improvement plans were implemented in order to strengthen production efficiency, enhance product grade and quality, improve workplace safety, and strengthen environmental protection and energy conservation. The two air pollution improvement plans in 2019 included the completion of the enclosed sinter storage building and the No. 1 reheating furnace revamping for plate mill, which reduced the total particulate emissions by 14.7 tonnes / year, SOx emission by 3.1 metric tonnes / year, and NOx emission by 4.2 tonnes / year. In addition, CSC will continue to invest in 4 different air pollution improvement plans from 2020 to 2021 including the addition of the flue-gas desulfurization equipment to No. 1 sinter plant and phase 1 of the enclosed coal storage construction. It is expected that by 2021, the particulate emissions will be reduced by another 120.2 tonnes / year, SOx emission by 803.6 tonnes / year and NOx emission by 11.5 tonnes / year.

II. Develop advanced value-added products to enhance industrial competitiveness

CSC adheres to the philosophy of upgrading the industry by enhancing the material used, and has long been committed to transforming and developing Taiwan's steel industry. To provide customers with comprehensive solutions, CSC continues to progress in the direction of providing high grade value-added products which are more energy-saving and environmental friendly. Through promoting open innovation, establishing Engineering Research Centers, Joint Research Laboratories, and forming both industrial and academic alliances, CSC gathers efforts across industries, universities, and research institutes to build a solid foundation for innovation within the steel industry and improve the international competitiveness of Taiwan's steel industry.

III. Establish smart manufacturing and refined steel plant

2019 was the first year of implementing AI within CSC. With the goal to extend the foundation of smart manufacturing to all employees, 3T (Technology, Talent, and Team) has been promoted as the main focus, including the construction of a hybrid cloud intelligent platform (Technology), planning and assisting group personnel in AI training (Talent), and a comprehensive promotion of smart solutions (Team). New digital technological tools such as cloud, big data and artificial intelligence are used to construct a smart system that carries out production and marketing activities in order to implement changes to the system, process, organization, and operational model. This boosts the company's operating efficiency and acts as CSC's solid foundation for the transformation into a refined steel plant.

IV. Robust development of green energy and upgrading local industries

CSC has actively invested in offshore wind foundation and the solar photovoltaic industry while achieving excellent results. At the end of 2019, the construction of the underwater cable infrastructure in Xingda Port was completed. Furthermore, CSC has been collaborating with domestic supply chain manufacturers to provide the underwater foundation required for grid-connected wind farms in 2021 so as to start the localization of offshore wind power. As for the solar photovoltaic sector, by the end of December 2019, 83.2MW of solar photovoltaic system had been built, and the cumulative power generation had reached about 125 million kW. In turn this will reduce annual CO_2 emissions by more than 66,000 tonnes.

V. Commit to circular economy and moving towards sustainable operations

Steel is an important resource for the country's economic development; it is also essential to the construction of a circular economy as well as a low-carbon society. Through studies and projects such as "District energy integration in Linhai Industrial Park," "Application of recycled polluted water," "Application of BOF slag resources," and "Independent supply of refractory materials," CSC uses its core capabilities to promote the integration of regional energy resources, diversify the development of by-products, fully recycle to reduce energy use and waste generation. This in turn, lowers the negative impact of the operational process on the environment and triggers a comprehensive synergy in a circular economy.

VI. Strengthen the awareness of occupational safety and build human capital

One of CSC's major management efforts is safety and health management. Through various measures such as intrinsic safety and change management, occupational safety management is strengthened, and several safety and health educational training programs are organized to reinforce the occupational safety awareness of employees and cooperative partners. Safety is the first and foremost principle to follow and this creates a safe work culture as well as a safe workplace. In addition, employees are encouraged to accumulate cross-departmental and interdisciplinary experiences in order to cultivate broad and systematic viewpoints, improve the ability to cope with stress, and increase sharpness and determination, which will in turn increase the company's human capital.

Looking ahead to 2020, CSC will focus on "high-value refined steel plants" and "green energy" as the main goals of operations and development in the next 50 years. With the goal to increase competitiveness and deepen its sustainable foundation, CSC has formulated the operating policies for the year 2020 as below:

Enhance
overall performance through comprehensive cost reduction and profit increase

Implement
diversified services to expand the market

Create
smart steel plants to create efficiency

Maintain
occupational safety and protect the environment to increase credit worthiness

In the future, CSC will formulate strategies and demonstrate its strong commitment and ability to execute with a cautious but optimistic attitude. With each firm and steady step, CSC will continue to save energy, protect the environment, and create value with new innovation in order to become a trusted global steel company.

1.2 Operation Concepts

Values

Teamwork, entrepreneurial approach, down-to-earthiness, and pursuit of innovation

Vision

We aspire to be a trustworthy steel company of global distinction that pursues growth, environmental protection, energy saving, and value innovation

Operation Concept

Improving social well-being, implementing actual performance, exerting group strength, and stressing human management

Based on CSC vision "We aspire to be a trustworthy steel company of global distinction that pursues growth, environmental protection, energy saving, and value innovation." and CSC values "Teamwork, Entrepreneurial approach, Down-to-earthiness, and Pursuit of innovation", CSC actively implements its operation concepts of "improving social well-being, implementing actual performance, exerting group strength, and stressing human management."

In order to strengthen long-term competitiveness and sustainable development, CSC maps out its five years operation and development strategies in steel business year by year, roots its core steel businesses deeply by new technologies and management schemes, and adheres to integrity and fairness. CSC constantly endeavors to align with Group's vision as "Bases the foundation in Taiwan, develops in Asia and integrates diverse businesses of steels and materials, engineering and services, mines and resources with philosophies of environmental protection and energy saving."

Five-year Strategies

CSC maps out its 2020-2024 operation and development strategies in steel business as follows:

1. To launch succession plans, improve administrative effectiveness, create a LOHAS environment, and promote the image of CSC Group;
2. To improve global logistics, strengthen strategic partnerships, refine overseas presence, and introduce smart commerce;
3. To integrate resources of CSC Group, continuously review joint ventures, and enhance synergies across units in CSC Group;
4. To develop highly competitive products along with low-cost processes and value-added applications, promote smart manufacturing, and strengthen industrial services;
5. To strengthen engineering capabilities of CSC Group and develop green energy along with environmental engineering businesses;
6. To reduce costs by refining the manufacturing processes, carry out resource planning to achieve short delivery time, elaborate on energy saving and environmental protection, strengthen occupational safety and health, and raise the value of CSC Group' s steel products.

1.3 Sustainability Directives

The 17 Sustainable Development Goals (SDGs) announced by the UN in 2015 are the guiding principles of the members for the next 15 years. In the spirits of the world steel Sustainable Development Charter, CSC developed the Corporate Social Responsibility Policy in 2012, and set the Corporate Social Responsibility Practice Principles. Through taking the responsibility as a corporate citizen and enhancing contribution to national economy, CSC improves the living quality of employees, the community, and society to promote its competitive advantages based on corporate social responsibility. With reference to the SDG Selector tool and SDG Compass steps, CSC examined the CSR policy and identified CSC's core SDGs. Furthermore, CSC took into consideration the sector and regional characteristics and referenced "Taiwan's SDGs" announced by the National Sustainable Development Network in July 2019 to summarize the benefits of CSC's core SDGs.

For more details [SDGs Directives] https://www.csc.com.tw/csc_e/hr/csr/ov/ov7-4.htm

Core SDGs

CSR Policy	Strengthen competitiveness and create shareholder profit to ensure corporate sustainability Meet customer requirements and enhance service advantage to achieve co-prosperity Persist in energy saving and emission reduction and adopt renewable resources to build a low-carbon society	Take care of employee welfare and create a premium environment to facilitate employee development Enhance industrial safety practice to eliminate occupational hazards and practice environmental protection to improve pollution-reduction performances	Optimize the supply chain system and improve communication to share sustainable practices Join professional organizations and provide a solid technology foundation for industry upgrade	Support government policies and engage in construction to improve overall effectiveness Devote to social harmony and promote public welfare to benefit local communities
Stakeholder Engagement	Shareholders Customers and Traders	Employees, Contractors	Suppliers Steel Industry Peers Academic Researchers	Governmental Authorities Society

Core SDGs

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Taiwan SDGs Targets	Performances and Highlights
8.1: Take innovation, employment and distribution as core values to maintain moderate economic growth.	● 5.23 million tonnes of high-grade steel orders in 2019. ● In 2019, the starting salary of entry-level employees was 28,500 TWD, and 38,400 TWD for professional-level employees. The annual salary increase rate was 3.5%.
8.2: Increase the added value of the industry and promote the development of the Internet of Things and the digital economy.	● 40 smart solutions were promoted in 2019 in order to improve production and sales efficiency as well as customer satisfaction. ● 16 R&D alliances were launched with 66 companies and 8 academic institutes to jointly complete 13 science and technological projects.

Taiwan SDGs Targets	Performances and Highlights
8.5: Improve labor productivity.	● In 2019, there were 389 new hires, mainly between the ages of 18 and 29 from the southern region of Taiwan, which helped increase local youth employment rate. ● In order to improve the talent capacity of the wind power industry chain, the CSC group dispatched more than 200 employee in 2019 to obtain the highest grade "6G" welder certificate and the DNV GL certification round rail (Orbital) welding operation license.
8.6: Implement learning and training measures to strengthen the employability of the younger generation.	● 291 students has been hired from the cooperative educational programs with 5 schools, including NCKU, Kaohsiung Municipal Chung Cheng Industrial Vocational High School, etc. ● Courses on steel circular economy were organized with participation from more than 470 teachers and students from several universities.
8.7: Promote the safety of the work environment and protect the rights of female workers to participate in the Union.	● 100% of full-time employees with membership qualifications joined the Labor Union of CSC. ● Zero major occupational accident. ● 263 sessions of occupational safety training with 8,685 trainees in total. ● CSC assisted subsidiaries and government units to organize industrial safety trainings, with 68 sessions and a total of 2,108 trainees.
8.10: Improve the efficiency of industrial and agricultural water usage through measures such as water conservation and recycling technology.	● The recycling rate of processed water reached 98.4%. ● CSC introduced the first demonstration project of urban sewage reclaimed water in the country. It recovered 9,075 million liters of reclaimed water in 2019. ● Compared to 2017, when sewage reclaimed water was not introduced, the new water intensity (tonne / tCS) decreased by 37.5% in 2019.
8.13: Develop green energy technology, enhance energy independence and diversity, and encourage the development of renewable energy.	● CSC has invested in Zone #29 project development and collaborated with local suppliers and Wind Turbine Generator (WTG) provider to build an offshore wind supply chain, such as lifting crane vessel, blade, tower and foundation etc.. ● As of the end of 2019, the cumulative installed capacity of the solar photovoltaic system had reached 83.2 MW, and the cumulative power generation had reached about 125 million kWh. In the future, CSC can contribute at least 100 million kWh of green electricity and 53,000 tonnes of CO_2 carbon reduction annually. ● The rooftop solar power generation system of the factory building has a capacity of 48.6MW, which is the largest rooftop solar photovoltaic power station within a company in Taiwan.

Make cities and human settlements inclusive, safe, resilient and sustainable

Taiwan SDGs Targets	Performances and Highlights
11.2: Provide the public with a safe, affordable, and highly accessible transportation system.	● Promoting turnkey projects such as "Danhai Light Rail Transit", "Kaohsiung Circular Light Rail Transit, and "Ankeng Light Rail Transit". ● In 2019, 4,786 employees applied for the monthly MRT ticket subsidy in the CSC Group, and 68,471 employees took the free shuttle bus from Hsiao Kang Station to CSC. ● The promotion of the "Factory Traffic-safety Improvement Plan" reduced the number of violations in the plant by 50%.
11.6: Reduce the harmful effects caused by the urban environment. The management of air quality, water, and other municipal waste is included.	● From 2019 to 2021, CSC invested in 6 air pollution improvement projects with a continuous investment of 9.733 billion TWD, which will reduce the annual emission of particulate matter by 134.9 tonnes, SOx by 806.7 tonnes, and NOx by 15.7 tonnes. ● Through the completion of the COD removal tank and the transformation of the two nitrification tanks, the detection values of effluent water are far superior to the legal standards. ● Through continuous improvement on the efficiency of the dust collection equipment, the annual output of dust collection ash in 2019 was 276,000 tonnes, the dust collection efficiency was increased by 2.5%, and the output dust collection ash was recycled by CSC to eliminate risks in environmental pollution.
11.12: Improve the energy saving and carbon reduction benefits of buildings.	● 163 energy-saving projects were completed in 2019, saving a total of 561,000 GJ (about 134,018 million kcal). ● The 2020 Energy Saving Action Plan (2016-2019) aims to reduce 5.19 million GJ, which is equivalent to a reduction of 370,000 tonnes of CO_2e emissions. ● In response to national energy saving targets and regulatory requirements, the current average annual power saving rate is 1.69% from 2015 to 2019. ● To promote the CSC Group's energy-saving measures and build an energy-saving technology exchange platform, the group affiliates have taken turns to hold energy-saving seminars since the third quarter of 2018. By the end of 2019, six seminars had been completed to maximize the benefits of the CSC Group. * Energy-saving measures include buildings and process equipment, etc.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Ensure sustainable consumption and production patterns
Taiwan SDGs Targets	**Performances and Highlights**
12.1: Implement the green factory system, promote the Cradle to Cradle (C2C) design concept, and encourage companies to produce green and low-carbon products.	● In 2019, 3.504 million tonnes (Mt) green products helped save energy and reduce carbon emissions to an estimated 6.517 Mt. ● In 2019, 6.208 Mt of process by-products (wet base) were produced. The ratios of on-plant and off-plant recycling were 26% and 74% respectively.
12.2: Control the use of key materials, and include the sustainable management of the material life cycle to promote the sustainable use of raw materials.	● Introduce self-produced scrap steel in the production process to promote the sustainable use of raw materials. ● All the waste pickling solution produced by CSC is recycled in the factory, which reduces the cost of purchasing fresh hydrochloric acid and does not require outsourcing treatment.
12.4: Reduce waste generation through green production, improve waste recycling technology capabilities, promote recycling industry towards higher efficiency, and manage chemical substances and wastes in accordance with international regulations.	● Promote "BOF Slag Used as Aggregate in Asphalt Pavement" in 2019 to pass the verification of BS 8001 circular economy standard and obtain the highest rating (Optimizing). ● Resources of industrial waste are properly recycled, with a recovery rate of 95%.
12.5: Promote the cross-industry cooperation chain, integrate energy resources for effective recycling, and promote the development of Taiwan's circular economy.	● In terms of promoting District Energy Integration to increase energy efficiency, the district energy integration steam sales volume was 1.544 million tonnes in 2019, which could reduce CO_2e emissions by about 371,000 tonnes. ● In 2019, CSC followed the "Industrial Resource Integration Plan" and 24 enterprises were involved in the Industrial Ecology Network with CSC as the center.
12.6: Encourage enterprises to adopt sustainable development measures and at the same time, disclose information on sustainable development and ensure the accuracy and quality of such information.	● CSR report has been published since 2007, and the CSR website has been established to improve the disclosure of non-financial information. ● The greenhouse gas scope 3 emissions have been estimated annually from 2015, and a third party inspection agency is entrusted to verify the results. ● To build local reduction factor of green product, CSC completed CFP calculation on 23 products and had it verified by third party.
12.7: Promote public and private sector to increase green procurement.	● The total amount of green product procurement reported in 2019 was about 142 million TWD, far above the threshold of recognition by EPA of the Executive Yuan (30 million TWD)

1.4 Stakeholder Engagement

CSC values the rights and opinions of its stakeholders and sets proper communication channels to promptly understand and address stakeholder expectations and demands. To appropriately respond to the relevant concerned issues of stakeholders, each department of the company divides the work to take responsibility for stakeholder communication. In addition, the "Corporate Governance and Sustainability Committee" established by CSC in November 2019 regularly reports the results of the annual stakeholder engagement to the Board of Directors.

Besides the Annual Report and Operation Report, CSC also publishes the annual CSR Report and updates websites timely (via the corporate website, CSR website, etc.) to disclose the information about corporate governance, energy and environment management or social involvement. CSC uses the websites not only to enhance information accessibility, transparency, timeliness, completeness, and interactivity status, but also to improve reader satisfaction by collecting feedbacks online.

Stakeholder Identification

For stakeholder identification, CSC refers to experiences of its departments and international steel industries and applies AA1000 Stakeholder Engagement Standard (AA1000SES). CSC's key stakeholders include employees and contractors, customers and traders, governmental authorities, suppliers, shareholders, steel industry peers, the society (including local communities, media press, and NGOs / NPOs), and academic researchers

Stakeholder Group or personal which influences CSC or is affected by CSC.

Employees

Concerned Topics

① Employee Wages and Benefits
② Talent Recruitment and Retention
③ Labor / Management Relations

Meaning for CSC

Employees are an important asset of the company and a partner for growth. Besides working together to create a safe work environment and ensure the employee's human rights, CSC also enhances the employee's skills through career development, education, training, and cultivate talent capital to strengthen the company's competitiveness.

Communication Channels

// Board representation by Labor Union of CSC; collective bargaining
// Labor-management meeting (every month), regular departmental meeting (union representative present), Safety and Health Committee meeting (every 2 months).
// Seminar between the managerial departments and supervisors of the union, and the shareholding trust committee (every 6 months)

Engagement Highlights in 2019

- The 5th Collective Agreement was signed on August 15, 2019.

Contractors

Concerned Topics

① Labor / Management Relations
② Occupational Safety and Health
③ Labor Practices

Meaning for CSC

Contractors are an indispensable part of the supply chain, and are also considered as colleagues who thrive with CSC. Therefore, CSC's management and care towards contractors are on the same level with its employees, and CSC collaborates with contractors to improve their working conditions.

Communication Channels

// Contractor job safety meeting, Contractor environment, safety and health meeting, Contractor Safety and Health Committee meeting (monthly).
// Joint-work negotiation meeting, outsourcing management meeting (annually).
// Contractor training (irregular).

Engagement Highlights in 2019

- Communicated and promoted safety and health issues in monthly meetings.
- Communicated / promoted occupational safety and the management of collaborative partnerships.
- Provided training courses and assessments for contractors.

Communication Channels and Effectiveness

CSC values the rights and opinions of its stakeholders and sets public, direct communication channels by providing related information of sustainable development in CSC, timely understanding and replying the concerned topics from stakeholders, and continually viewing and improving the achievement of corporate social responsibility.

Customers and Traders

Concerned Topics

① R&D / Product Quality
② Customer Services Management
③ Talent Recruitment and Retention

Meaning for CSC

Customers are the main source of CSC's operating income. "Pursuing customer satisfaction, implementing high quality service and protecting customer rights" is CSC's highest principle while dealing with customers and traders. CSC also exerts its strength to lead downstream customers to expand applications, promote close communication between customers, and maintain the integrity of the overall industry.

Communication Channels

// Production-sales meetings (every 3 months) and customer satisfaction surveys (annually).
// Customer briefings, R&D alliances, professional training, technical seminars, market surveys, and customer interviews (irregular).

Engagement Highlights in 2019

- 40 joint production and marketing meetings for import and 4 for export.
- The overall score of the customer satisfaction survey was “good” in 2019.

Governmental Authorities

Concerned Topics

① Waste Management
② Raw Materials Management
③ Community Involvement and Charity

Meaning for CSC

CSC operates in accordance with the policies and regulations stipulated by the governmental authorities, adheres to the environmental protection concept of circular economy, and fulfills corporate social responsibilities.

Communication Channels

// Actively visit national and local legislators and the authorities to communicate about reasonable regulations and policies.
// Participate in research discussions, forums, public hearings, training courses, and informal exchanges regarding a variety of policies and regulations (irregular).

Engagement Highlights in 2019

- Participated in the Circular Economy Forum of Taiwan Sustainable Supply hosted by the IDB, MOEA.
- Participated in Taiwan Circular Economy 100 (TCE 100) and the Asia Pacific Circular Economy Roundtable.

Suppliers

Concerned Topics

① Labor / Management Relations
② Labor Practices
③ Occupational Safety and Health

Meaning for CSC

CSC's suppliers and contractors are divided into several categories: raw materials, equipment, security and transportation. Because they are all an integral part of CSC's normal operations, they must comply with CSC's requirements and abide by relevant codes of conduct.

Communication Channels

// Participate in workshops (averages 20 per month).
// Organize forums and provide provisions of safety design specifications (irregular).

Engagement Highlights in 2019

- Discussed specifications, terms, and prices; paid visits to investigate production and quality.
- Communicated and discussed market information.
- Assessed suppliers participating in the localization of parts at the end of the year and awarded them with certificates.

Shareholders

Concerned Topics

① Operating Financial Performance
② Codes of Conduct / Ethics
③ Energy Management

Meaning for CSC

Shareholders provide the capital necessary for the long-term development of the company, which is an important foundation for CSC to move towards sustainable operation and look after the company's strategy for sustainable growth and future development. CSC should develop steadily and make profits for shareholders.

Communication Channels

// Toll-free shareholder service hotline (0800-746-006) and email (f1000@mail.csc.com.tw)
// The shareholders meeting is convened in the second quarter annually and E-voting is adopted with full shareholder participation in the voting process. The results are announced on the open data platform and the CSC website (annually).
// Inviting domestic and foreign institutional shareholders, participation in investor conferences held by brokers (irregular).

Engagement Highlights in 2019

- Communicated with shareholders for more than 100 times.
- Participated in 3 domestic conferences:
  - MasterLink Securities Spring 2019 MasterLink Investment Forum (Taipei)
  - CTBC 2019 Investment Outlook Forum (Taipei)
  - Fubon Securities and CSC Joint Institutional Investor Conference (Taipei)

Steel Industry Peers

Concerned Topics

① R&D / Product Quality
② Labor / Management Relations
③ Occupational Safety and Health

Meaning for CSC

CSC maintains good interaction with the peer companies within the steel industry and actively participates in the institutions and associations of the steel industry. Through exchanges and cooperation, CSC is able to obtain the latest information on regional industry, technology development and policies, which serves as a good basis for business development and strategic cooperation. Also, CSC keeps close ties with the international scene.

Communication Channels

// Participate in meetings held by the Taiwan Steel & Iron Industries Association, worldsteel, SEAISI (irregular).
// Bilateral and multi-lateral communication, official visits and meetings (irregular).

Engagement Highlights in 2019

- A total of 10 technical exchange seminars with well-known foreign steel plants.
- Participated in the worldsteel Council and various steel committees.
- Engaged in SEAISI touring lectures, ASEAN Iron & Steel Sustainability Forum, and 2019 SEAISI training program.

Society

Note: Community and local groups, journalists, non-profit organizations and opinion leaders are included.

Concerned Topics

① Air Pollutants Management
② Waste Management
③ Talent Recruitment and Retention

Meaning for CSC

Through community and local groups, journalists, non-governmental organizations and opinion leaders, CSC understands the society's expectations about its corporate social responsibility. By paying attention to the local community and a sense of responsibility, CSC dedicates itself to social participation in diverse manners.

Communication Channels

// Visit and communicate through the Public Affair Dept.
// Press release or interviews arrange

Engagement Highlights in 2019

- A total of 400 visits and negotiations.
- 42 press releases.
- Arranged 38 press interviews for disclosing important company information.

1.5 Material Topics

Besides daily practices of stakeholder engagement, CSC has set materiality analysis procedures in line with GRI Standards and AA1000SES. CSC adopts the principles of stakeholder inclusiveness, materiality, and completeness to identify material topics through collecting and review, prioritization and identification, and validation. For topics of high concern and high impact, CSC discloses its management approach and performances in this report and online. These serve to provide context and reflect CSC's impact in the value chain and serve as means for comprehensive examination and continual improvement.

In 2019, CSC conducted a comprehensive review of sustainable issues. In response to international trends and the group's development, CSC added three topics including “Tax Management”, “Information Security Management”, and “Green Product / Business Development” in the survey questionnaire on material topics, in order to understand the stakeholders' opinions. The original questions on "Sustainable Development Strategy," "Stakeholder Communication" and “Environmental Policy / Management System” will be included in the GRI standards framework again to integrate the disclosure content.

Academic Researchers

Concerned Topics

① Air Pollutants Management
② Energy Management
③ Waste Management

Meaning for CSC

Innovative R&D is the driving force for CSC's continued growth. Communication and cooperation with academic researchers are an indispensable part of external R&D resources. The research results published by CSC represent its social image as well as define the future industrial development trends.

Communication Channels

// Progress review of Engineering Research Center (ERC) and Industry and Academia Alliance (every 2 months).
// Progress review of Joint Research Laboratory (JRL) (mid-term report of outsourced researches) and Research Advising (every 6 months).
// Proposal and final reports of ERC, JRL, and outsourced researches (annually).

Engagement Highlights in 2019

- Held keynote speeches by 27 local and international experts and scholars.
- 82 research projects outsourced to schools and research facilities.
- Invited experts and scholars to guide 1 research project.

Collection and Review

CSC compiles a list of sustainability topics based on the corporate vision and CSR Policies and considering GRI Standards, SDGs, industrial topics and stakeholder feedback are considered as well.

Prioritization and Identification

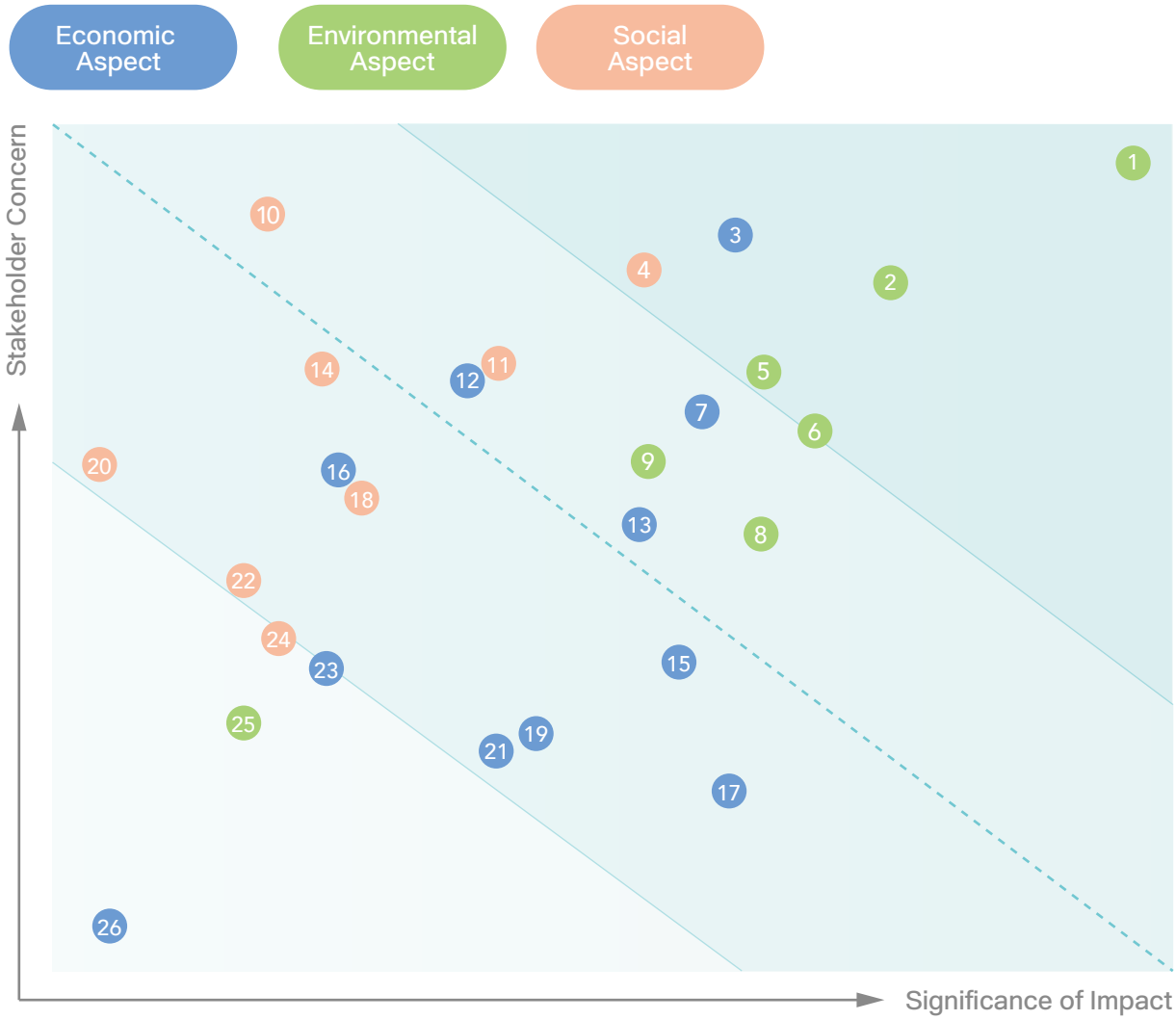
Investigate the extent of external stakeholders' concern about sustainability topics by questionnaires, internal assessments of positive / negative impact levels on each sustainability topics in CSC, and then draw a materiality matrix to prioritize and identify the material topics in CSC.

Verification

Material topics are examined and confirmed of respective GRI Standards. Topic boundaries are determined based on the scopes of impact, industrial characteristics, experience of international peers. Management approaches and performances are disclosed.

Prioritization and Identification

Materiality analysis is based on the results of questionnaire. To find out the concern levels of stakeholders for each sustainability topic, survey is open all year round on the CSC CSR website and stakeholders were invited by CSC departments to participate in the 2019 survey from 4th Nov. to 2nd Dec. 2019. 667 responses were collected and the results of stakeholder concern level was then weighted based on AA1000SES assessment results. For each topic, the impact of CSC was evaluated by all departments in the sense of economic, environmental, and social impacts and considering the probability of impact. The topics are plotted by the concern of stakeholders and the significance of impact into a materiality matrix.



1 Air Pollutants Management
2 Waste Management
3 Operating Financial Performance
4 Occupational Safety and Health
5 Energy Management
6 Water Management
7 Hazardous Substance Management of Products
8 GHG Management and Climate Action
9 Raw Materials Management
10 Talent Recruitment and Retention
11 Labor / Management Relations
12 R&D / Product Quality
13 Green Product / Business Development
14 Employee Wages and Benefits
15 Risk Management
16 Codes of Conduct / Ethics
17 Corporate Governance
18 Labor Practices
19 Supply Chain Management
20 Career Development and Training
21 Information Security Management
22 Diversity and Equal Opportunity
23 Customer Services Management
24 Community Involvement and Charity
25 Biodiversity
26 Tax Management

Note: 1-13 : Topics of high concern and impact are thoroughly disclosed in this report and online.
14-26 : Topics of low to medium concern and impact are disclosed to the corresponding degree.

Material Topics and Value Chain Context

The materiality analysis for 2019 yielded 13 material topics. There are 11 of 13 material topics are constant in 2018 and 2019 with 2 topics ("Green Product / Business Development" and "Raw Materials Management") identified material for the first time in 2019. The management of these topics stems from CSC Values and Operation Concepts and is incorporated into the CSR Policy and risk management strategies. By aspect, the economic topics are managed by annual business directives and targets; the environmental topics and the social topic, Occupational Safety and Health, are by the EHS Policy; the other social topics are by the social participation concepts. The sustainability context of material topics, including positive and negative impacts CSC directly causes and indirectly contributes to through a business relationship, management approaches, and performance, are disclosed in respective chapters. The corresponding material topics and GRI standards can refer to Appendix 1 in this report.

Aspect	Material Topic[I]	Value Chain Impact Boundary[II] ● Direct Impact ◎ Indirect Impact			Chapter
		Upstream	CSC	Downstream	
Economic Aspect	Operating Financial Performance*		●		3.1
	Hazardous Substance Management of Products*	◎	●	●	3.3.3
	R&D / Product Quality *	◎	●	●	3.3
	Green Product / Business Development	◎	●	◎	3.4
Environmental Aspect	Air Pollutants Management *		●	●	5.2.4
	Waste Management *		●	◎	4.4
	Energy Management *		●		5.2.2
	Water Management *		●	●	5.2.5
	GHG Management and Climate Action*	◎	●	◎	5.2.3
	Raw Materials Management	◎	●	◎	5.2.1
Social Aspect	Occupational Safety and Health *		●		6.4
	Talent Recruitment and Retention *		●	◎	6.1
	Labor / Management Relations *		●		6.3

Note: I. While the questionnaire were modified in 2018 and the topic "Employee Wages and Benefits" didn't came out as material in 2018, those material topics that are constant in 2018 and 2019 are denoted by* and there were no significant changes in topic boundaries.
II. Refer to Taiwan industry value chain information platform, OECD steel industry workshop, and international peers for identifying value chain impact boundary of CSC. The core of value chain is CSC, and is included to employees and contractors. The upstream is suppliers of raw material like ore, and the downstream is included to customers and local communities.

Supplementary Explanation for Report Arrangement

In addition to material topics survey, CSC sets up a media database and holds expert forum every year irregularly to keep concerned issues and public opinions instantly. CSC explains the concern issues to stakeholder proactively by the new column "Feature" in the report this year.

Sustainable topics for non-material topics are mainly disclosed at CSR website of CSC. If there is a high relevance to the company's operation, the summary is explained in this report. Following websites are provided to stakeholders who care all kinds of topics about CSC.

Non-material Topics	Website
Tax Management	https://www.csc.com.tw/csc_e/hr/csr/gov/gov9.htm
Information Security Management	https://www.csc.com.tw/csc_e/is/is.html
Customer Service Management	https://www.csc.com.tw/csc_e/hr/csr/in/cm5.htm
Biodiversity	https://www.csc.com.tw/csc_e/hr/csr/soc/soc3.htm
Labor Practices	https://www.csc.com.tw/csc_e/hr/csr/em/em3.htm
Diversity and Equal Opportunity	https://www.csc.com.tw/csc_e/hr/csr/em/em9.htm
Career Development and Training	https://www.csc.com.tw/csc_e/hr/csr/em/em6.htm

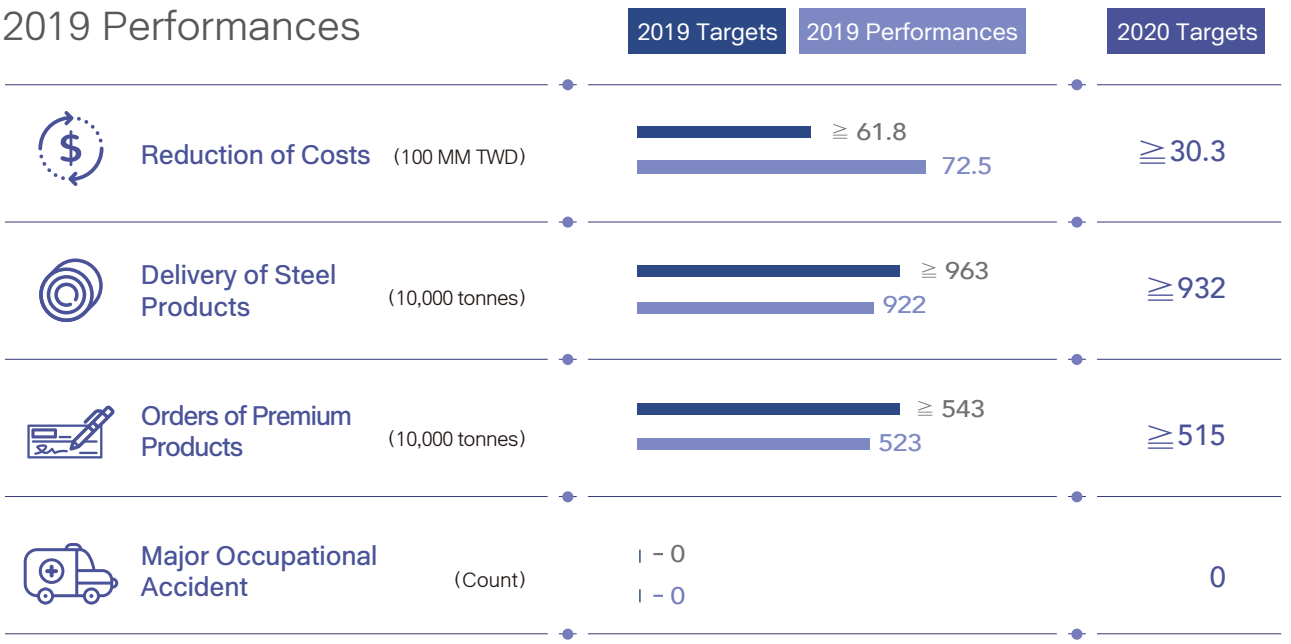
2 Corporate Governance

2.1 Strategies and Targets

2.1.1 Annual Business Directives and Performances

Implementation results for 2019 include the 4 main points as follows :

Directives for 2019	Performances
Improve Occupational Safety and Environmental Conservation	» Improvements on occupational safety: Strengthen the safety awareness of the contracted security supervisors and employees, and implement plans for traffic safety inspections in the factory in order to achieve the goal of zero major occupational accident. » Continuously reduce emissions, comply with the government's reduction policies of autumn and winter. In 2019, the SOx emissions were 0.657 kg / tCS, achieved 105% of the target.
Enhance Quality and Reduce Cost	» With the expansion of the "cost reduction activities", the number of company's cost reduction projects increased from 281 to 418, and the revised target amount was increased from 3.8 billion to 6.18 billion TWD in June 2019. » In 2019, CSC reduced costs by 7.25 billion TWD, achieved 117% of the target.
Develop Intelligent Production and Sales Technique	» Promoted 40 smart solutions, with 12 completed models that have entered the implementation stage to improve production and sales efficiency as well as customer satisfaction. » In 2019, the ratio of premium steel orders was 48.6%, achieving 103% of the target.
Inherit Cultural and Experience to Stabilize Business Operation	» CSC inherits the corporate culture, promotes business disciplines, and builds safety awareness to foster common values and consensus with all employees. Apart from holding courses with over 2,000 participants, supervisors of each plant also help with the promotion and implementation.



Note: "Cost reduction" reflects improvement results; therefore the assessment method was adjusted in 2020 to recognize the items that are shown on the financial report as performance indicators.

2.1.2 Response to Major Impacts

According to the "Global Economic Outlook" released by the International Monetary Fund (IMF) in April 2020, due to the impact of the COVID-19, the global economic growth rate in 2020 is forecasted to be -3.0%. However, the IMF also mentioned that the deferred demand and the short-term concentration of consumption will lead to a post-pandemic economic performance. Overall, the short-term market conditions will be in a turbulent and unsettling situation.

In order to achieve the annual sales target of 2020, CSC continues to strengthen its marketing channels and supply chain services, adopting the strategy of "domestic sales first, supplemented by foreign sales," and adjusting flexibly according to changes in market conditions to accelerate new product development and application. CSC combines government policies with industry trends to improve both niche products and customer relationships. Internally, CSC continues to update production equipment, optimize processes for cost reduction and develop collaborative operations in intelligent production and sales in order to enhance overall competitiveness.

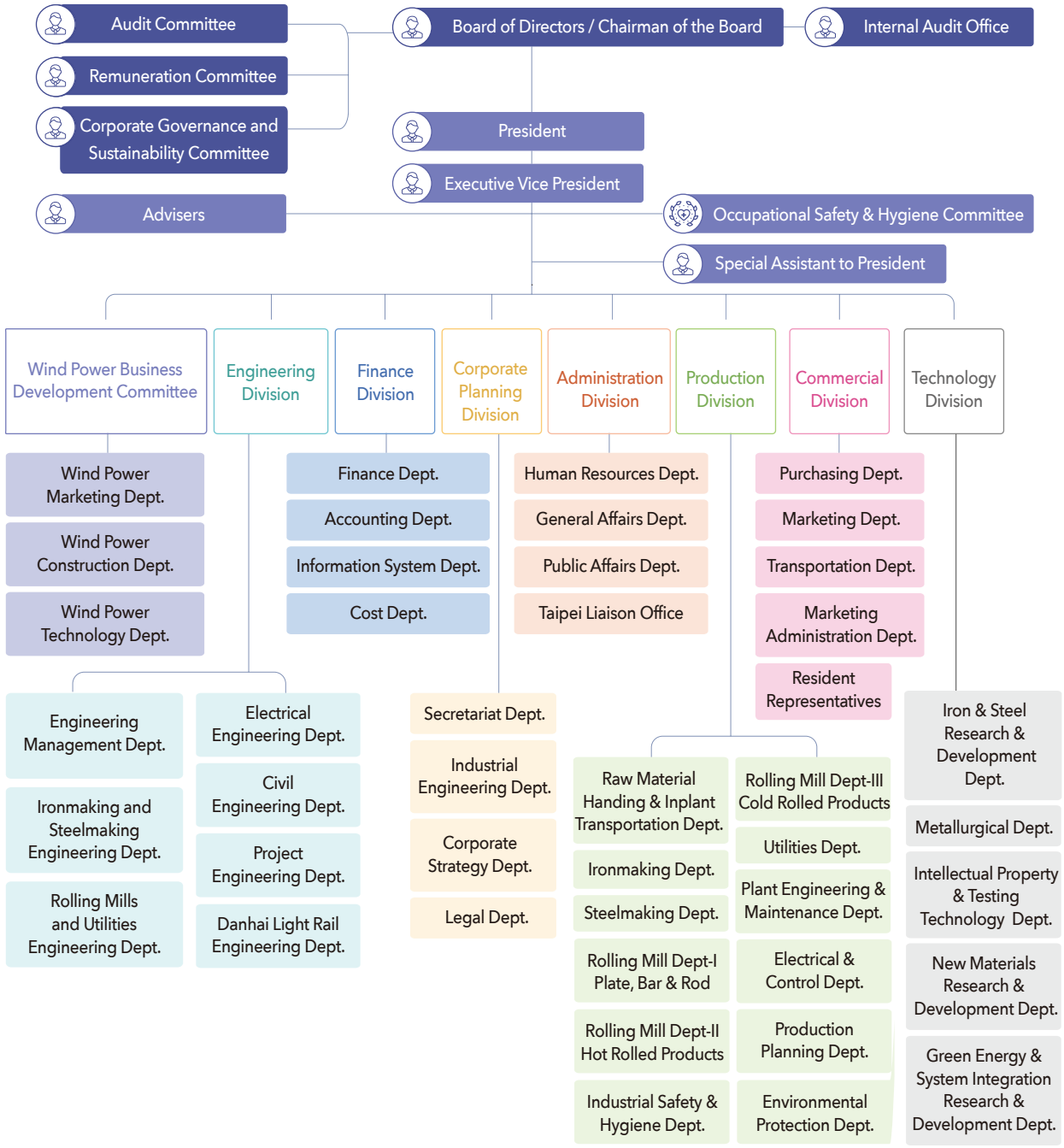
Potential Major Impacts	CSC's Countermeasures
The oversupply on world steel markets has continued as the demand slows. Steel plants yield low profits or face deficits.	Improving the ratio of high-end products to segment the market. Establishing strategic partnerships with important clients to expand market. Setting production bases, sale spots and coil centers in regional economic cooperation systems.
International trade protectionism keeps happening all over the world and emerging economies take the measures of antidumping, anti-subsidies, importing safeguards to limit the imports of steel products.	Actively developing emerging markets with explosive growth such as India. Creating value by development and trial production of new products. Expanding supply scale of products, focusing on the R&D and supply of high-end industrial steel materials, such as cars, home appliances, and electric motors.
Speedy development of global logistics causes the offshoring of downstream industries and reduction of domestic steel demand.	Actively seeking investment opportunities in downstream steel mills and other steel consuming industries.
The uncertainty caused by China-U. S. trade war and sliding domestic economy, competition in China's steel market is fierce. The drastically fluctuated domestic steel price to expand markets.	With flexible price and high-value product as competition advantage, actively develop long-term relationships with potential customers, to stabilize order and strengthen downstream customer adherence. Extending the variety of product supply, focus on the development and supply of hot-stamping automobile parts, high-end appliance compressor and motors for electric vehicles. Exporting high-value-added and niche products, devoting time and effort to the Southeast Asia market and developing distant markets.
South Korea has formed FTAs with EU, USA, and China. China has joined the ASEAN + 3 free trade agreements, and opponent countries are actively negotiating to sign free trade agreements.	Assisting the government in FTA promotion.
BOF slag utilization channels were blocked	Enhancing self-management and controlling the flow of BOF slag utilization to reverse the public misunderstanding of BOF slag. Expand the application of BOF slag.
GHG total quantity control	Conducting annual GHG inventory and verification, implementing energy saving projects to extend emission reduction, and cooperating with IDB and EPA.

CSC's Responsive Measures to COVID-19

In response to the COVID-19 epidemic, CSC, ahead of schedule, set up the "Epidemic Response Team" to put epidemic prevention safety and protection of employees' health as top priority at the end of January 2020. To implement health monitoring and protection, the team brings up daily briefings, develops supporting measures, provides supplies for epidemic prevention, spares space for inventory, and publicizes new information of the epidemic situation as well as health education.

In response to the impact of the epidemic on the industry chain, an "Industrial Care Group" was established to actively care for customers to understand their needs. A full range of customized supports and services are provided, including collecting and integrating needs and suggestions from downstream industries and reporting to the Taiwan Steel & Iron Industries Association to help the government understand the status of the industry, and cooperating with several relief programs provided by the Executive Yuan. In addition, through the management and technical energy of the industrial service group, CSC provides customers with services such as equipment improvement and steel upgrades to conquer this difficult time and to prepare for the future when the economy recovers.

2.2 Organization Chart



2.3 Board of Directors

According to Article 192-1 of the "Company Act" and Article 22-1 of the CSC regulations, the directors adopt the nomination system for candidates. Independent directors and non-independent directors are nominated separately, and shareholders elect from the two candidate lists. All directors are covered by liability insurance to reduce the risks of decision-making.

There are currently 11 directors in the Board of Directors, of whom 3 are independent directors, included 1 female director. The ages of directors are between 50 and 76.

Title	Name	Gender	Representative of Juristic Person	Diversified Core Competences					
				Business Management	Decision-Making	Industry Knowledge	Finance and Accounting	Marketing	Technology
Chairman	Chao-Tung Wong	male	Ministry of Economic Affairs, Taiwan (R.O.C.)	●	●	●		●	
Director	Wen-Sheng Tseng	male	Ministry of Economic Affairs, Taiwan (R.O.C.)	●	●	●			
	Fong-Sheng Wu	male	Ministry of Economic Affairs, Taiwan (R.O.C.)	●	●	●			
	Shyi-Chin Wang	male	Ever Wealthy International Corporation	●	●	●			●
	Chien-Chih Hwang	male	Chiun Yu Investment Corporation	●	●	●		●	
	Cheng-I Weng	male	Hung Kao Investment Corporation		●	●			●
	Yueh-Kun Yang	male	Gau Ruei Investment Corporation	●	●	●	●		
	Chun-Sheng Chen	male	Labor Union of China Steel Corporation	●	●	●			
Independent Director	Shyue-Bin Chang	male	Chair Professor, Vice President , and Dean of College of Informatics, Kao Yuan University Ph.D.in Mechanical and Aerospace Engineering, Cornell University, U.S.A.	●	●	●			●
	Min-Hsiung Hon	male	Emeritus Chair Professor, Department of Materials Science and Engineering, National Cheng Kung University Ph.D. in Materials Science and Engineering, North Carolina State University, U.S.A.	●	●	●			●
	Lan-Feng Kao	female	Professor, Department of Finance, National University of Kaohsiung Ph.D. in Accounting, National Cheng Kung University				●		

Note: Until December 31, 2019

For more details [Board of Directors] https://www.csc.com.tw/csc_e/cg/bi.html

2.3.1 Committees of the Board

For strengthening the operation of the Board of Directors, the Board has three functional committees such as "Audit Committee" , "Remuneration Committee" , and "Corporate Governance and Sustainability Committee" (Established during the 4th meeting of the 17th board of directors on November 11th, 2019) and other functional committees.

Audit Committee

The committee is composed of 3 independent directors, one of whom has accounting and financial expertise. Its main responsibility is to assist the Board in overseeing integrity of the company's financial statements, Certified Public Accountant (CPA) appointment (termination) and integrity / performance, internal risk controls, the company's compliance with legal and regulatory requirements, and the company's existing and potential risks. The committee convened 5 meetings in 2019, and the matters discussed were compiled into meeting minutes and presented to the Board of Directors.

Remuneration Committee

The committee is composed of all independent directors. The committee shall review and assess the performance evaluation system for commissioned managers, the evaluation results, and related remuneration systems. The proposals drawn from the resolutions of the meetings shall also be presented to the Board. The committee convened 4 meetings in 2019.

2.3.2 Performance Evaluation of the Board of Directors

In order to implement corporate governance and enhance performance targets of the Board of Directors, CSC follows Article 18 of the " Taiwan Stock Exchange Corporation Operation Directions for Compliance with the Establishment of Board of Directors by TWSE Listed Companies and the Board's Exercise of Powers" and Article 37 of the "Corporate Governance Best Practice Principles for TWSE / TPEx Listed Companies" At the 4th meeting of the 17th session of the Board of Directors on November 11th, 2019, the Board of Directors passed the "Board Performance Evaluation Method" , an internal performance evaluation was conducted through a self-evaluation questionnaire once a year. The results will be organized by the Secretariat Dept. and sent to the Board of Directors before the end of the first quarter of the next year for review and improvement, and an external performance evaluation shall be carried out at least once every three years.

2.4 Corporate Governance and Sustainability Committee

In order to improve the corporate governance mechanism, CSC is committed to promoting corporate social responsibility and implementing the company's sustainable business philosophy. In November 2019, CSC established the "Corporate Governance and Sustainability Committee" (hereinafter referred to as the Sustainability Committee).

In order to implement the sustainable management policy, the Sustainability Committee has 4 functional units: corporate governance and integrity management, sustainable environmental development, employee care and social participation, and corporate social responsibility (CSR) information disclosure. Each unit is responsible for the operation, promotion and implementation of the resolutions put forth by the Sustainability Committee, and convenes at least two meetings annually. The Sustainability Committee reports the implementation of each unit to the Board of Directors every year.

The Sustainability Committee is composed of 5 Directors, 3 of which are independent directors. They met for the first meeting in 2019 and the attendance rate was 100%.

For more details [Corporate Governance and Sustainability Committee] https://www.csc.com.tw/csc_e/cg/bof3.html

2.5 Ethical Conduct

2.5.1 Regulations and Implementation

Business Integrity

CSC established the "Procedures for Ethical Management and Guidelines for Conduct”, which is based on the principles of honesty, fairness, trustworthiness, and transparency, and is used to implement business activities based on integrity management. CSC's integrity management policies are being publicized in internal regulations, annual reports, company websites, publicity and external activities, so that managers, employees, suppliers, customers or other business-related institutions and personnel can understand CSC's integrity management philosophy and regulations.

CSC also arranges instructions on rewards and punishments for new employees every year and promote the importance of the integrity using topics on “side job”, "receiving improper benefits”, and other related content, a total of 7 sessions were arranged in 2019 with 379 trainees participated. Besides, in order to improve the professional knowledge and legal literacy of CSC's directors and supervisors, 3 sessions of corporate governance courses were arranged, which included topics on information disclosure and insider trading.

Avoiding Conflicts of Interest

“The Codes of Ethics for Directors” of CSC strictly stipulates avoidance of conflict of interest and sets anti-corruption principles. Also, “Rules of Procedure for Board of Directors Meetings”, which was enacted in accordance with “Regulations Governing Procedure for Board of Directors Meetings of Public Companies”, provides that if there is a conflict of interest for any director with respect to any matter on the agenda at the board meeting, the director must recuse from discussion and voting on that matter and must not exercise voting rights as proxy for another director on that matter.

In addition, the organization's regulations state the relevant rules regarding avoidance of conflict of interest and corresponding penalties, such as: 1. "The Code of Ethics for General Managers and Above", which clearly regulates that personnel above General Managers should handle business in an objective and efficient manner, avoiding using their positions to cause undue benefits to related personnel or the company; 2. "The Ordinance for Avoiding Conflict of Interests”, prohibiting employees from using their power or position and information to plot private interests.

Preventing Malpractice

CSC has always banned dishonest behaviors such as “soliciting, accepting, and being bribed with improper benefits from suppliers or stakeholders”, and this stance has been a part of CSC's corporate culture. Complying with Article 7.1.1 of the “Political Donations Act”, CSC does not contribute to political donations. According to “The Principles of Integrity and Ethical Management”, all the directors, managers, employees, agents or anyone who de facto controls the management of CSC should not directly or indirectly provide, promise, ask or accept improper benefit, or violate integrity and laws during commercial activities.

Any donations directly or indirectly made to political parties or organizations / persons involving political activities should also comply with the “Political Donations Act” and related internal operating procedures of the company, and should not be used to obtain commercial benefits or transaction advantages. Besides passing down such good tradition by the corporate culture, CSC strictly takes organizational regulations, control mechanisms, and staff training as precautions.

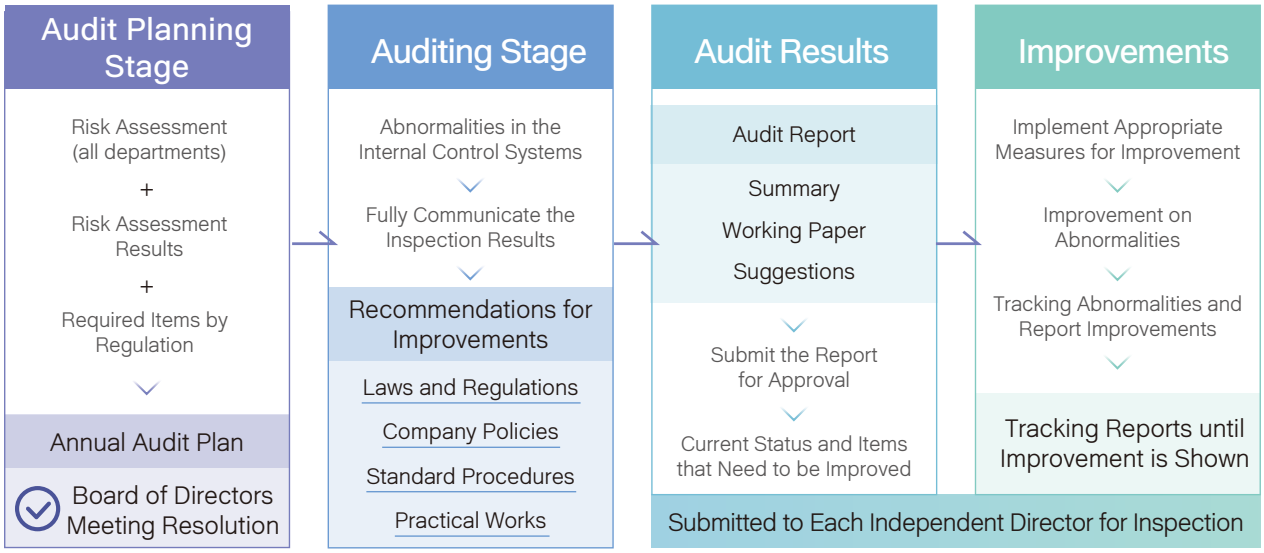
It is the employee and employer's responsibility to report fraudulent behaviors through appropriate channels with particular evidence(s). The company establishes an open complaint channel through the whistleblower direct line , e-mail and company website, and etc. The Internal Audit Office is responsible for handling the complaint case, information is kept confidential throughout the investigation process.

Complaint Hotline: +886-7-8021111#2191 (Headquarter), +886-7-3371111#22191 (China Steel Building);
Complaint Fax: +886-7-8010736; Complaint Mailbox: P.O. BOX 47-13 Kaohsiung, Taiwan
E-mail: IA00@mail.csc.com.tw

2.5.2 Internal Auditing and Correction

The Internal Audit Office (IA) is under the Board of Directors. The chief auditor reports audit performances to the Audit Committee on a regular basis and attends the board meeting to report the status of internal control. Main purposes of internal auditing are to assist the Board and managers in checking and reviewing defects of the internal control system, to evaluate the effect and efficiency of operations, and to provide timely suggestions of improvement to ensure the continuous practice of internal control systems.

Self-assessment Reports of Internal Control System



Self-assessment Reports of Internal Control System

IA reviews the management review report and internal control system self-assessment report from CSC's first-level units and the group's reinvestment companies annually. Along with the results of each operational audit performed in 2019 as well as self-assessment reports of each department's (including 7 departments and the Wind Power Development Committee), it was consolidated into the "2019 Departmental Self-Assessment and IA Summary Report". The report was used to evaluate the effectiveness of the overall internal control system and served as the main content of the "Internal Control System Statement".

Eight Transaction Cycles

Audit items of 2019 include the procedure of eight transaction cycles, crosschecking functions between systems, compliance with the regulations of Financial Supervisory Commission (FSC), and internal control systems of subsidiaries. A total of 46 auditing reports and 508 suggestions of improvement were proposed in 2019, and subjected timely improvement measures by audited units and subsidiaries, and filed in the CSC's IA Management System for follow-up. Audit items are submitted to supervisors and independent directors for review.

2.5.3 Information Transparency

CSC regards information disclosure as an essential element of corporate governance. To ensure transparency of information, CSC builds online filing system in accordance with Guidelines for Online Filing of Public Information by Public Companies of the Securities and Futures Bureau. Information is also disclosed on CSC website and is accessible through the shareholder service direct line, spokesperson, and designated media contact.

Complete information https://www.csc.com.tw/csc_e/hr/csr/gov/gov8.htm

2.6 Risk Management

2.6.1 Operating Mechanism of Risk Management

There are three levels for risk control in CSC, and all employees are responsible for each level. Instead of being monitored by one certain department, we believe that the best way to implement the risk management is to prevent layer upon layer through daily routines.

Risk Control Procedure

Level	Unit	Mechanism
1	Departments	The responsible departments take the responsibility of early risk detection, evaluation, control, and setup of prevention schemes.
2	Committees and Meetings	The President and Vice Presidents hold committees and meetings for risk assessment and feasibility study for the prevention schemes, while the Legal Office and IA provide legal opinions and control points setting.
3	The Audit Committee and the Board of Directors	The Audit Committee and the Board of Directors review and approve the risk assessment and prevention schemes. IA regularly, or from time to time, selectively exams and evaluates the risks and reports to the Audit Committee and the Board.

At the beginning of every year, from bottom up, each department performs risk assessment for operational tasks and compiles self-assessment report for IA to check. Each division assesses business cycles' risk wholly and compiles self-assessment report for the President to review. IA's report and self – assessment reports are comprised major part of the Internal Control System Statements, which will be sent to the Audit Committee and the Board for review and approval.

In order to prevent the risk of illegal operations caused by not properly to the constantly revised regulations, CSC began to plan and promote the internal regulatory identification mechanism at the end of 2018. A regulatory identification system was built for confirming the latest version of the regulations, tracing the potential nonconformity and ensuring the conformity with domestic and international law, CSC's overseas production sites can also effectively implement and respond to changes according to the local regulations.

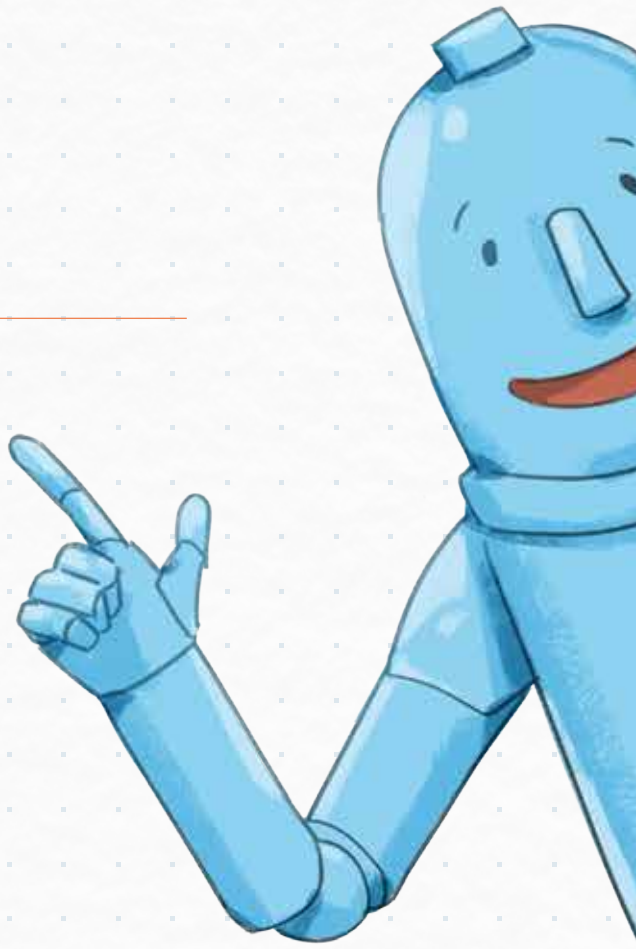
2.6.2 The Implementation of Risk Management

Type	Potential Risk	Control Strategies and Measures
Financial Risk	Exchange Rate Risk	» Adopt hedging operation for foreign currencies of import / export businesses to avoid risk, and also monitor the trend of exchange rate and buy or sell currencies adequately to avoid risk. » Take out loans of equivalent amounts of foreign currencies or enter forward exchange to avoid exchange rate risk when foreign currencies are demanded at foreign investment or procurement of imported equipment; constantly adjust the approaches as hedging cost, exchange price trend and foreign currency loans change.
	Rising Interest Rates	» Set a strict tolerance rate for variable interest rate liabilities. » Regularly assess the best timing for issuing mid- / long-term debentures in combination with bank credit to lower capital cost and avoid increasing interest rates. » Continue to use low interest rate commercial papers and short term bank loans. » Adopt adjustable fixed rate commercial papers (FRCP) during the time of a relaxed capital market to reduce the long-term interest rates in TWD.
	Inflation Risk	» Monitor the effect of inflation on company's operation. Since the material price is near the lowest point of recent years, it is unlikely for CSC to face inflation risk.
	Pickup by Customers	» Use the accounts receivable without recourse to sell out, obtain the payment in advance, and enhance fund utilization efficiency. » Use e-commerce and security mechanisms of digital signatures to simplify payment procedures.

Type	Potential Risk	Control Strategies and Measures
 **Financial Risk**	Big Changes in the Industrial Structure of the Insurance Market	» Visit international reinsurance companies to understand the change of the reinsurance market in order to prepare for CSC's property fire insurance renewal. » Regarding how reinsurance companies would raise issues concerning the reasonableness of insurance claims, lawyers and experts get together ahead of time to integrate their opinions. » Inquire about the domestic property insurance premium and insurance premium rate in advance in order to provide the subsequent back-up plan.
	Capital Utilization Efficiency of CSC Group	» Regularly analyze the financial structures and indicators of affiliates and set up an alarm mechanism. » Strengthen relationships between affiliates and finical institutions to enhance capital management. » Property and Casualty Insurance Planning Proposals and Financing Arrangements promoted by the operation of new energy-saving business.
 **Production Risk**	Economic Recession	» Simulate and plan for production and sales situations based on orders estimation. » Coordinate slab quota or outsource rolling when necessary. » Adjust blast furnace production and maintenance schedule according to storage capacity. » Adjust production line quarterly / yearly maintenance schedule and storage limits according to the production of molten iron.
 **Market Risk**	Concentrated Sales	» Adopt marketing channel strategy and make adjustments according to market changes. » Set up overseas coil centers to manage and control marketing channels.
	Imbalanced Production and Sales	» Predict orders with big data, plan and simulate production and sales conditions, and timely adjust production plans. » Make full use of CSC Group's resources, reduce inventory and shorten delivery time.
	Price Changes	» Grasp domestic and foreign market information, exchange information with the industry, and listen to the opinions from downstream customers. » Strengthen the price opening mechanism to enhance the timeliness of CSC's response to market conditions. » Apply Intelligent Production and Sales technique to predict future market conditions and improve the accuracy of future forecasts.
 **Transportation Risk**	Shipment of Raw Materials	» Review material reserve weekly for optimized transportation planning to avoid material interruption. » Control the progress of operations such as raw material shipping, loading and unloading, and provide materials timely and appropriately for on-site production. » The transfer operation of iron ore sands has been added since 2019 to overcome the issue of the shipment not being unloaded in time due to insufficient space on site, and also shorten the waiting time for the fleet to achieve minimal cost on delay.
	Shipment of Finished Goods	» The buyer bears all risks of loss or damage to the goods from the time they have been delivered on board. » For domestic in-land transportation, all the contractors must sign an affidavit and provide an irrevocable bank guarantee involving a certain promised quota to ensure goods will reach their destination safely.
 **Raw Material Source Risk**	Interruption of Supply	» Carefully assess and actively develop material sources to avoid monopoly of certain suppliers. » Build an adequate safe stock level and purchase loose items to ensure flexible response to changing production needs. » Operate with own vessels for material shipment and use chartered vessels as alternatives when necessary. » Increase self-supply of raw materials.
	Raw Material Investment	» Prudently choose miners and / or partners for raw materials resources investment. » Hire advisors to assist in conducting project feasibility study. » Convene meetings of both internal and external experts for comprehensive evaluations. » Monitor the operation and development of the invested projects and / or companies.
 **Information System Risk**	Information System Abnormality	» Standardize operation procedures, implement training, and carry out regular safety drills. » Establish alert and report mechanism and problem management platform.
	Information Security	» Regular reviews are completed by external security consultants to improve security facilities and meet security regulations. » Introduce firewall inventory tool and "Two-Factor Authentication (2FA)" for VPN to strengthen the security protection mechanism.

Type	Potential Risk	Control Strategies and Measures
Utility Risk	Unstable Supply	» Inspect pipelines to maintain a steady and reliable supply of utilities. » Conduct periodic emergency drills. » Participate in reclaimed water recycling projects (Fengshan and Linhai).
	Stricter Regulations	» Comply with regulations to ensure the quality of effluent meets standards.
Equipment Maintenance Risk	Machinery Equipment Maintenance	» Spare parts management: Maintain appropriate inventory level based on maintenance experience and spare parts consumption records to prevent production disruption. » Maintenance records establishment: Strengthen monitoring process of countermeasures and maintenance strategies to systematically and comprehensively retain and pass on maintenance expertise and practices. » Online Monitoring Center: Monitor major production equipment data through system and provide daily and weekly abnormality reports. Develop abnormality countermeasures for early warning and prevention of possible unforeseen production halt.
	Electrical Equipment Maintenance	» Establish and Practice the IATF 16949 Standard Maintenance Procedure and the ISO 9001 Standard System Development Procedure. » Establish "Information Safety Management Regulations of Production Division" with reference to ISO 27002.
Water Risk	Water Resources Management	» Add secondary water sources such as seawater desalination and urban sewage recycling. » Examine drainage and emergent submerge pumps for extreme precipitation. » Set run-off pools and treatment systems to improve effluent quality.
Climate Change Risk	Carbon Management	» Develop energy saving and carbon reduction steel products and perform LCA. » Participate in new green businesses and carbon reduction both domestically and abroad. » Refer to national policies to formulate mid- / long-term carbon management goals and strategies.
EHS Risk	Labor Safety Culture	» Conduct comprehensive hazard identification and risk assessments; adopt risk mitigation measures; conduct emergency response drills.
	Environmental Protection	» Reduce air pollutants and wastewater discharge, and increase water saving and wastewater recycling. » Strengthen the risk control of resource utilization. » Properly manage waste production, storage and cleanup procedures.
	Administrative Justice	» Watch for the imposition of various types of environmental taxes, fees and energy taxes to ensure that they are just.
Engineering Management Risk	Internal Management	» Establish engineering management and capital expenditure management systems, and strictly control the progress, budget, etc. » Promote zero accident and strengthen the risk control of occupational safety and health.
	Contractor Performance	» Track contractors' financial status by entrusting local investigators and filing investigation results in the engineering management system and integrated platform. Conduct periodic credit checks of specific suppliers. » Develop performance assessment mechanisms for the contractors, technical service providers and technical service consultants.

3 Value Creation



Material Topic 3.1 Operational Finance

Benefit Highlights in 2019

AA

The Long-term Credit Rating given by Taiwan Ratings is twAA. The Long-term Credit Rating given by the Fitch Ratings is AA-(twn).

Listed as the constituent company in the "TWSE Corporate Governance 100 Index".

7.25 billion TWD

The cost reduction achievement rate was 117%, and the actual cost savings were about 7.25 billion TWD.

Meaning for CSC

Financial performance is a demonstration of business stability and efficiency. By strengthening its financial structure and implementing cost control, CSC will continue to steadily give impetus to the increase of economic value and give back to all stakeholders in order to achieve the long-term goal of sustainable development.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● Reduction of costs in 2020 ≧ 3.03 Billion TWD; ● Orders of premium products in 2020 ≧ 5.15 Million tonnes.	● Improve global logistics, strengthen strategic partnerships, optimize overseas distribution, and introduce smart commerce; ● Provide the companies in the Group with financial advice and fundraising assistance, as well as establish risk management mechanisms; ● Provide multifaceted analysis of profitability to support price setting.	● Integrate resources of CSC Group, continuously review invested businesses, and enhance synergies across units in CSC Group; ● Flexible financial control to reduce the group's financial costs; ● Optimize the standard product costing system, provide real-time cost and profit information in order to build the best product combination module.

Management Approach

CSC follows the business philosophy of "Implementing Actual Performance," and continues to create profits through increasing income and reducing costs. When there is a surplus in the year, under the maintenance of a stable financial structure, the annual surplus will be returned to shareholders in the form of dividend distribution to establish the value of the company's long-term investment.

Short-, mid- and long-term goals are set for financially sound growth, and implement action plans. For the medium and long-term financing plans of important overseas subsidiaries, proposals are brought up as CSC assists in negotiating with financial institutions; cost are refined, and information about each product category and client category is stated to strengthen the order portfolio.

Implementation Results

According to the update status of equipment and operating conditions, CSC properly plans funding sources and dividend policies and adjusts the dividend distribution rate to meet the expectations of shareholders and investors, and retain appropriate funding positions to meet capital expenditure needs.

CSC's 2019 credit rating results remain "stable." It is evident that the rating agencies affirm that CSC can respond to the fluctuations in the steel market through its cost advantages and the ability to maintain a steady and stable cash flow. Maintaining good performance in credit ratings will help with short-, mid- and long-term financing and reduce financing costs.

3.1.1 Cost Control

The steel industry is capital-intensive industry that demands huge amount of investment in production equipment, coal and iron materials account for a high percentage of production cost. To control costs and maintain competitiveness, CSC implements various projects. The initiative of cost saving is an important strategy and the key factor to success in the steel industry. CSC continues to systematically reduce operating costs by using scientific methods, raw materials utilization, process improvement, technology R&D, quality upgrades, management improvement, and intelligent production-sales. Divisions monthly review executive results and quarterly report in Operational Budget Execution Review meetings for timely improvement.

- Highlights in 2019: Affected by the China-US trade war, CSC has expanded the scope of cost reduction projects since June 2019 in order to ensure the company's profitability. The actual cost savings in 2019 were about 7.25 billion TWD, and the target achievement rate was 117%.
- Target for 2020: A total of 323 cost reduction and profit increase projects (35 key projects and 288 working plans), plus controllable sales management training and general plant cost reduction targets totaling 3.03 billion TWD.

Cost Reduction Activities

Unit: billion TWD	2017	2018	2019	2020
Target	3.25	3.80	6.18	3.03
Performance	3.96	4.69	7.25	-

3.1.2 Business Performances

Operating Revenues

Unit: 1,000 TWD	2018	2019	Increase / Decrease from 2018 to 2019
Sales Revenues	229,993,271	201,535,449	Decreased 12.4% in 2019 due to the decline in unit price of steel products and sales volume.
Service Revenues	5,409,880	5,762,084	Increased 6.5% in 2019 due to the construction revenues growth.
Total Operating Revenues	235,403,151	207,297,533	

Note: For detailed financial information https://www.csc.com.tw/csc_e/ss/fin/fin.html

Operating Expenses

Unit: 1,000 TWD	2018	2019	Increase / Decrease from 2018 to 2019	Change Rate (%)
Operating Costs	210,430,943	194,591,389	(15,839,554)	-8%
Cost of Goods Sold	203,825,079	190,047,383	(13,777,696)	-7%
Service Costs and Others	6,605,864	4,544,006	(2,061,858)	-31%
Operating Expenses	8,591,826	8,257,497	(334,329)	-4%
Total	219,022,769	202,848,886	(16,173,883)	-7%

Net Profile and Earnings

Unit: 100 MM TWD	2017	2018	2019
Operating Revenues	2,070.99	2,354.03	2,072.98
Net Profit before Income Tax	185.21	263.97	100.35
Net Profit for the Year Tax	169.06	244.54	88.10

Note: Numbers are shown according to IFRSs.

Dividend Distribution

In 2019, earnings available for distribution totaled 21.029 billion TWD, with dividend distribution of 1.4 TWD per preferred share and 0.5 TWD per common share. Dividend distribution and return on investment over the past five years are as follows:

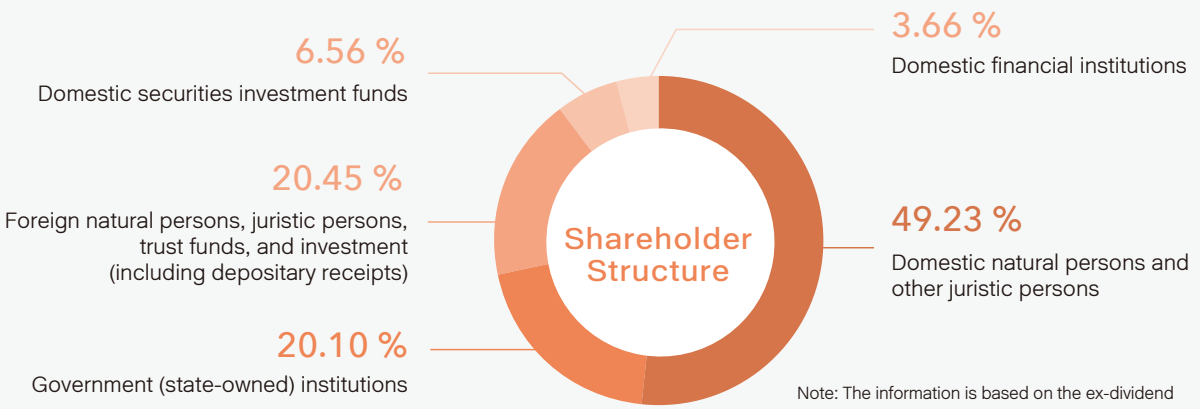
Unit: TWD	2015	2016	2017	2018	2019
EPS	0.49	1.04	1.09	1.58	0.57
Cash Dividend	0.5	0.85	0.88	1.0	0.5
Stock Dividend	0	0	0	0	0
Dividend Payout Ratio (%)	102.04%	81.73%	80.73%	63.29%	87.72%
ROE (%)	3%	5%	6%	8%	3%
P/E Ratio[II]	46.47	20.96	22.86	15.32	42.47
P/D Ratio[III]	45.54	25.65	28.32	24.20	48.42
Cash Dividend Yield[IV] (%)	2.20%	3.90%	3.53%	4.13%	2.07%

Note: I. Dividend distribution of 2019 will be in effect after approval of shareholder meeting on 19 June 2020.
II. P/E Ratio = Average closing price per share for current year ÷ EPS
III. P/D Ratio = Average closing price per share for current year ÷ cash dividend per share
IV. Cash Dividend Yield = Cash dividend per share ÷ average closing price per share for current year

According to CSC's Articles of Incorporation Articles, earnings of a fiscal year are distributed in the following order after tax payment, deficits offset, and appropriation of legal reserves: (1) Set aside for special reserves or partial retain when necessary. (2) As dividends for preferred stocks at 14% or par value. (3) The remainder, if any, as additional dividends divided equally between the holders of preference and ordinary shares.

CSC's cash dividend payout ratio is approximately 80% in the last five years. For future dividend distribution, the Company will make best effort seeking balance between long-term growth stability and investor's expected dividend yield.

3.1.3 Shareholder Structure and Subsidies



Note: The information is based on the ex-dividend announcement dated August 1, 2019

According to Article 10 of Statute for Industrial Innovation, CSC's expenditure on R&D is credited against its income tax payable. CSC does not accept other governmental subsidies. In 2019, the amount of the tax credit applied for R&D expense was 21.15 MM TWD.

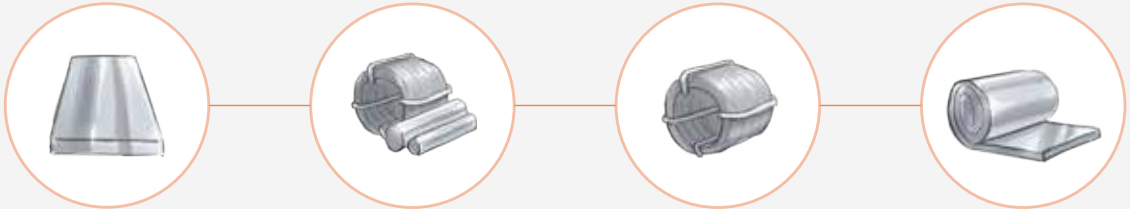
For more details [Tax Management] https://www.csc.com.tw/csc_e/hr/csr/gov/gov9.htm
[Invested Businesses] https://www.csc.com.tw/csc_e/hr/csr/in/in3.htm

3.2 Product and Sales

3.2.1 Major Products and Usage

The production of crude steel in 2019 was 9,491,990 tonnes, increasing by 61,104 tonnes compared to 9,430,886 tonnes in 2018, and the growth rate is about 0.65%. The productivity of employees is 928 tCS / man-year.

Major Products and Usage



Plates

Shipbuilding, bridges, steel structures, oil country tubular goods (OCTGs), storage tanks, offshore wind power, etc.

Bars

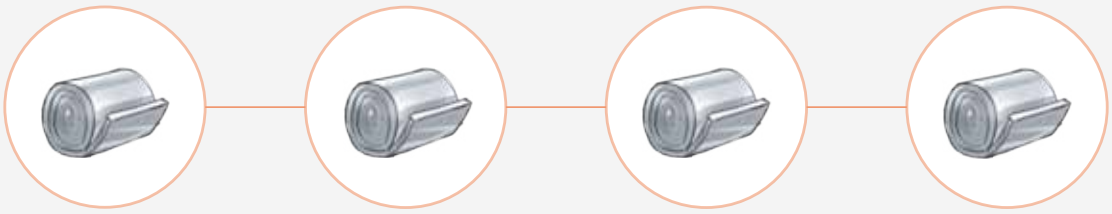
Nuts and bolts, hand tools, loudspeaker parts, automobile and motorcycle parts, suspension spring, bearing, etc.

Wire rods

Nuts and bolts, steel wire and rope, P.C wire and strand, hand tools, welding electrodes, etc.

Hot rolled coils, plates, and sheets

Steel pipes and tubes, vehicle parts, containers, pressure vessels, building structures, hydraulic jacks, etc.



Electrical steel coils

EV Motors, compressors, home appliance motors, servomotors, industrial motors, etc.

Hot-dip galvanized coils

Automobile panels and parts, home appliance panels / parts and accessories, computer cases / parts and accessories, PPGI substrate, construction materials, etc.

Electro-galvanized coils

Computer cases / parts and accessories, home appliance panels / parts and accessories, LCD TV back plates / parts, motor cases, construction materials, etc.

Cold rolled coils

Steel pipes and tubes, steel furniture, kitchenware, home appliances, oil barrels, etc.

Note: Special alloy products will no longer be available due to business adjustments; therefore the content of related usage descriptions will not be published from 2019 onward.

Production

Unit: 10,000 tonnes	2017	2018	2019
Steel plate	87.2	96.1	84.1
Steel bar	61.6	68.4	54.1
Steel wire rod	131.9	128.8	112.5
Hot rolled	238.8	268.7	279.8
Cold rolled	342.1	332	300.8
Slab	20.5	29	41
Cast iron	1.1	1.04	1.68
Total	883.2	924	874.0

3.2.2 Product Sales

In 2019, the total sales of steel products was 10.29 Mt. Among the 68.25% of domestic sales (7.02 Mt), steel bar / wire products accounted for 24.4%, while hot-rolled products took up 22.9%. Export sales accounted for 31.75% (3.27 Mt), and the major exporting markets included Japan, China (including Hong Kong), and Southeast Asia.

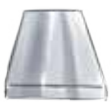
● Export ● Domestic

Unit : 10,000 tonnes

Hot-rolled

308.8304

● 148.0025
● 160.8279



Plate

91.1022

● 6.2797
● 84.8225

Semi-product

138.3734

● 0
● 138.3734

Bar /Wire

187.9528

● 16.3221
● 171.6307

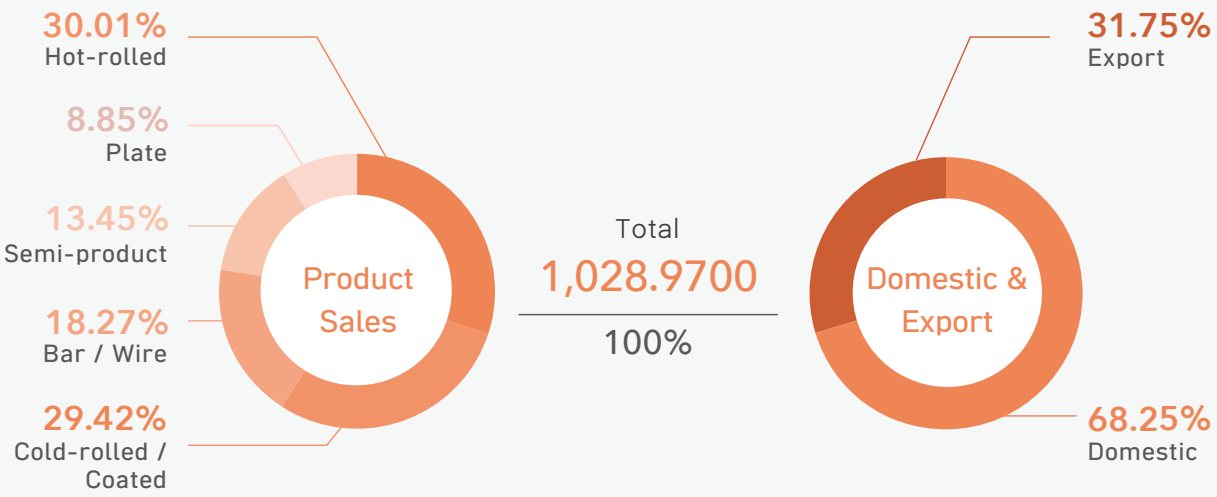
Cold-rolled / Coated

302.7080

● 156.1041
● 146.6039

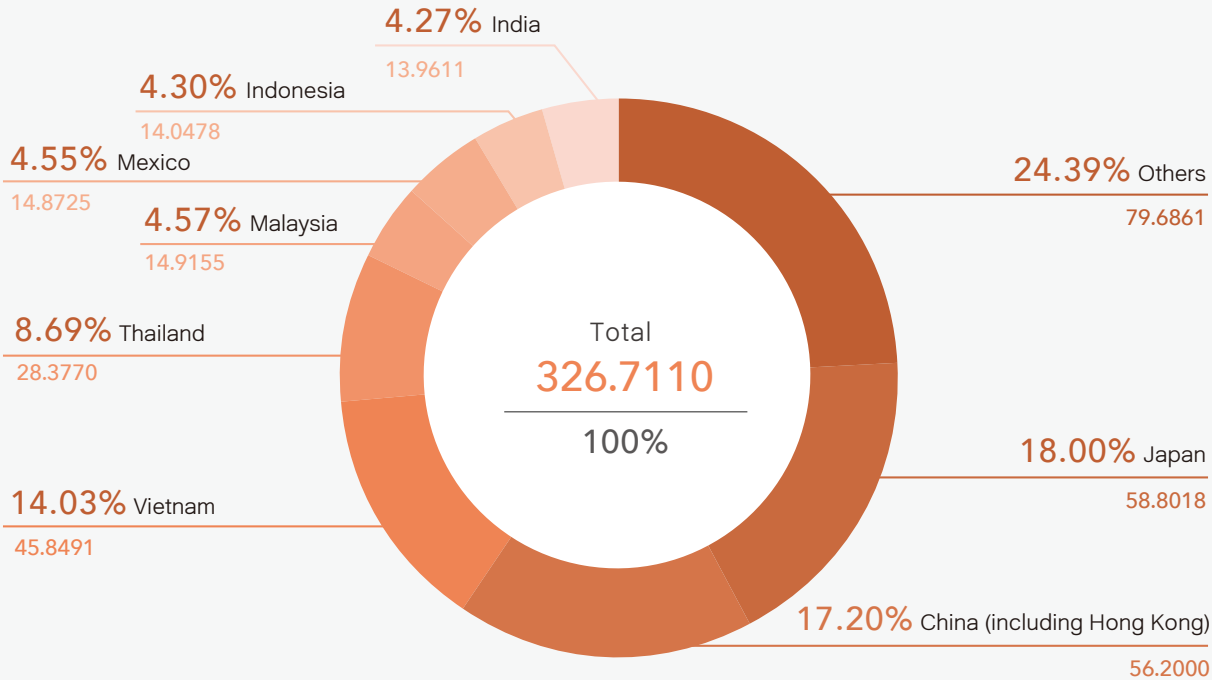
Product Sales, 2019

Unit : 10,000 tonnes ; %



Export Sales by Country, 2019

Unit : 10,000 tonnes ; %



3.3 Product Quality and Innovation

Benefit Highlights in 2019

+37

Completed 37 development projects, which can effectively improve self-sufficiency in manufacturing parts and materials.

Set the standard specifications of electric vehicle manufacturers and has become the most important electromagnetic steel sheet supplier worldwide.

Has ranked top 10 on the "Taiwan Intellectual Property Office Top 100 Patent Application" 4 years in a row.

Material Topic

3.3.1 Research Innovation

Meaning for CSC

Only companies that develop highly competitive products, low-cost processes, and value-added application technologies can survive and maintain sustainable development through product revenue. CSC continues to develop new products when products enter the maturity stage or when market competition and customer needs arise, in order to create differentiation and strengthen market competitiveness, as well as bringing substantial benefits.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● Develop at least 8 key industrial materials or processes for mass-producing steel; ● Develop and introduce electrical steels for electric vehicles currently required; ● 200 patent proposals per year, with utility patents accounting for 50% of total patent applications.	● Develop at least 15 key industrial materials or processes for mass-producing steel*; ● Develop and introduce electrical steels for future electric vehicles; ● 200 patent proposals per year, with utility patents accounting for 55% of total patent applications. *Cumulative from 2020	● Develop at least 20 key industrial materials or steel production technology; ● Develop and introduce electrical steels for electric vehicle manufacturers; ● 200 patent proposals per year, with utility patents accounting for 60% of total patent applications.

Management Approach

Only through consistent innovation can a company achieve sustainable development. CSC follows the concept of "five I", Information, Imagination, Ideation, Innovation, and Implementation, to stimulate endless capability of innovation. Innovative thinking is inspired by collecting and studying external information, followed by formation of a logical, organized, and complete conception, which is put into practice by project researching. Research results of applicable new knowledge as well as technology in process and products are ultimately implemented on site and market, respectively. Substantial benefits are thus created. In addition to fulfilling the company's strategies, CSC keens on improving the products and its application fields in line with the industry value chain development.

The R&D of CSC includes two fields: steel and non-ferrous. The major research objectives include:

- **Product Development** : developing high quality, high grade and new products with top specification and added value
- **Product Application** : developing advanced second and third processing technology to enhance the competitiveness of steel-using industry
- **Process Development** : setting up small quantity, low cost and low pollution but diverse production capability of pure refining and tight rolling technology

- **Enabling Technology** : integrating AI technology with ICT industry, implementing AI technology in steelmaking process, and establishing AI production and marketing system to advance CSC towards a sophisticated steel company.
- **Energy Conservation and Environment Protection** : enhancing the efficiency of energy use and pollution prevention technology, furthering energy conservation and emission reduction to create sustainable environment

As for the latter field, by extending the application of existing core technology and integrating external resources, essential materials, such as special steel, high quality aluminum, refractories, special chemicals, and environmental friendly catalysts which are steel relevant, and non-ferrous alloy, fine carbon, magnetic, thermoelectric, and photoelectric materials which are for industry demand, were developed.

New Product Development

New product development is a tool to create enterprise differentiation and strengthen competitiveness. It is implemented by the "Total Quality Management Committee (TQM)", the "New Product Development and Quality Promotion Committee" and its subordinate "New Product Development Assessment Team" "New Product Development Promotion Team," and "New Product Development Technical Team." The transfer of research results from the development teams, technical services, and customer needs explored by the marketing division—can all be used in the mass production in workshops to meet customer needs. New Product Development Groups finished a total of 37 projects in 2019. Among them, the making of CRHS-56 steel plates and SCM440 wire rods for national defense and self-supply of parts for public infrastructure can effectively improve self-sufficiency in manufacturing parts and materials.

Process Refinements

The focus of process refinements is to enhance the company's product competitiveness and customer value. CSC continues to follow the strategy of improving "Quality, Grade and Variety," as these dimensions can enhance the upgrade of make-to-order products. In 2019, for steelmaking and steel plates, bars, hot-rolled steel products, cold-rolled steel products, electro-galvanized steel products, hot-dip galvanized steel products and electromagnetic steel coils, CSC completed important process technology improvement projects as follows.

Patent Management

In order to encourage employees to engage in technological innovation and safeguarding intellectual property (IP) rights, CSC has formulated the "Key Points for Patent Implementation," set up a "Patent Promotion Committee" to establish patent management policies and objectives and implement improvement programs to ensure the operation of the intellectual property management system. The results are reported regularly to the board.

CSC has set a goal of "204 internal patent proposals each year and 2 patent licensing", and has gradually achieved the goal through the actual implementation of the Patent Promotion Committee, Patent Promotion Officers' Meeting, educational training, etc., fully showing the spirit of practicality and innovation.

Promoting Innovation

Regular educational training sessions are held for new employees and patent reviewers. In addition, an annual "Excellence Award for Patent Promotion" event is held. The number of reward inventors was 1,289 in 2019.

Patent Strategic Planning

Review and analyze patents for related technologies, and timely file for patent invalidation or develop patent portfolios to protect the company's rights and interests.

Intellectual Property Management and Results

A team is set up under the Patent Promotion Committee to manage all the company's patent proposals and regularly stock check all of the patents, and continuously evaluate the necessity of maintaining patent rights.

Implementation Results

CSC had submitted 195 new applications and granted 183 patents in 2019, won the 8th and 7th place respectively in "Taiwan Intellectual Property Office Top 100 patent", having placed Top 10 four years in a row. These figures indicate that, CSC, as the leader of domestic traditional industries in Taiwan, are gradually taking positive effects of protecting IP rights.

In addition, CSC participated in "2018 National Invention and Creation Award" held by Ministry of Economic Affairs and won a gold and two silver medals, reaching the highest record of the awards. CSC had accumulated 12 awards of three gold, eight silver medals and one company's corporate contribution awards over the years, it is obvious that CSC's patents had been well recognized outwardly.

CSC Patent in Top 100 Rankings

	2015	2016	2017	2018	2019
Application	171	230	203	214	195
Application Rank	12	6	9	7	8
Granted	275	269	223	215	183
Granted Patents Rank	10	8	6	7	7

CASE HIGHLIGHTS

Find out the Technology Gap and Take Over the Market

https://www.csc.com.tw/csc_e/hr/csr/in/in6.htm

Benefit Highlights in 2019

CSC has passed the combined audit of new-version ISO 9001 and IATF 16949, to get the new-version ISO 9001 for steel and special alloy products and the first IATF 16949 certificate issued by BSI in Taiwan.

160

A total of 160 items, including assisting customers in improving process technology, solving materials and processing technical issues.

To continuously meet market demand, the certification of automotive steel products has achieved 7 overseas markets, 27 automakers, and 250 automotive product certifications.

Material Topic

3.3.2 Quality Control

Meaning for CSC

In order to achieve the goal of "continuously providing products that meet customer and regulatory requirements to improve customer satisfaction," CSC is committed to providing high-quality products and improving adaptability and resilience. CSC adopted the international quality management system IATF 16949 and ISO 9001 to establish "Steel Product Quality Management System," ensuring that all processes within the system are effectively executed, while continuously improving the management process and product quality.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● 100% annual completion rate of previous management review; ● The annual correction rate of nonconformities detected during system audit is expected to be 99%.	● The annual correction rate of nonconformities detected during system audit is expected to be 100%.	● Maintain "annual completion rate of tracking previous management review", and the "Annual completion rate of nonconformities detected during system audits" is 100%.

Management Approach

To cope with the fierce competition in the international steel market, CSC has assisted the downstream industry in value innovation, leading to the prosperity of the steel industry in Taiwan. The principles of CSC's quality control system with product innovation and improvement are as follows:

Based on the guidelines of the quality policy, there are processes identified for the quality management system: 10 customer-oriented processes, 9 supporting processes, and 7 management processes. Promotion of these processes is used to demonstrate the efficiency and effectiveness of the system operations. By carefully evaluating the company's operating conditions and visions, CSC sets

operating strategies and allocates sufficient resources to each procedure to carry out management activities. Customer satisfaction is the target for all the processes; CSC provides high-quality products with no hazardous substances.

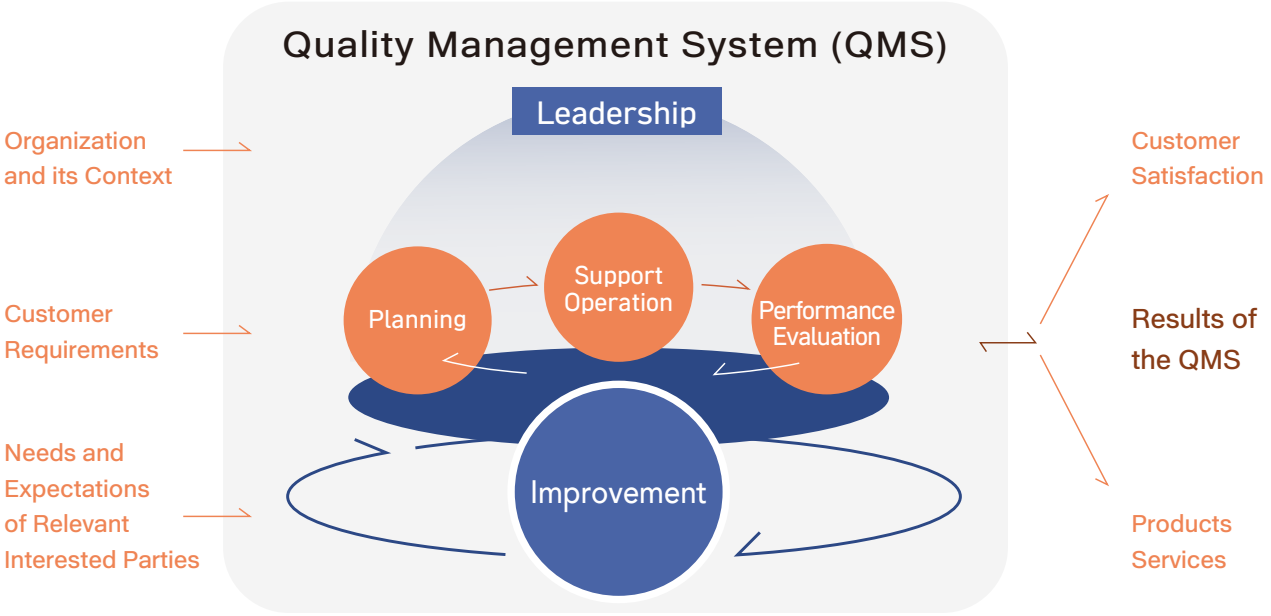
CSC monitors, measures, and analyzes all products and processes to keep improving the system and make it sustainable through internal and external audits, corrective action, preventive action, product quality and process improvement projects, management reviews, and other activities.

CSC follows the quality policy of "development and innovation with customer-oriented approaches to provide excellent and eco-friendly products and to fulfill corporate social responsibility." Also, with the business strategies of "developing advanced products / high-efficiency processes / product application technologies, promoting smart manufacturing, and enhancing the value of the steel industry," and "reducing costs, shortening delivery time, and improving eco-friendly and energy saving policies," CSC centralizes resources relating to production, marketing, R&D, and technologies and focuses on the product strategy of "higher grade, wider variety, and superior quality" through an institutional product development system and a quality improvement project system. Apart from continually upgrading products to higher standards and making product lines more comprehensive, CSC believes that the idea of "customer perception of quality includes variation, precision and accuracy are equally important" ought to be deeply conveyed to the employees. CSC also continues to enhance customer's satisfaction and the company's overall competitiveness through multi-stage and multi-level technical services. In 2019, CSC achieved excellent results in quality management through the employee's active participation.

The Technical Service Group of the Metallurgical Dept. has further formulated regulations regarding customer complaints and claims, and offers customers' feedback on CSC's steel products to the factories. In addition to understanding the customer's overall satisfaction with CSC's steel products, the technical service group provides the direction of strategy improvement to improve the company's production efficiency and competitiveness. An academic institution has been commissioned by the Marketing Administration Dept. to conduct an annual customer satisfaction survey and research plan for all domestic steel products customers, and submit a written summary report.

Quality Improvement and Cost Control

Adhering to the quality conviction of "No best quality, only better quality that exceeds customers' expectations", CSC takes continuous improvement as the driving force for enhancing the product technology and product quality. Through the PDCA cycle as a spindle, with the experimental planning method, Taguchi method, and 6-sigma method used alternately to work out the cause analysis, the data tier and the improvement countermeasures matching the current situation, CSC has accomplished 204 improvement projects in 2019. Among them were 64 pieces from the five major aspects of "raw materials, products, processes, equipment and downstream applications" that combined the six major strategies of cost reduction, such as "redesigning, reducing alloys, saving rejection, increasing yield, lean and simplify processes", which earned a total benefit of 309 million TWD. The flow chart of CSC's quality management system is as below :



Products Certification

Although CSC's products are major in the domestic market, for the needs of overseas production plant and related supply chain, CSC is devoting to expand the export market, and so overcoming the wall of the compulsory products certification of foreign countries is the primary task. As of now, CSC has passed the product certification of many countries like Japan, Malaysia, Indonesia, India, Thailand and Vietnam, etc., which covers 716 grades of plates, bar / rods, hot rolled products, cold rolled products and coating products, providing customers the niche market with legitimate products and smooth customs clearance. In response to the demand for expansion of the export market in 2019, CSC obtained two certifications of steel grades, SAE J403: 2014 10B06 and SAE J403: 2014 1009 of Malaysian MS MARK hot-rolled products, in order to expand sales purposes and channels.

For more details [Customer Service] https://www.csc.com.tw/csc_e/hr/csr/in/cm5.htm

Material Topic 3.3.3 Hazardous Substance Management of Products

Benefit Highlights in 2019

For HSPMS (IECQ QC 080000), CSC has completed the verification process for the updated version and obtained the relative certificate.

100%

For seven consecutive years, the steel products whose hazardous substance content complies with regulations have been 100%.

88.98%

HSPMS included 127 trainees, reaching 88.98% achievement rate.

Meaning for CSC

Manufacturers of raw materials are aware of their responsibilities and obligations to the environment. Environmentally friendly products and environmental protection are incorporated into the costs of business operations. CSC promotes the establishment the "Hazardous Substance Process Management system (HSPMS) by promoting IECQ QC 080000 to control restricted substances that have a major impact on environmental pollution or human health.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● The compliance rate of the steel alloys whose hazardous substance content complies with regulations is 100%; ● To reach 85% or more achievement rate of HSPMS training.	● To maintain the rate of compliance with regulations in terms of the content of hazardous substance content in steel alloys; ● To reach 88% achievement rate of HSPMS training.	● To reach 90% achievement rate of HSPMS training annually.

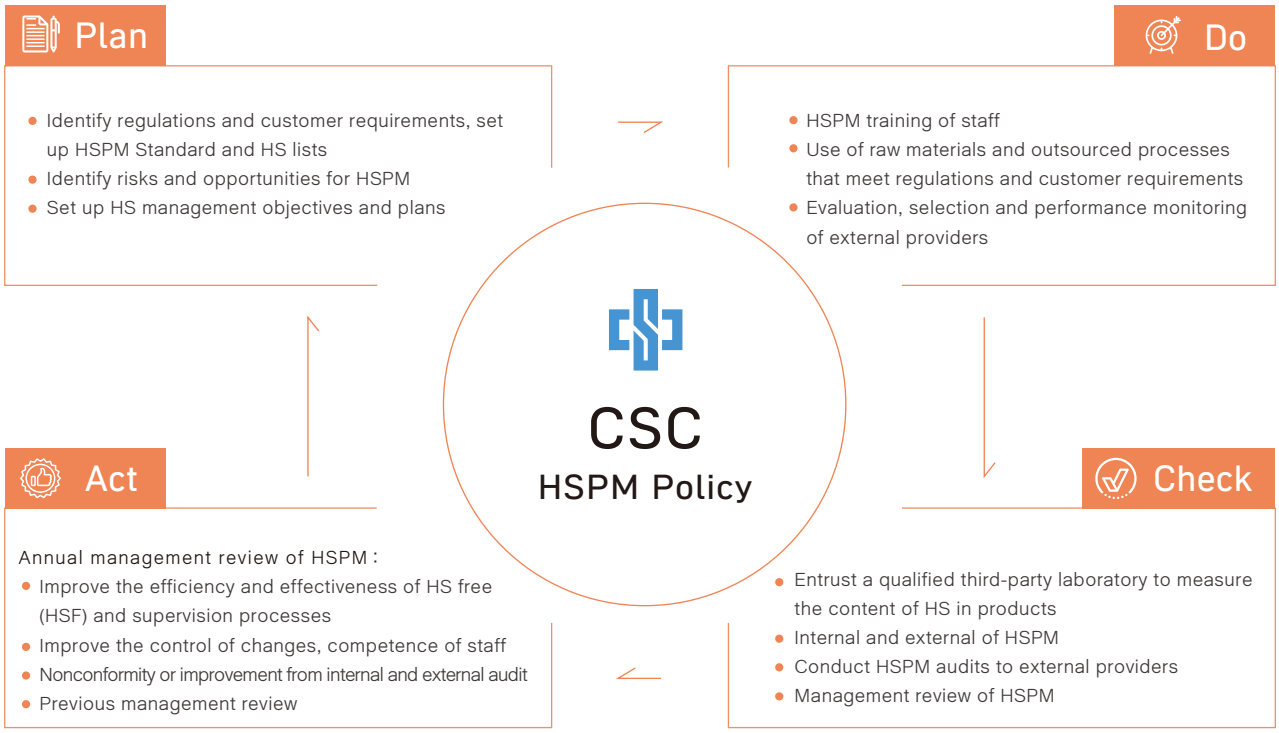
Management Approach

CSC promotes the "HSPMS (IECQ QC 080000) " to establish a management system for products with hazardous substances. Regular annual internal and external audits and management reviews on the "HSPMS (IECQ QC 080000) " are conducted. CSC completed the verification for the new version in 2019 and obtained the new certificate. In the process design and development stage, the use of raw materials containing hazardous substances is avoided in accordance with the green design principles. There are control measures for external suppliers and production processes to ensure that products comply with domestic, foreign regulations, and customers' requirements on hazardous substance restrictions without causing any health or safety related impacts.

CSC follows the quality policy of "development and innovation with customer-oriented approaches to provide excellent and eco-friendly

products and to fulfill corporate social responsibility." Therefore, the Metallurgical Dept. follows the concept of this policy and has set the annual business goals of "100% compliance rate of hazardous substance in steel products and special alloys (including outsourced products)" and "achievement rate of HSPMS ≧ 85%". Relevant factories and departments carry out the review of the responsible processes according to business attributes, conduct risk assessment on materials, establish control lists, and require suppliers to provide hazardous substance compliance certificates or hazardous substance analysis reports when purchasing raw materials. The products are assessed on the basis of source, manufacturing process, quality, packaging, and quality in order to reduce or eliminate hazardous substances in the product. It is also to ensure that all products (including subcontracted products) comply with the regulations on hazardous substances, improve customer satisfaction and continue to maintain zero complaints about CSC's hazardous substance management. In addition, CSC also regularly holds educational training sessions on HSPMS to improve relevant employees' ability to manage hazardous substances in hopes of ensuring that products are hazardous-substance-free (HSF).

In order to validate the effectiveness of every stage of the HSPMS, CSC regularly conducts internal and external audits and management reviews of the "HSPMS (IECQ QC 080000)" to achieve continuous improvement. There were no violations of health and safety regulations for products and services in 2019.



Life-Cycle Perspective Control

CSC takes into consideration the use of raw materials and outsourced processes during the stage of the product design and development to ensure the products meet international regulations and customers' requirements. CSC pays close attention to restricted substances that have a major impact on the environment from the design and material selection stage, make sure they are compliant with international regulations such as EU RoHS, REACH SVHC, packaging regulations, China RoHS 2, and GS PAHs, and include them into the scope of control.

In the stage of external provider control, CSC requests external providers to comply with CSC's or customers' requirements on the restrictions on hazardous substances and to submit the "Warranty of Conformity to China Steel Corporation's Restrictions on Hazardous Substances." In this way, hazardous substances in products can be reduced during the early stage of life cycle. CSC can thus extend the requirements for hazardous substances to external suppliers, and keep hazardous substances away at the beginning of product life cycle.

"The compliance rate of hazardous substances in steel products and special alloys (including outsourced products)" is included in the objectives of internal management. The compliance rate was 100% in 2019 (100% for each year since 2013), which fully demonstrated that no hazardous substances were added to CSC's products in the manufacturing process, and all the products met the international regulations and customers' requirements. To ensure CSC's product comply with the international regulations and customers' requirements, CSC has product samples tested by an external third-party TAF-certified laboratory every year to prove the products meet the requirements. This fully shows that CSC's products do not contain hazardous substances, and all product met the international regulations and customers' requirements.

Training Programs

To carry out the HSF requirements to meet the IECQ QC 080000, CSC regularly provides training courses which enable employees to understand the changes in the latest international green product regulations. Moreover, CSC has set up a new HSF objective— "HSPMS training achievement rate ≥85%" — in 2019 and has since provided a course on "HSPMS (IECQ QC 080000)," for first-line / middle / top directors and management staff from business units relating to hazardous substance process management (HSPM). The goal is to teach the said personnel about restrictions on materials, development trends, control methods and the operation of HSPMS, the history and development of HSPMS, and the introduction of QC 080000 articles, so that employees can gain the capabilities required for HSPM. In 2019, a total of 127 trainees participated and the completion rate of the annual training on hazardous substance management system was 88.98%.

Material Topic 3.4 Green Development

Benefit Highlights in 2019

6.517 million tCO_2

The green products with energy-saving and carbon-reduction benefits were 3.504 million tonnes, which can reduce 6.517 million tCO_2 emissions for consumers.

CSC has invested in the development of Zone #29 project and collaborated with local suppliers and Wind Turbine Generator (WTG) provider to build an offshore wind supply chain.

By the end of 2019, the cumulative installed capacity of the solar photovoltaic system had reached 83.2MW, and it can contribute at least 53,000 tonnes of CO_2 reduction per year in the future.

Meaning for CSC

With "green growth" as its vision, CSC adheres to the low-carbon strategy of green manufacturing and operations. In response to the trend of stricter energy and environmental regulations and the continuous change of the energy structure, CSC cooperates with government policies to practically promote energy conservation, emission reduction and green business. Committed to the development of solar photovoltaic and other green businesses, CSC mitigates policy impacts and connects with future international competition trends.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● Develop offshore wind farm Zone #29 project and promote the domestic industrial alliance of offshore wind turbine components; ● Maintain stable and efficient power generation on the rooftop solar power plant; the average efficiency target > 80%; ● Establish the best operation and maintenance technology for photoelectronic operations, and keep the annual decline rate of system performance below 1%.* *Based on the 2019 construction site	● Supply of high-grade steel such as jacket foundations, towers and fan components; ● Expansion of PV fields outside CSC, with at least 2MW solar photovoltaic system installed each year; ● Cooperate with the renewable energy policy, build a stable layout and adopt ground-mount solar PV power; ● Cooperate with company policies, implement track engineering business, and establish core technical capabilities.	● Develop offshore wind power project management and maintenance business; ● Promote the application of technologies such as energy storage systems, smart grids, and PV optimizers based on policies and market conditions; ● Promote solid oxide fuel cell (SOFC) system application, assembly and component development in the domestic market; ● Execute track engineering business and establish core technical capabilities.

3.4.1 Green Products

In recent years, global attention has been focused on low-carbon economy. Green steel products have external energy-saving and carbon-reduction benefits. As an upstream manufacturer of the industry, CSC plays an important role in developing and expanding the supply of green steel products and driving the green supply chain. In line with international concerns, information about carbon reduction of green steel is able to enhance CSC's high-quality image, quantify the benefits of carbon reduction in green steel R&D and manufacturing, highlight CSC's contribution to energy conservation and carbon reduction, and implement corporate social responsibility. CSC has dedicated itself to the development of high-quality steel products, and around 70% of them are green steel that help save energy and reduce carbon emission.

Action Plan

CSC's green steel products refer to raw materials, processes, finished products and customer applications that have external energy-saving and carbon-reduction benefits. Including (1) High-strength, high-function steel: such as automobiles, fleet, building structures, electromagnetic steel sheets. (2) Reduction of processing steel: such as tempering-free, lead-free bath, and drawing-free annealing steel. (3) Steels with extended operating life: such as weather-resistance, corrosion-resistance, wear-resistance and galvanized substrates.

CSC reviews the content of green steel products such as steel plates, bars, hot-rolled steel products, cold-rolled steel products, galvanized steel products, hot-dip galvanized steel products, and electromagnetic steel coils every quarter and renew the identification list. The green steel product implementation status of each product is evaluated quarterly by the list. In addition, the high-grade steel product implementation status is reviewed monthly and reported in the "Steel Quality Management Meeting" to discuss. New product development is also reported quarterly by the "Quality Strategy Committee" and reviewed by the "Total Quality Management Committee (TQM)."

Implementation Results

In 2019, 3.504 Mt green products helped save energy and reduce carbon emissions to an estimated 6.517 Mt. Environmental protection and energy-saving steel products are mainly used in the green supply chain as follows:

Note: The coefficient used for external carbon reduction benefits calculation refer to the Japan Iron and Steel Federation and the Economic Research Institute which provides carbon reduction reference data circulated in Japan's domestic steel industry.

- Steel for wind power: In accordance with the government's "green-energy homeland", energy conservation and carbon reduction policies, EN10025-4 S460ML and S420ML ultra-thick plates with excellent weldability were developed, which has toughness at low temperatures and is suitable for offshore foundations and pile structures.
- Anti-annealing coarse-grained steel: Through composition designs and rolling process control, the distribution and size of precipitates can be optimized to improve the coarse grains of low-carbon steels after annealing, saving rework or scrap waste.

» High-strength hot, cold-rolled and hot-dip galvanized steel for vehicles: It can strengthen the structural safety, reduce weight, improve fuel efficiency and save fuel consumption for automobiles.

For more details [Product Environmental Footprint] https://www.csc.com.tw/csc_e/hr/csr/in/cm8.htm

3.4.2 Green Business Development

Low-carbon economy is now a global trend, and green industries and green growth deriving from low carbon economies are becoming the focus of international competition. CSC has long contributed to the improvement of environmental protection and R&D for green energy; apart from the development and wide application of energy-saving steel products, CSC also has performed well in terms of recycling resources and energy integration.

For complete information [Green Business Development] https://www.csc.com.tw/csc_e/hr/csr/in/in7.htm

Offshore Wind Power

To support the government's green energy policy and contribute to environmental sustainability, CSC has decided to engage in offshore wind power business and chosen feasible steel-related areas, including substructure manufactured in Xingda Port. To promote the localization of the wind power industry, CSC has chosen the Zone #29 project to build up capability for the localization of offshore wind power.

CSC also established Sing Da Marine Structure Corporation (SDMS) by investing 6.8 billion TWD to build a professional jacket foundation production line at Xingda Port. The plant was completed at the end of 2019. At the same time, CSC cooperated with local suppliers to provide the jacket foundations for grid-connected wind farms commissioning from 2021, and develop the localization of offshore wind power industry in practice.

Action Plan

In order to assist the government in implementing the localization policy of the offshore wind power industry, CSC promoted the localization development of the offshore wind power industry with the Zone #29 Project. Specific actions include:

» Leading Wind -Team to Promote Localization of Wind Turbine Generator's Components

In September 2016, CSC cooperated with the Metal Industries Research and Development Center (MIRDC) to invite 21 local suppliers to set up the "Offshore Wind Power Component Localization Industry Alliance (Wind-Team)." CSC served as the matchmaker for the Wind-Team members and supplier to negotiate for component supply cooperation and MIRDC was responsible for planning the Wind-Team's industrial upgrade guidance program. Through the matching of CSC and MIRDC and technical upgrade consultation, the members' product quality, cost, and delivery capacity have improved. The purpose is to enable Wind-team members to supply components that meet the requirements of wind turbine manufacturer and become qualified suppliers.

» SDMS - the Jacket Foundations Manufacturer

Jacket foundations accounts for a higher proportion of total costs and has stricter quality requirements. In view of this, SDMS has established technical cooperation with well-known foreign professional manufacturers in the construction of Xingda Port in Kaohsiung. By combining local suppliers to build a supply chain, it is expected that the annual production will be 50 jackets prospectively.

The completion ceremony of the first transition piece mock-up made in Taiwan

SDMS – The first company in Taiwan to break ground on the jacket foundation factory

Taiwan's first transition piece mock-up to a jacket foundation

Key Drivers of Offshore Wind Power Industry Chain

Offshore wind power is the renewable energy with the highest demand for steel. In addition to producing high-quality steel for wind farms, CSC has also invested in companies such as SDMS and CSPC to promote business as well as the establishment of Taiwan International Windpower Training Center to cultivate talents in hopes of utilizing core competencies to support the development of Taiwan's offshore wind power industrial chain. Through cooperation with local supply chain companies and combining local / foreign experiences with technical resources, CSC cultivates local wind power professionals, upgrades the local industrial technology, and promotes economic development.

The jacket foundations are the essential role that offshore wind turbines can be firmly installed and generate electricity on the ocean. In addition to supporting the weight, the jacket foundations must also have the ability to resist earthquakes, typhoons, currents, and corrosion and steadily operate for 20 years. Therefore, SDMS, completed at the end of 2019, has a professional jacket foundation production line that marks the beginning of the localization of the wind power industry.

Benefit I Reduce Risks and Costs, Improve the Local Economy

Kaohsiung has a relatively complete steel industry supply chain with well equipped port and transportation conditions, making it advantageous for manufacturing jacket foundations for offshore wind power. The establishment of SDMS can reduce long-distance transportation risks and tax costs, lower the purchase costs from wind farm developers, and drive local related industry chain investment and supply business opportunities.

Foreign welding technicians were invited to teach the European welding methods

The development of the offshore wind power industry requires a large number of professionals to improve the increasingly vigorous production capacity of the supply chain.

Benefit II Cultivate Resources and Foster Talents in the Wind Power Industry

In order to improve the technical skills, CSC invests in the "Welding Training Course," held by the Workforce Development Agency, MIRDC, and NKUST, and more than 200 senior CSC / expatriate welding staff members with an average of 10 years welding experience were selected for training. These employees obtained the highest level 6G certification to meet the production requirements of jacket foundations. In order to shorten the learning curve, the production technology from Spanish professional jacket manufacturer (Nervión) was introduced, and foreign welding technicians were invited to personally teach the European welding methods. In 2019, all welders trained by CSC obtained DNV GL certification for Orbital Welding Operation Certificates, and passed the DNV GL certification for Welding Procedure Specifications (WPS). It is expected to bring at least 2,000 jobs opportunities in areas including as hoisting, cold working, and welding.

Solar Photovoltaics

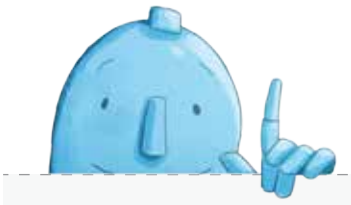
CSC actively responded to the renewable energy policy. In October 2016, CSC combined companies within the group to establish the CSC Solar Corp., which is responsible for promoting the development of CSC's solar power generation business. Based on solar power generation, CSC Solar starts with using the 80-hectare rooftop of all group companies' plants, and it is estimated to have a total power capacity greater than 80MW. The annual power generation is expected to reach more than 102 million kWh, achieving the vision of reducing carbon emissions with green power.

At present, CSC Solar has established a solar photovoltaic professional team, which is positioned as a solar photovoltaic project system supplier and has relevant EPC implementation, technical, and engineering capabilities in order to provide customers with stable power generation efficiency and comprehensive services. By the end of 2019, CSC Solar had completed the inspection and metering by Taipower Corp., and obtained the equipment registration from the Bureau of Energy (BOE). The amount of solar photovoltaic energy that is under contract with Taipower had reached 83.2MW. The cumulative power generation has reached about 125 million kWh. From 2020, CSC Solar will generate at least 100 million kWh of green electricity per year equal to 53,000 tCO_2 reduction every year.

Action Plan

After the establishment of CSC Solar Corp., the short-term goals are mainly focused on completing the construction of CSC Group's 80MW rooftop solar photovoltaic system from 2017 to 2019. In addition to achieving the short-term three-year goal, the management team has a long-term mission and vision which is to further develop solar photovoltaic fields and green energy related industries. The relevant development strategies are set out as follows:

- Improve the power generation efficiency of photovoltaic power plants, strengthen the operation and maintenance capabilities of PV power plants, and create stable profits.
- Discover the direction and goals of future operation through SWOT analysis based on the renewable energy policy, and build a stable roof-type solar photovoltaic field CSC's industrial chain in order to enter the area of ground-mounted PV power plants.
- Promote the application of green energy generation technology to create differentiated advantages.



CASE HIGHLIGHTS

CSC Floating Solar Photovoltaic System

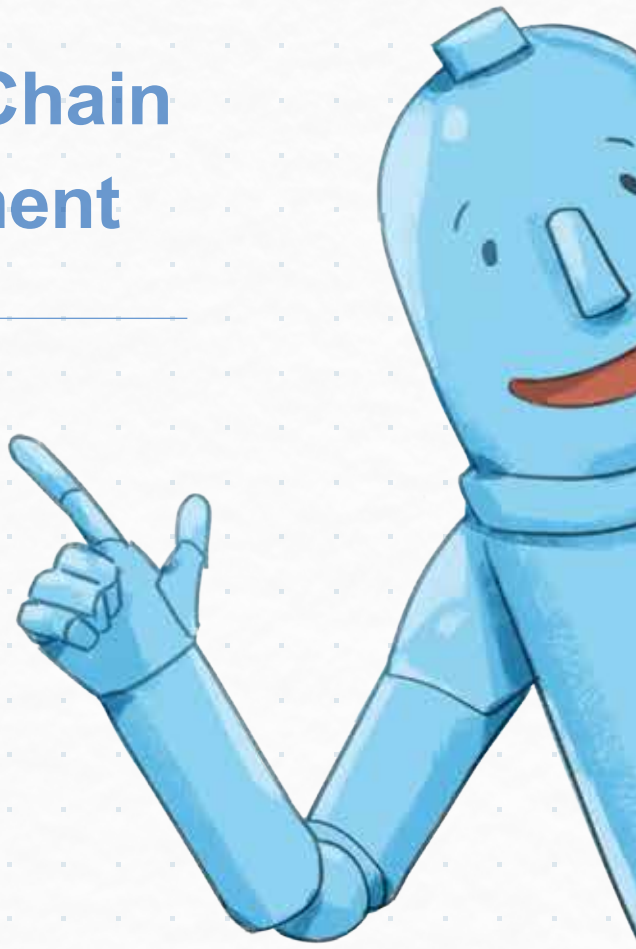
https://www.csc.com.tw/csc_e/hr/csr/in/in7.htm

Light Rail Transit

"Rail transit" is one of the best transportation solutions for energy saving and carbon reduction. As a local enterprise, CSC participates in public construction, upholds corporate responsibility, and carefully evaluates the participation in rail projects in accordance with policies. CSC cooperates with local governments to provide citizens with a light rail system that is safe, comfortable, convenient and environmentally friendly.

Through ingenious design technology and combining local characteristics, the light rail transits become mobile urban landmarks for its friendly design and convenience are appealing to people and bring sustainable prosperity to people. For example, the Danhai / Ankeng light rail transits were designed and manufactured by Taiwan Rolling Stock Co., Ltd in cooperation with foreign manufacturers, demonstrating the "Made in Taiwan" capability.

4 Industry Chain Improvement



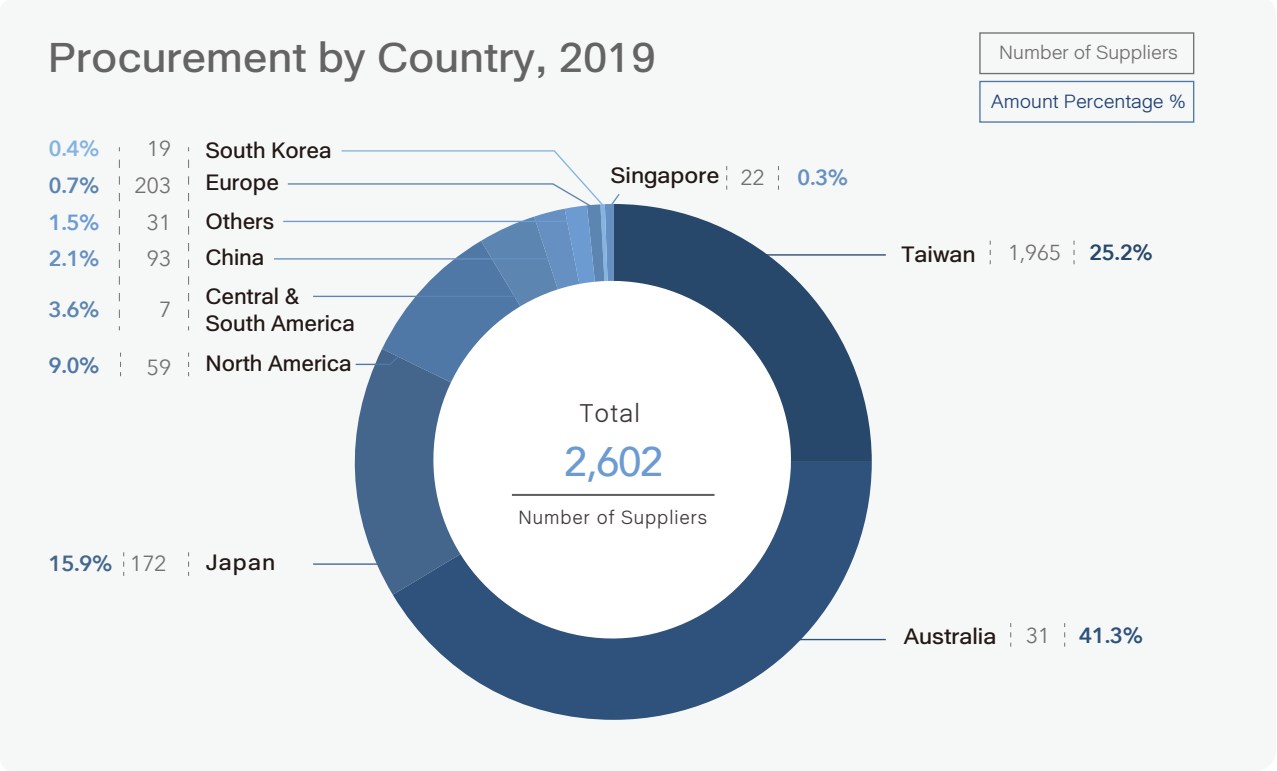
4.1 Supply Chain Management

CSC's supply chain management can be categorized into the following sections: Equipment and material procurement, Transportation, Security and Contractor, which are managed by different responsible departments. The management and assessment of suppliers are handled by each unit in accordance with the provisions of the CSC's quality control regulations, the "Steel Quality Manual."

In addition, in order to strengthen supply chain management, CSC requests all subcontractors involving in each bid to incorporate an anti-corruption clause in the Contract as the following: "The subcontractor undertakes that its bid price shall not include bribes, gifts, commissions, rewards or other unjust interests, and the subcontractor also undertake that it shall not offer the same to any managers, employees, their spouses, lineal relatives by blood, consultants, or subcontractors for design and / or planning of CSC." In case of any violation, subcontractors shall be liable for all damages suffered by CSC. CSC is entitled to revoke or terminate all contracts signed with the subcontractors. If such violation is severe and be reported according to violation of article 13 in the "Supplier's Quotation Notice". The report hot line is +886-7-8021111 # 2191. (URL: https://cs.csc.com.tw/mqz/open/mqzp2)

4.1.1 Equipment and Material Procurement

CSC has committed to not using any minerals from Democratic Republic of the Congo, its neighboring countries or any mines controlled by armies or rebel groups, in its products or packing. Through enhancing supply chain management, CSC effectively identifies and traces material sources to eliminate the use of conflict minerals. Any mine that is suspected to involve in conflict minerals would be disregarded in investment evaluation. CSC also pays attention to human rights conditions in the countries providing equipment and materials and adjusts procurement decisions accordingly. The tender instructions and contract terms stipulate no bribery, no infringement, and environmental and safety in-plant regulations. In accordance with the "Occupational Safety, Hygiene, Pollution Prevention of Procurement and Contracting Rules" in 2019, the suppliers were evaluated on environmental aspects for 7 types of raw materials. The results were that all the indirect risks were all below moderate.



For more details [Local Procurement] https://www.csc.com.tw/csc_e/hr/csr/par/par6.htm

4.1.2 Transportation

The transportation of CSC's imported raw materials and exported steel products is entrusted to China Steel Express Corp. (CSE), which uses its own fleet or hires chartered vessels. CSE is an AEO certificated corporation that meets CSC's supply chain safety regulations. For domestic transportation, CSC demands transportation suppliers to obtain the certification of OHSAS 18001 and must complete the verification for transitioning to ISO 45001 before the end of March 2021 and strengthen the management accident risks during transportation in order to prevent occupational hazards.

Since 1999, CSC has stipulated that the ages of the vehicles for carrying finished products must be compliant with EPA stage 4 vehicular air pollutant emission standards to ensure eco-friendliness. Also, the existing worn-out vehicles have been annually scrapped since January 2017. Since October 2019, all the vehicles for delivering products are in compliance with the 4th or 5th stage air pollutant emission standards. Currently, the vehicle age must not exceed 15 years. CSC uses railway transportation from the mine site to the berth to reduce air pollution. In order to improve road safety and protection, transportation companies were required to install a driving vision assistance system before the end of June 2018. From 2019 onwards, in addition to compulsory insurance, the third party liability that covered injury or death for each person will be increased to no lower than 5 million TWD. For any accident causing injury or death, the compensation is no less than 15 million TWD.

In 2019, 1,546 product carrying vehicles passed the standards of environmental impact assessment, and 100% of them meet the environmental standards involving air pollutant emission standards. 98 existing suppliers were assessed with their social impacts, 2 of them were identified having occupational safety risks, which have been improved after taking disciplinary action.

4.1.3 Security

The access control and security of CSC's factory is assigned to China Steel Security (CSS), with 150 security staff members onsite. According to the provisions of Article 10-2 of the Private Security Service Act, "When a security company hires security guards, it shall offer them pre-service professional training of one week or above. For current security guards, it shall provide them with in-service training at least 4 hrs every month". CSS not only handles education and training according to law, but also includes legal knowledge, skills required when being on duty, human rights advocacy, etiquette, etc., providing 600 hours of training in total a month. CSC also regularly implements emergency response at various sentries and administrative buildings annually to maintain access control security.

4.1.4 Contractor

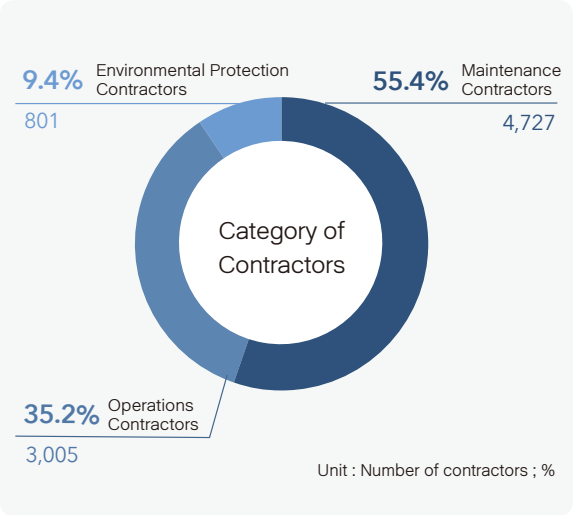
Owing to the industrial characteristics of steel manufacturing, a large number of manpower could be required for equipment revamping in a short period of time, CSC uses contracted workers to cope with fluctuating demand. Due to the time constraints for production equipment maintenance tasks, contractors located in nearby areas are preferred, thus creating a vast amount of stable job opportunities locally. This is yet another example of CSC fulfilling corporate social responsibilities while maintaining sustainable business operations.

CSC Improves Working Conditions of Contractor :

- Increase safety and health management fees
- Establish vacation policies and compensation for working on holidays
- Establish safety cultures
- Adjust contracting fees in accordance with the policies such as “one fixed day off and one flexible rest day”

According to “Management Guidelines for CSC Operations, Maintenance, and Environmental Protection Contractors,” maintenance, operations, and environmental protection contractors are to provide manpower, equipment and technical support for CSC in maintenance, operations and environmental protection related tasks. These contractors are categorized based on the nature of the tasks, amongst which the one related to maintenance is the majority.

Maintenance Contractors	Responsible for repair and maintenance of spare parts in operations department, or repair and manufacture of test samples in technical department.
Operations Contractors	Responsible for operations-related tasks that require basic technical skills to operate or have only indirect access to production equipment, or involving non-technical labor works.
Environmental Protection Contractors	Responsible for the disposal of industrial waste produced during production process.

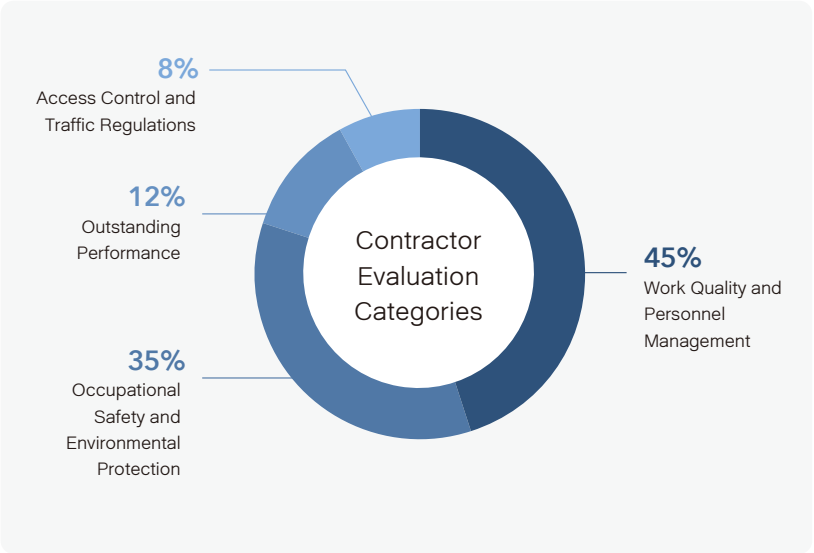


Contractor employees working in CSC must have insurance mandated by the government, and comply with CSC's safety and health work rules. A penalty will be imposed for any violation, and the fine will be designated exclusively to a fund for supervision, correction, and improvement of the safety and health of contractor employees. New contractors must fill out evaluation forms, disclosing information including primary business activities and verified certifications (OHSAS 18001 / ISO 14001) to prove that they are legally registered, adequately insured, tax-paying companies with healthy financial status. Also, they must genuinely report on the critical occupational safety and / or environmental protection issues for the past 3 years to allow the departments concerned to classify and evaluate as well as arranging on-site inspections.

The agreements between CSC Plant Engineering & Maintenance Dept. and service providers are in compliance with regulations. Also, in accordance with the ISO 9001 regulations on contractors, CSC assesses new contractors and re-evaluates them every 3 years to ensure that all contractors abide by national regulations, and no child labor is used or regulations that breaching the right to freedom of association and collective bargaining are in place. CSC also dedicates to the supervision of contractors to enhance the working conditions of their employees and to ensure the compliance with the Labor Standards Act by carrying out inspections on the labor conditions of contractors in monthly performance evaluations. No incident was reported on use of child labor, forced or compulsory labor, or violation against labor conditions in 2019.

Contractor Evaluation and Assessment

According to Contractor Management Regulations, units responsible for evaluations must provide annual evaluation reports 2 to 4 months prior to contract end date, based on regular evaluations and daily performance, as part of the supporting documents for contract renewal. Contractor Management Regulations also state that contract executing units must conduct a monthly evaluation based on contractor performance and compile the results in the "annual evaluation report," in which a score below 70 would result in disqualification for contract renewal. There was no such incident in 2019.



Establish Stable Partnership

CSC cares for its contractors, and in order for them to work with peace of mind and reduce turnover rate, the basic salary has been increased since 1 January, 2019 in accordance with the Labor Standards Act. CSC decided during the "Outsourcing Strategy Review Meeting" that if the base price calculation of CSC's contracts is lower than the minimum wage of the Labor Standards Act, then regardless of the contract expiry date, it will be adjusted in accordance with the Act and ensures that it is superior than the minimum wage stated in the Act. At the same time, CSC verifies the labor conditions every July to confirm that the minimum basic salary and payment in lieu of annual leave given by contractor employers are in compliance with the Labor Standards Act and the regulations put forth by CSC. Any discrepancies with regulations need to be explained by contractor employers and signed by contractor employees.

Safety and Health

CSC Contractor Safety and Health Committee was founded in 1983. Plant Engineering and Maintenance Dept. established "Safety and Health Guidelines for Plant Engineering and Maintenance Department Contractors" in May, 1984, to appoint a team consisting of experts from Industrial Safety and Hygiene Dept. and Plant Engineering and Maintenance Dept. to assist the implementation and tracking of the committee affairs. The committee members consisting of about 100 contractor companies in the areas of mechanical engineering, civil and steel construction, electrical engineering, and refractories, collaborate towards the common goals of ensuring the safety and health of contractor employees, strengthening labor quality, improving technical quality and establishing safety culture.

Contractor Safety and Health Propaganda	Gather contractors every month to announce new safety and health related information and regulations by CSC.
New Contractor ID Issuing Assessment	New contractors must attend mandatory safety trainings and be interviewed by managers of ID issuing organization. (Listed in Industrial Safety and Hygiene Dept.'s system)
Safety Care	Conduct on a monthly basis (Listed in Industrial Safety and Hygiene Dept.'s system)
Report of Near Misses	Reporting near misses is encouraged with rewards.
Implement and Promote Inherent Safety	Urge contractors to comply with CNS 4750, and reinforce by frequent inspections to reduce scaffolding related safety hazards.
Safety Inspections	All levels of management personnel regularly conduct safety inspections in contractors' workplace and keeps records. (Listed in Industrial Safety and Hygiene Dept.'s system)

Contractor Training

CSC maintenance units are responsible for arranging training courses and certifications based on the health and safety requirements as well as technical skills required for contractors to perform their work at CSC. The training has been proven to be effective. In 2019, subcontractor workers received a total of 40,517 hours of training in CSC.

Type	Training Course / Purpose	Contents	Persons	Hours / Course	Frequency	Total Hours
Safety Training	New hire training: Designed for new hires to pay attention to all safety hazards in work environment.	General safety and health training, Zero-Accident Program exercise, and safety and health regulation propaganda	6,430	6	3 times / week	38,580
Technical Training	Fire watch personnel: Designed to prevent fire accidents.	Hazard identification, firefighting equipment introduction, and flammable item identification	308	3	2 times / year	924
	Corrugated roofing: Designed to prevent safety hazards such as falling through.	Hazard identification, fall protection solutions, personal protective gear introduction	431	1	2 times / month	431

Type	Training Course / Purpose	Contents	Persons	Hours / Course	Frequency	Total Hours
Skill Certification	Scaffolding certification: To ensure scaffolding procedure could be proceeded properly according to requirement.	Technical drawing reading, construction layout, structure transportation and assembly skills assessment	102	3	1 time / year	306
	Metalworking: To ensure metalworking tasks are carried out up to the standard and safety requirement demanded.	Basic technical knowledge, good work quality and safety habits, proper execution based on drawings or samples	92	3	1 time / year	276

Note: Due to most contract workers of the related operations have already passed relevant training and certification because of the low turnover rate. Trainees who underwent fire watch training, corrugated roofing training, and metalworking training were fewer in 2019 than 2018.

For more details [Contractor Management] https://www.csc.com.tw/csc_e/hr/csr/par/par5.htm#par-Coop

4.2 Industry Upgrade

4.2.1 Industry Upgrade and Innovation

In order to meet the demand for continuous growth and the domestic upgrade of local steel industry, CSC has completed the plan for innovation consisting of five major research fields and will continue to implement the relevant R&D projects. The main R&D topics related to the five major research fields include:

» Core Technology of Electric Vehicle Industry

Developing required high-quality steel and relevant processing technology, such as electrical sheet of top class for power system and ultra-high strength steel sheet for automobile to match up the demand of industry chain.

» Intelligent Production Technologies

In order to achieve smart factories, developing primary technologies such as the Internet of Things (IoT), Big Data, and Artificial Intelligence (AI). Based on these technologies, CSC designs and deploys the advanced solutions such as quality prediction system, intelligent production scheduling system, dynamic control of metallurgical processes, and intelligent logistics systems.

The Unveiling of the Titanium-alloyed Art Image Wall with National Cheng Kung University

» Environmental Protection

Developing the technology for reducing pollutant emissions to air, water and land, including reducing benzene emission from Coke oven plant, fugitive dust monitoring of raw material field, high efficient wastewater reclamation, and BOF slag recycling.

» Important Industrial Materials

Applying external resources to develop essential materials of steel relevant and industry demand, such as high-grade aluminum alloy Si carbon anode material and medical aviation nitinol special alloy.

» "5+2" Industrial Essential Materials

Developing positively industrial essential material, such as steel for warship, ballistic steel plate and other armor steel and high strength plates for offshore wind turbines.

4.2.2 Upgrading Steel-using Industries

For more details [Industry Upgrade and Innovation] https://www.csc.com.tw/csc_e/hr/csr/par/par7.htm
[Upgrading Steel-using Industries] https://www.csc.com.tw/csc_e/hr/csr/par/par.htm

To enhance the competitiveness of the steel-using industries, CSC set up an R&D alliance with 16 steel-using industries between 2006 and 2014, and invited 66 companies and 8 academic and research organizations to launch 13 technological projects. Also, through the implementation of more diverse industry upgrade plans, CSC has strengthened the collaboration with academic and research organizations as well as strategic partners.

In view of the rapid change of the industrial environment, CSC started the second stage of industry upgrading in 2017. On the basis of previous experience, CSC has set four major strategies as follows: “Develop basic technology,” “Increase sales channels,” “Establish industry cloud,” and “Facilitate Industry 4.0. According to the current status of each industry, CSC links the previous established multiple platforms to set out the development goals and work projects with the anticipation that the effort will infuse new energy, induce the potential champion for individual industry, let local industry see opportunities of transformation by implementing industry cloud and Industry 4.0, find the future direction of development, enable the ecosystems of local steel-using industry to possess an indispensable role in global supply chain and make CSC be the ” Number One and Only One” strategic partner in market.

Service Teams that Enhances the Competitiveness of the Steel Industry

In the face of unpredictable changes in the international market, CSC recognizes that it is not sufficient to just assist downstream industries in upgrading key technologies. Instead, CSC must also expands its assistance in downstream customers' marketing processes such as production management, property management, quality control, and even financial operations and business systems. CSC gathers external experts such as CSC's retirement talent pool, the Metal Industries Research & Development Centre (MIRDC) and CSD to form an "Industry Service Teams.” The service teams aim to provide assistance with technical services, as well as offering a full range of services covering the production system, quality system, and logistics. What's more, CSC provides professional advice based on the customer's needs. A total of 46 industry surveys were completed in 2019.

Future work will focus on the following four aspects: "Diagnosis and Identification of Potential Champion Manufacturers", "General Training for Retired Experts", "Explore Common Issues in the Industrial Chain" and "Strengthen Customer Talent Cultivation and Technology Upgrade".

ACTUAL CASE

Assist MOSA to Improve Product Yield

https://www.csc.com.tw/csc_e/hr/csr/par/par.htm

Participated in steel-related Industry Forum

4.3 Domestic and International Association

4.3.1 Domestic Association

As the products and by-products of CSC are supplied to domestic industries, CSC actively participates in the activities hold by domestic institutes and associations to strengthen mutual cooperation. The major institutes and associations CSC attended in 2019 were as follows:

Field	Organization	Participation
Steel Industry	Taiwan Steel and Iron Industries Association	CSC Chairman Chao-Tung Wong as the chairman
	Chinese Institute of Engineers	CSC president Shyi-Chin Wang as the director
	Taiwan Institute of Steel Construction	Dragon Steel Corporation president Chung-Chia Huang as the vice chairman
Corporate Sustainability	Business Council for Sustainable Development of Taiwan	To cooperate with members to progress the targets of corporate sustainability and environmental protection
	Taiwan Association of Soil and Groundwater Environmental Protection	
	A member corporation of Center for Corporate Sustainability	

4.3.2 International Association

Organization	Program	Benefit
worldsteel ASSOCIATION **World Steel Association, worldsteel**	As a core member » CSC participates in the committees of technology, safety, environment, raw materials, economy, and product sustainability as well as expert groups. » CSC joins data collections including CO_2, LCA, and energy, provides comments, and supports propaganda.	CSC shares experiences via exchanges, cooperation, and services, thereby connects and updates the latest development of global steel industry.
SEAISI South East Asia Iron and Steel Institute **South East Asia Iron and Steel Institute, SEAISI**	As a key supporting member » CSC assists the development of the technology training program, environmental safety, economics, and implementation of ES / STECO affairs.	The 2019 Southeast Asia Iron and Steel Institute Training was hosted by Taiwan and the theme was "Application of Smart Manufacturing in the Iron and Steel Industry." Representatives from 5 Southeast Asian countries signed up to participate
OECD BETTER POLICIES FOR BETTER LIVES **Organization for Economic Cooperation and Development, OECD**	CSC regularly participates in the meetings of the steel committee under the instruction of the Ministry of Economic Affairs, Taiwan (R.O.C.)	With this platform, CSC is able to communicate with official steel authorities in different countries and seek opportunities to break through existing trade barriers.

For more details [Connection to Global Trend] https://www.csc.com.tw/csc_e/hr/csr/par/par8.htm

Material Topic 4.4 Circular Economy

Benefit Highlights in 2019

- 95% — Rate of waste reuse reaches 95%
- 85% — 85% of waste is treated within the factory to reduce the carbon footprint of transportation.
- Continue to achieve the goal of "zero solidification landfill"
- Highest Rating — Obtained the BS 8001 circular economy certification for "BOF Slag Used as Aggregate in Asphalt Pavement" from BSI and obtain the highest rating (Optimizing).
- Taiwan Corporate Sustainability Awards 2019 "Circular Economy Leadership Awards"

Meaning for CSC

The material resources and resources for processes and end applications are all taken from the environment. In order to reduce the burden on the environment caused by operations, CSC is committed to waste recycling in accordance with the concept of steel life cycle, and at the same time integrates the resource chain in and outside of the Linhai Industrial Park and properly recycles waste to achieve circular economy.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
• The recycling ratio is over 90%, and zero solidification landfill.	• In line with the upgrading of manufacturing processes, development of new technologies, and government policies, CSC increases ways of recycling waste.	• Maintain the waste recycling rate at 90% and above, and maintain zero solidification landfill; • Increases ways of recycling waste and reducing the need for outsourced treatment in order to meet the spirit of circular economy.

Management Approach

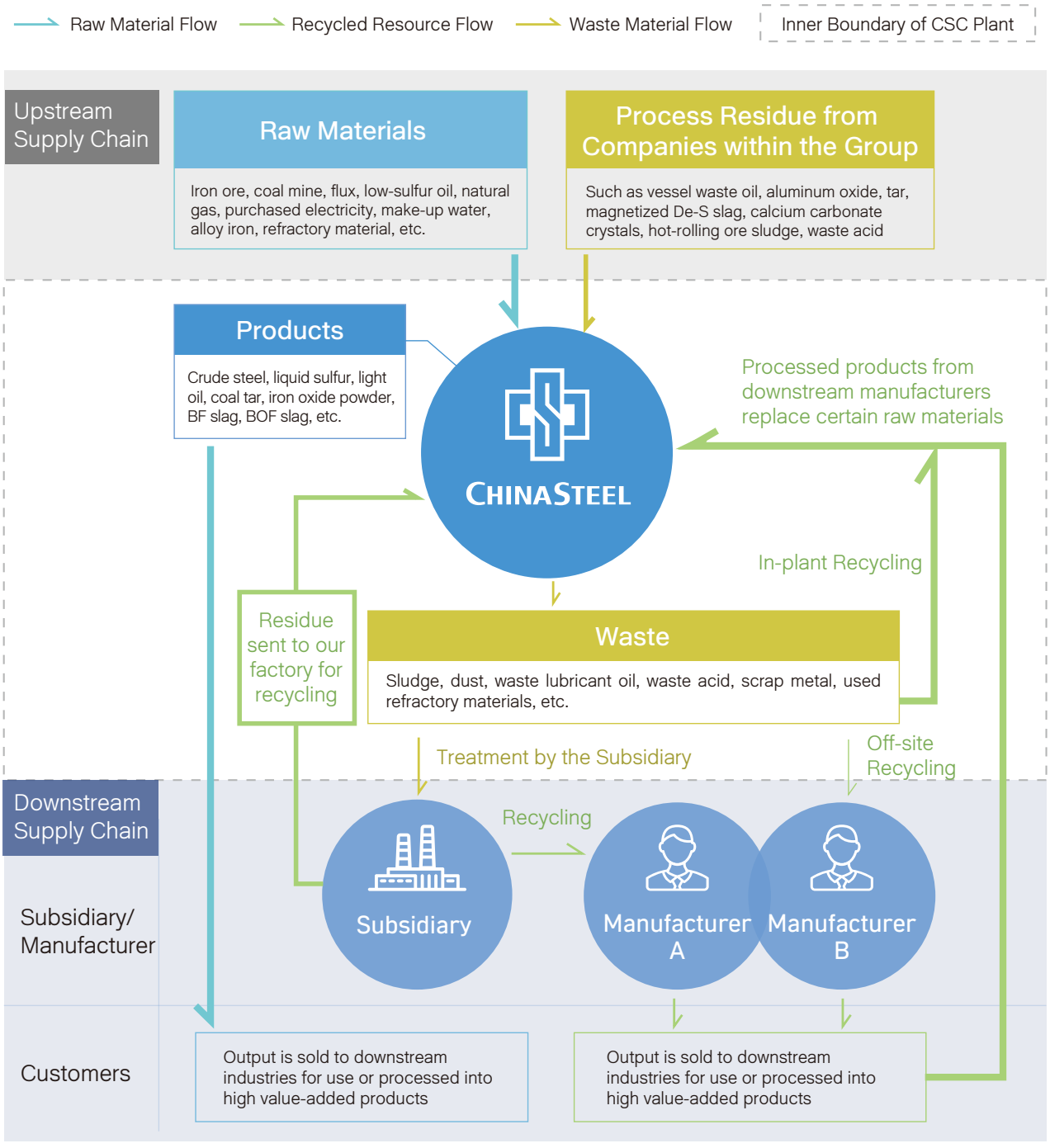
In order to achieve resource recycling and sustainable development, waste needs to be considered as a part of the recycling process. CSC's management strategy is to prioritize waste as an available resource. In addition to cooperating with policies to implement the recovery of goods and resources, CSC collects and reprocesses various types of process residues, and receives off-site waste and most of the waste can be utilized efficiently according to the different needs, such as blast furnaces, converters, and acid regeneration. The excess iron-containing sludge can also be transferred to the cement plant as a recycled raw material, reducing the need for the cement plant to purchase iron ore from abroad and also reducing the burden on the environment.

In order to strengthen the waste flow management, refinement and classification, CSC has developed waste management systems. Through the functional management in three major aspects: "record control", "flow tracking" and "reporting statistics", the self-management of waste disposal is strengthened and the need for manual paperwork is reduced. For outsourced waste treatment, we also arranged visits to the processing industry to understand the proper disposal conditions and make records to show that we are responsible for the waste output, storage, and treatment.

Recycling

By-products from CSC productions include coal tar, light oil, BF slag, BOF slag, iron oxide powder, desulfurization slag, and residual iron of desulfurization slag. On the basis of the recycling network built in the past, the granulated BF slag is sold to domestic businesses, and others are recycled and processed by affiliate companies and provided to chemical, construction, civil engineering, electrical, commodity, and other industries. The resources can be effectively reused, and the industrial ecosystem in Kaohsiung Linhai Industrial Park is expanded. While improving the recycling rate, it also reduces the environmental burden caused by long-distance equipment transport, thereby achieving carbon reduction and fulfilling corporate social responsibility.

Material Management Process



Terminal Processing

CSC manages the storage and disposal of hazardous waste in accordance with Waste Disposal Act, and carries out audits internally every year. Before commissioning the disposal of hazardous waste to the cleaning company, CSC will check its qualifications. After signing the contract with the cleaning company, CSC will report to Industrial Waste Report and Management system. After completing the waste clearance, CSC will ask entrusted company to provide proof of proper waste disposal.

CSC's hazardous industrial waste in 2019 included lead sludge and chromic sludge from the steel rolling process. Among them, the lead sludge was recycled by legal enterprises authorized by EPA, and the chromic sludge was recycled within CSC's production processes. No hazardous waste was shipped overseas in 2019.

Implementation Results

Through implementing the management policies mentioned above, the total waste treatment output produced by CSC in 2019 was 664,106.2 tonnes, and the output of waste per unit of crude steel (CS) was 69.96 kg / tCS.

Item	General Industrial Waste			Hazardous Industrial Waste		Output
year	Amount (Tonnes)	Recycling (%)	Incineration (%)	Amount (Tonnes)	Recycling (%)	Amount (kg / tCS)
2017	401,648.0	92.6%	7.4%	38.5	100%	43.64
2018	672,864.6	95.3%	4.7%	34.4	100%	71.35
2019	664,052.8	95.6%	4.4%	53.4	100%	69.96

Note: I. The hazardous industrial waste was mainly recycled from CSC production processes, and barely had any negative impact on the ecosystem and environment.
II. The blast furnace ash and sintered ash produced by the steelmaking process of CSC are used in the recycling process due to the high iron-containing feature, which is an important raw material for ironmaking recycling. In light of the Principals of Recycling and Recovery for Industrial Wastes issued by the Environmental Protection Bureau, Kaohsiung City Government, CSC registered the blast furnace ash and sintered ash in environmental protection permit documents and reported to the authority. This has led to an increase of approximately 260,000 tonnes of general industrial wastes annually since 2018.

On average, 85% of CSC's waste is recycled in the plant, and only 15% of the waste needs to be shipped out of the factory, therefore it is relatively difficult to cause external pollution. However, CSC will cooperate with authorities in investigating waste violations in other places, and provide technical advice and opinions. At the same time, through exchange of ideas with external entities, the waste management of CSC and its auxiliary companies.

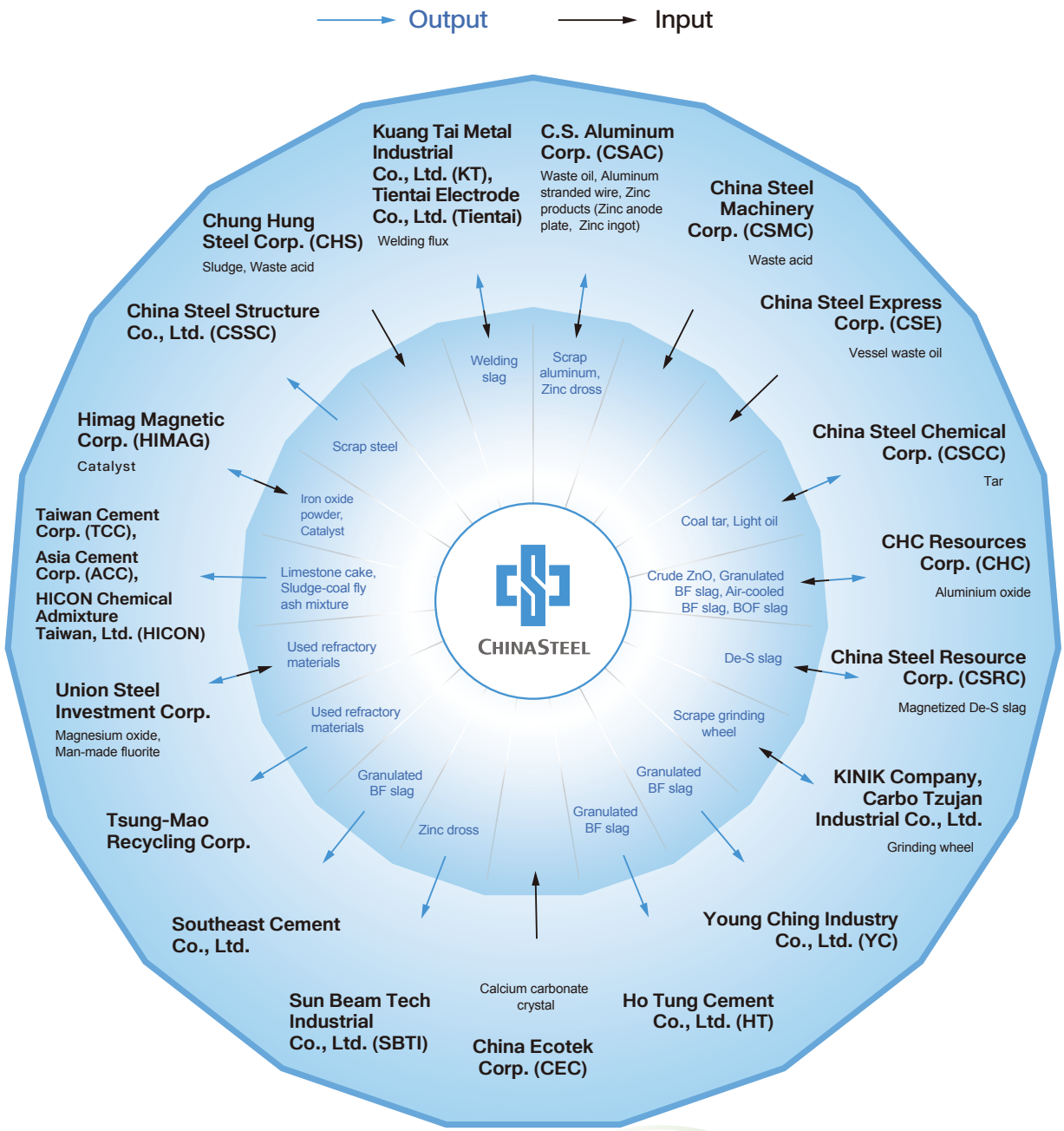
Excellent results have been achieved in the reduction of by-products (solid residue), in-plant recycling, and off-site recycling. After years of hard work and close cooperation with academia and other industries, CSC has reached the "zero-solidification landfill" milestone for the first time in July 2001. Since then, CSC has set the milestone as its goal, and it was accomplished in 2019 as well. A total of 6.208 million tonnes of process by-products (wet basis) were recycled in 2019. About 26% of the by-products were recycled within the plant and 74% were recycled outside the plant.

Category	Annual output (10,000 tonnes)	Recycling (%)	
		In-plant	Off-site
BF slag	321.8	1.6	98.4
BOF slag	117.4	51.1	48.9
De-S slag	28.7	47.6	52.4
Dust	30.5	90.4	9.6
Sludge	41.2	80.7	19.3
Mill scale	31.7	99.8	0.2
Refractory materials	8.1	82.6	17.4
Construction soil	8.8	0.0	100.0
Others	32.6	10.2	89.8
Total	620.8	26.0%	74.0%

For more details [By-products Resourcization] https://www.csc.com.tw/csc_e/hr/csr/par/par9.htm

4.4.1 Industrial Ecology Network

In 2019, 24 companies, including CSC, were involved in the Industrial Ecology Network. It was aimed to build a recycling network for reusing byproducts such as BF slag, BOF slag, De-S slag, sludge-coal fly ash mixture, coal tar, waste acid and used refractory materials, to each other. CSC will continue promoting the "Industrial Resource Integration Plan" in accordance with the government policy and expand the waste recycling operations in collaboration with the manufacturers of Linhai Industrial Park so as to construct a resource sharing and recycling network among industries in the industrial park, improve the operating conditions and competitiveness, and keep in line with the global trend of sustainable development.



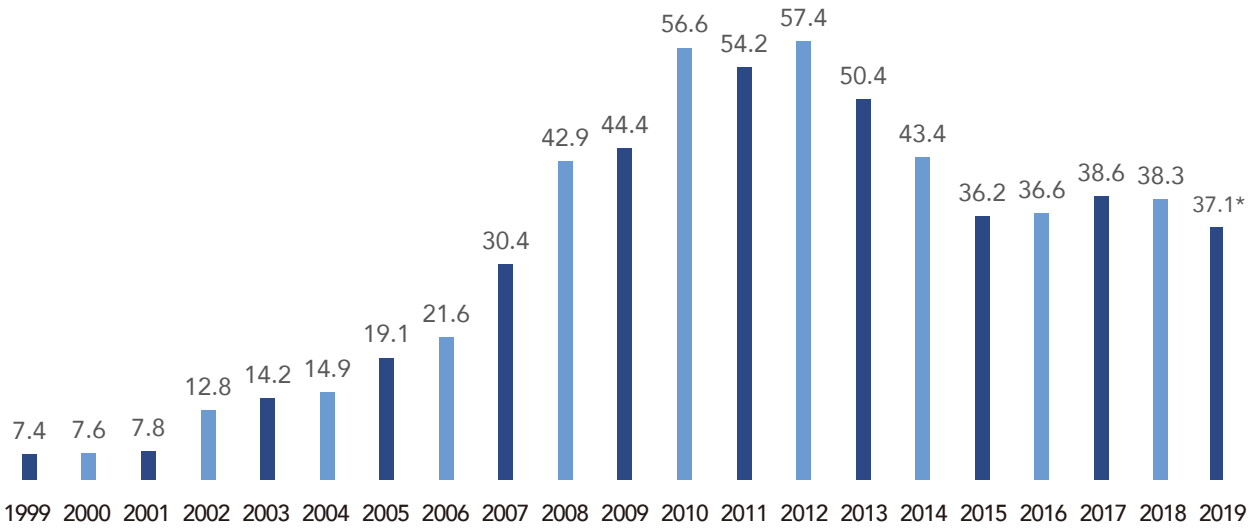
4.4.2 District Energy Integration

CSC is located in Kaohsiung LinHai Industrial Park with a number of petrochemical and steel plants surrounding it. CSC then has long utilized steam produced from combined heat and power (CHP) and waste heat recovery as well as industrial gases produced from oxygen plant to share excess energy with neighboring plants. With the complementary uses of steam, oxygen, nitrogen, argon, compressed air, coke oven gas, etc., energy and resources in the district is efficiently integrated. District Energy Integration not only increases energy efficiency but also reduces resource consumption and pollutant emissions in the region. As the environmental quality is improved, it brings substantial benefits to the economy, the environment, and the society.

So far a total of 14 manufacturers, including CSC, have joined the District Energy Integration. The energy that CSC sells include steam and oxygen, nitrogen and argon produced by the Oxygen Plant. Among all, the main item was steam, and the amount of sold steam in 2019 was 1.544 million tonnes (Mt), which saved 119,000 kL low-sulphur oil. In terms of reducing air pollution and greenhouse gas (GHG) emissions, it is equivalent to reducing 371,000 tCO_2e, 1,128 tSOx, 783 tNOx, and 111 tonnes particulates, creating a multi-wins situation for CSC, customers, and environment.

External GHG Reduction from Steam Sales

Unit : 10,000 tCO_2e

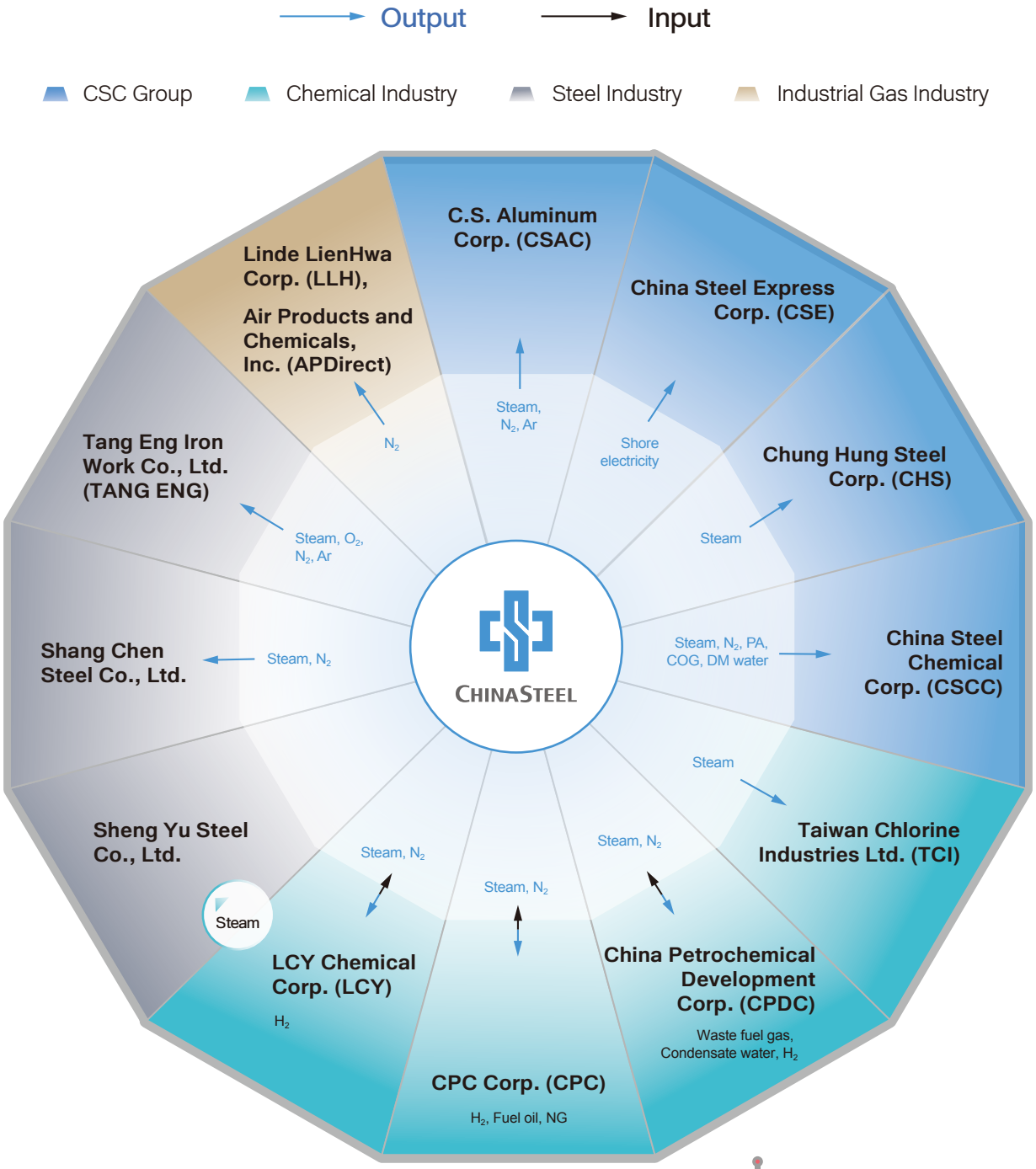


Note: I . GJ = 1 billion joules

II . With an estimated efficiency of 94% of newly installed boilers, 1 kL fuel oil can produce 13 tonnes of steam, so the amount of steam sold is 1.544 million tonnes, which generates energy equivalent to the use of 119,000 kL low-sulfur oil.

III. The calculation of environmental benefits:

- Energy saving: The heat value of fuel oil conversion is cited from the average detected heat value of CSC in 2019, which is 9,405 Mcal / kL.
- Air pollutant reduction: The formula of calculation and coefficients were refer to Air Pollution Control Fee Collection Regulations, EPA.
- GHG emission reduction: The reduction only covered CO_2 emission before 2018, with the factors cited from the IPCC 2006 National Greenhouse Gas Inventory Guide-CO_2 emission coefficient of fuel oil. From 2019, N_2O and CH_4 were also involved in the calculation coverage, using the factors cited from the GHG emission coefficient list (version 6.0.4) announced by EPA.


Output
Input
CSC Group
Chemical Industry
Steel Industry
Industrial Gas Industry
C.S. Aluminum Corp. (CSAC)
China Steel Express Corp. (CSE)
Chung Hung Steel Corp. (CHS)
China Steel Chemical Corp. (CSCC)
Taiwan Chlorine Industries Ltd. (TCI)
China Petrochemical Development Corp. (CPDC)
Waste fuel gas, Condensate water, H2
CPC Corp. (CPC)
H2, Fuel oil, NG
LCY Chemical Corp. (LCY)
H2
Sheng Yu Steel Co., Ltd.
Steam
Shang Chen Steel Co., Ltd.
Tang Eng Iron Work Co., Ltd. (TANG ENG)
Linde LienHwa Corp. (LLH),
Air Products and Chemicals, Inc. (APDirect)
CHINASTEEL
Steam, N2, Ar
Shore electricity
Steam
Steam, N2, PA, COG, DM water
Steam
Steam, N2
Steam, N2
Steam, N2
Steam, N2
Steam, N2
Steam, O2, N2, Ar
N2

5 Environmental Protection

5.1 Environmental Concepts and Management

Vision

To be a trustworthy steel company of global distinction that pursues growth, environmental protection, energy saving, and value innovation.

To be eco-friendly by achieving KPI targets at / close to top international standards.

To demonstrate synergy through effective use of internal and external energy and resources.

To achieve low-carbon, low-pollution, and high-value targets by accelerating Best Available Techniques and renewable energy applications.

To support the governmental low-carbon economy policy by developing energy-efficient and emission-reducing products and engaging in new green businesses.

Environmental, Health and Safety (EHS) Management System

CSC obtained ISO 14001 certification for Environmental Management System (EMS) in 1997 and was approved for registration. CSC then combined EMS with OHSAS 18001 into the CSC EHS Management System, launched in 2005. Strategic decisions are made by Committee for EHS Management, chaired by the Executive VP. EHS policies are approved by the Chairman before implementation and subject to annual external audit. In 2018, the ISO 14001：2015 new standard was verified, and CSC obtained the new verification and passed the external audit in June 2019.

ISO 14001 EMS International Certification	100%
ISO 50001 Energy Management System	100%
CNS15506 / OHSAS 18001 Occupational Safety Management System	100%

*Coverage ratio of employees and contractors within CSC scope in 2019

EHS Policy

Care for Life

Respect life, practice environmental protection, safety, and health management to prevent occupational injury and illness and promote employee health.

Risk Management

Assess risks and environmental aspects. Reinforce risk control and pollution prevention.

Legal Compliance

Reinforce the identification and execution of legal requirements and strengthen correction and prevention actions.

Training and Communication

Educate employees with EHS concepts, establish a self-motivation culture, encourage involvement of employee and contractors, and strengthen communication with stakeholders.

Continual Improvement

Promote zero accident, energy conservation, and emission reduction; improve EHS performance and pursue sustainable operations.

EHS Management Committee

The EHS Management Committee holds two meetings every year, convening the first-level units of the production division and first-level supervisors from relative units to discuss EHS relevant management issues, and review tracked projects. The relative units include the Iron and Steel R&D Dept., Metallurgical Dept., Intellectual Property & Testing Technology Dept., New Materials R&D Dept., Green Energy and System Integration R&D Dept., Transportation Dept., General Affairs Dept., Smelting Engineering Dept., Rolling & Utilities Engineering Dept., and Civil Engineering Dept., By tracking and examining discussion and resolutions during each meeting, the goal of continuous improvement can be met.

Environmental Loading Reduction Commitment

The environmental load is of substantial concern regarding steel company investments, and reduction commitments and cap control have become requisites. CSC established an environmental load assessment system for investment projects. With the collaboration of all units, environmental load is assessed by proper scaling of existing production capacity, and CO_2 emission is evaluated by defining energy boundary and calculating energy use variation. CSC completed 4 projects of environmental load assessment, including #21 hot stove renewal in 2019.

Environmental Accounting

The EHS Accounting System, conducted by Finance Division, is established by simply and effectively, and collects by existing accounting system. Cost is classified as capital expenditure and recurrent expenses. By the end of 2019, CSC has invested 71 bi. TWD in environmental facilities. Amongst them, air pollution control accounted for 62% and water pollution control accounted for 18%.

Energy and Environmental Investments

Items (100 MM TWD)		2015	2016	2017	2018	2019
Capital Expenditure	**Energy and Environmental Investments**	21.0	34.1	27.6	23.5	31.8
Recurrent Expenses	**Government Charges and Fees**	1.7	1.8	1.7	2.3	2.6
	R&D	0.5	0.5	0.5	0.5	0.9
	Depreciation	12.6	12.3	12.4	13.6	15.0
	Operation and Maintenance	37.6	35.3	33.5	44.4	40.7

Note: MM=Million

Environmental Appeal

In case of abnormality, citizens can call CSC by phone through +886-7-802-1111#3799 in office hour or #3702 in off time. Designated personnel are responsible for understanding the abnormality and according to the severity to report to the responsible supervisor and following up instructions to solve problems. At the same time, we ask the suspected pollution department to check or investigate the cause of the abnormality and report the results of survey to the relevant departments. If the abnormality is caused by CSC, we will take action to control and correct by the regulations of Environmental Management System.

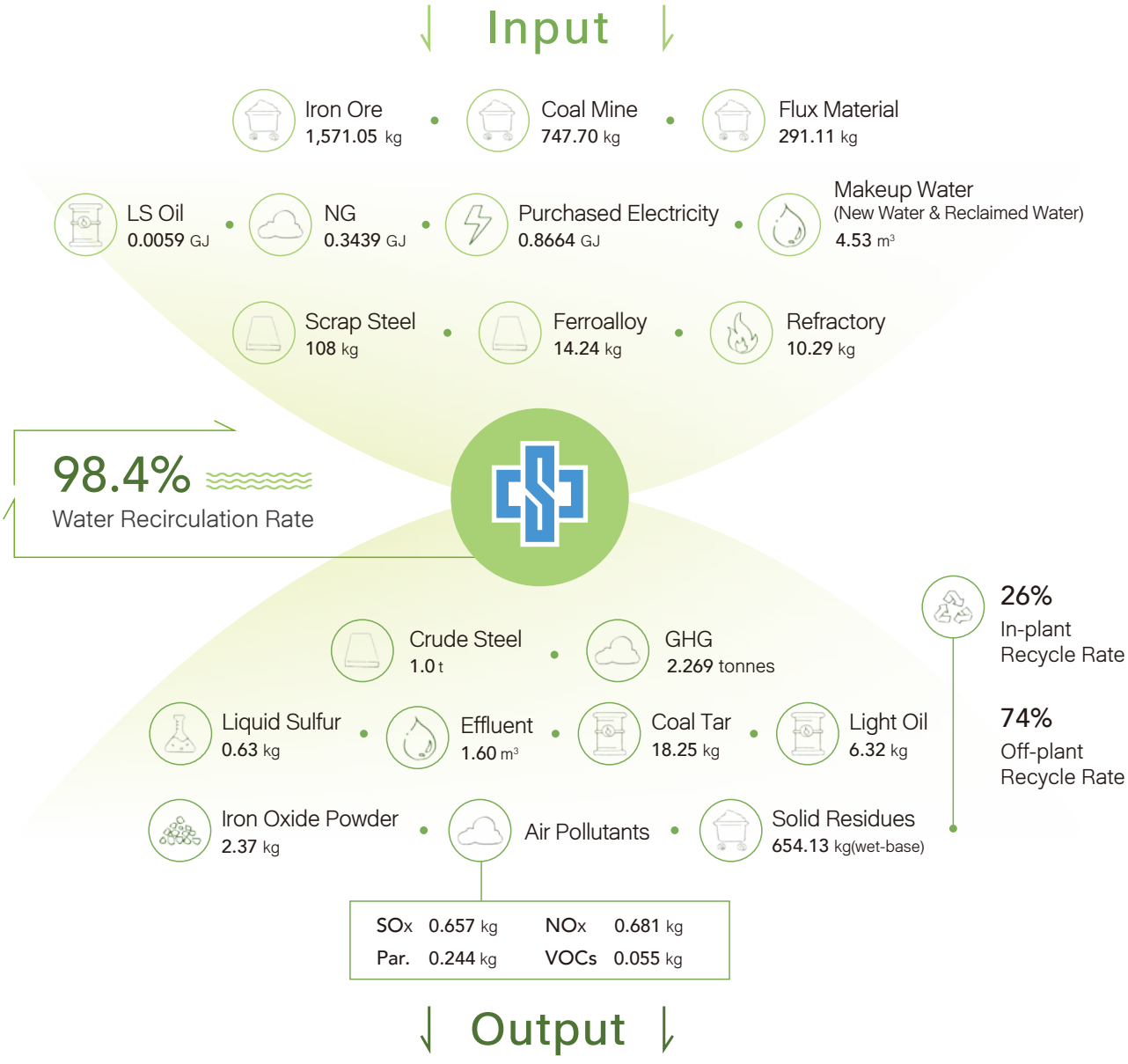
Legal Compliance

In 2019 CSC received 3 violation notices for pollution. The number of violation notices has reduced significantly in recent years, and it shows the effective implementation of self-control and improvement.

	2015	2016	2017	2018	2019
Target	≦ 5 counts / year				
Pollution	Water pollution	Air pollution	Air pollution	Water pollution and waste	Air pollution[II]
Issuer	KSEPB[I]	KSEPB	KSEPB	KSEPB	KSEPB
Counts / Fine (TWD)	1 / 0.01 MM	3 / 0.4 MM	3 / 0.3 MM	2 / 0.336 MM	3 / 0.4 MM

Note: I. KSEPB, also known as Environmental Protection Bureau, Kaohsiung City Government.
II. Two of violation notices were issued for the spontaneous combustion of the material conveyor belt incident in the factory area. The follow-up improvement measures include a comprehensive inspection of the conveying equipment, increased maintenance frequency, and optimizing temperature warning system. And the last notice is regarding abnormalities in the operation of the LD blow machine, the follow-up improvement measures mainly focus on adjusting the blowing time and procedure base on different steel types.

5.2 Green Process



Material Topic

5.2.1 Raw Materials Management

Meaning for CSC

CSC is the largest upstream steel production plant in Taiwan. The main products are steel plates, steel bars, wire rods, electromagnetic steel coils, galvanized steel coils and others. The main raw materials used are coal mines, iron ore and flux; the majority of the raw materials are imported. In recent years, the raw material market has changed from a buyer's market to a seller's market; therefore, the management of raw materials is one of the important determining factors for the steel plant to produce and profit.

Management Approach

Besides adjusting material stock according to domestic and international situations during weekly meeting on material purchase, transportation, and storage, CSC should also actively seek out new materials and new sources. CSC also actively develops new sources for raw materials and recycles scrap steel in order to reduce costs, diversify sources, and avoid material shortages and monopoly by suppliers.

Development of New Material Sources

CSC has adopted a policy of developing new raw material sources since 2010. In addition to being recommended by mining suppliers or introduced by peers, CSC actively seeks new mining areas and suppliers that meet the quality requirements given by CSC, and cooperates with international steel plants with developmental experience to develop new raw material sources.

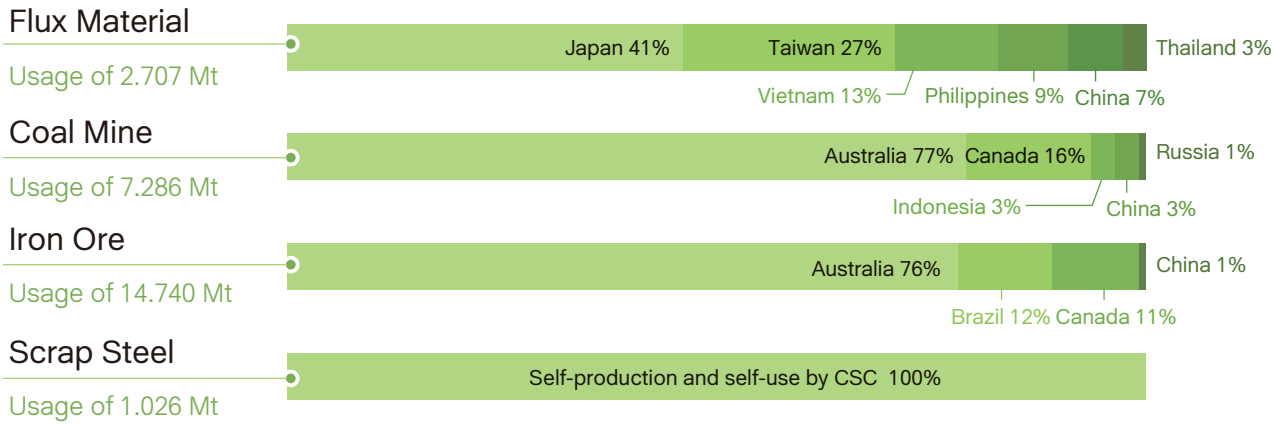
Scrap Steel Recycling

In response to resources recycling, CSC has already added scrap steel into the material-mixed and steelmaking process. The amount of scrap steel used will depend on the quality requirements of the steel products, the blast furnace condition and the annual maintenance conditions. Scrap steel is mainly for self-production and self-use at CSC, and the excess will be resold to subsidiaries to achieve the principle of circular economy.

Implementation Status

CSC is a consistent steel production plant. During the manufacturing process, more than 90% of the raw materials are flux material, coal mine and iron ore, and a small portion of scrap steel. The procurement of raw materials is mainly focused on non-renewable raw materials, including the flux, coal and iron ore. Scrap steel is mainly for self-production and self-use at CSC. A total of 2.96 million tonnes (Mt) of the flux, 8.31 Mt of coal mines and 15.58 Mt of iron ore were purchased in 2019. Among them, about 73% of the flux were imported from abroad and serpentine and limestone from Hualien area accounted for about 27%. Coal and iron also need to be purchased from abroad.

Use of Raw Material and Percentage of Supply by County in 2019



Material Topic

5.2.2 Energy

*Energy-saving measures include buildings and process equipment, etc.

Benefit Highlights in 2019

ISO 50001: 2018

Successfully passed the transition of ISO 50001:2018.

The plant roof solar power generation system has a capacity of 48.6 MW, which is the largest rooftop solar photovoltaic system in Taiwan today.

163 energy saving projects

A total of 163 energy saving projects were completed in 2019, saving a total of 561,000 GJ, reducing 32 kilotonnes of CO_2e emissions, and saving 154 million TWD in energy costs, with an average annual power-saving rate of 1.69% from 2015 to 2019.

Meaning for CSC

CSC has a wide variety of energy sources and most of them are self-produced by-product gas (such as blast furnace gas, coke oven gas, LD-Converter gas) whose output and consumption vary greatly. In order to balance energy use and achieve the most effective usage, CSC continues to improve energy performance by upholding the PDCA spirit so as to reduce environmental impact and enhance corporate competitiveness.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● Energy intensity ≦ 23.18 GJ / tCS.	● Average annual power-saving rate > 1%; ● 2020 Energy Saving Action Plan energy saving target 3.78 million GJ.* *GJ = 1 billion joules	● Promote self-generating electricity; ● Introduce the best available technology, replace old equipment; ● Continuously improve energy efficiency;

Management Approach

CSC mainly implements energy management through the Energy Conservation Committee and control of the energy management system (ISO 50001) to achieve the goals of energy conservation, carbon reduction and continual improvement. The Committee was formed and chaired by VP of Production Division. The Committee has three teams be responsible for energy saving and emission reduction in CSC's plants. The Committee also regularly holds meetings to review the achievement of current targets, share information on energy conservation projects, communicate relevant important topics, bring up appeals or consultations, propose interim motions, and publicize the records of the meeting. The energy policies are approved by the chairman and updated when necessary. The latest version of the Energy

Policy is committed to continuous improvement, compliance with regulations, performance management, energy conservation, carbon reduction, and knowledge advancement.

The third CSC Croup's energy-saving seminar in Dragon Steel Corp.

The International Organization for Standardization officially released ISO 50001 Energy Management System in June, 2011. In order to improve the performance of energy conservation, CSC introduced ISO 50001 in February, 2011 along with consultation from Industrial Technology Research Institute (ITRI), and received the certificate of ISO 50001 from BSI on December 1st of the same year. CSC is the first steel company to implement ISO 50001 in Taiwan. In response to the new ISO 50001: 2018 standard, CSC conducted an external audit in June 2019, and successfully passed the transition.

Continual Improvement
Improve energy performance, support energy-saving designs and green procurement, and commit to sustainable operations

Legal Compliance
Implement legal identification, comply with energy regulations, and fulfill corporate social responsibility

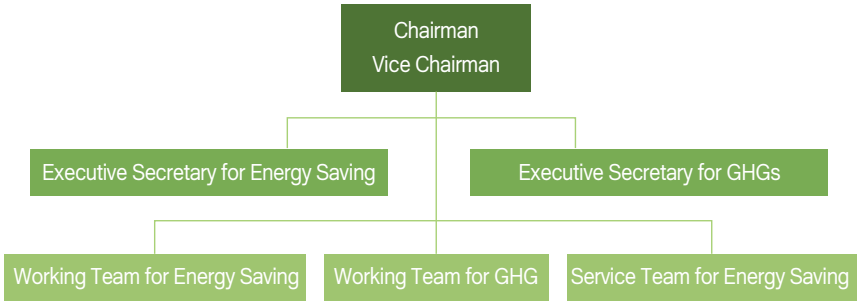
Performance Management
Perform energy reviews, fully provide resources and information to achieve goals / targets, and eliminate potential energy waste

Energy Saving and Carbon Reduction
Improve energy-saving technologies and develop green energy, promote district energy integration, and create a sustainable value of circular economy

Knowledge Advancement
Capture the latest energy technical opportunities, reach communication consensus and achieve widespread application

In order to improve energy efficiency and achieve continuous improvement, CSC sets the energy intensity target (Mcal / tCS) according to the annual production plan every year, as the energy performance indicator. The energy intensity target for 2020 is ≦ 23.18 GJ / tCS (5,537 Mcal / tCS)

The Energy Conservation Committee



Energy Intensity (GJ / tCS)	2016	2017	2018	2019	2020
Target	≦ 23.66	≦ 23.78	≦ 24.37	≦ 22.94	≦ 23.18[II]
Performance	23.57	23.83	24.17	22.54[I]	–
Accomplishment	Y	N	Y	Y	–

Note: I. The energy intensity in 2019 was 22.54 GJ / tCS (5,383 Mcal / tCS), which was 1.64 GJ / tCS (391 Mcal / tCS) less than that in 2018. The main reason is that the Bureau of Energy revised the heat value of electricity to 860 kcal (2,236 kcal in 2018), and also CSC adjusted the heat value for internal energy calculation.

II. The energy intensity target is determined according to the production capacity and equipment maintenance. The energy intensity target in 2020 is higher than 2019. Because there will be a major overhaul of the #2 blast furnace at the end of 2020, which will reduce the production of crude steel. Moreover, during the overhaul of the blast furnace, due to blast furnace start-up and shutdown loss, hot stove warming, and coke production process cannot be stopped resulted in an increase in energy intensity target.

Five-year Energy Saving Action Plan and Targets

In order to achieve energy conservation and carbon reduction and respond to mandatory Greenhouse Gas (GHG) reductions, CSC started the "Five-year Energy Saving Action Plan" in 2005, and has successively promoted three phases. At the same time, CSC adheres to the government's energy saving targets and regulations— "The average annual power-saving rate of energy user shall reach 1% or more from 2015 to 2024." Currently, CSC has achieved a power-saving rate of 1.69% from 2015 to 2019. The next five-year energy saving action plan and target will be set in 2020.

Note: The calculation coefficients are partially quoted from the CO_2 emission factors of the GHG inventory in the previous year, and the rest are calculated based on CSC's energy equipment efficiency coefficient × previous year's electricity emission coefficient from the Bureau of Energy.

Phase	2010 Energy Saving Action Plan	2015 Energy Saving Action Plan	2020 Energy Saving Action Plan[1]
Schedule	2005 - 2010	2011 - 2015	2016 - 2020
Energy-saving Goal (GJ)	8,666,676	9,043,488	3,784,624
Number of Projects	372	658	506
Performances (GJ)	8,930,444	12,623,202	5,190,947
Achieving Rate	103%	139%	137%

Note: Because of the constricted spaces, the Goal of 2020 Energy Saving Action Plan is less than previous years. The number of projects, energy-saving performances and achieving rate are calculated until 2019.

On-plant Energy Saving

Set up Utilities Dispatching Center (UDC)

CSC has wide variety of energy sources and most of them are self-produced by-product gas which varies greatly and intermittently. In order to maintain energy balance and achieve effective use, CSC established the UDC since factory completed and put into production. The UDC centrally monitors all energy sources, such as gas, electricity, steam, O_2, N_2, Ar, H_2, compressed air, etc., and also production plans. Then with the assistant of the integrated-Energy Management System (iEMS), UDC can execute dynamic dispatching in order to keep energy balancing in CSC and to minimize by-product gas emissions. UDC also manages the electricity load in CSC to avoid violating the contract with Taiwan Power Corp. (Taipower), and actively participates in the Taipower Demand Bidding Measures. Furthermore, it compares the power generation cost of different fuels with Taipower tariff to adjust the self-generation amount to minimize the usage of high-priced fuels, such as low-sulfur oil and natural gas.

Best Available Techniques (BAT)

In order to improve energy-saving performance, CSC has intensively contacted with steel-making companies in Japan, South Korea and China in recent years. We had collected BAT for energy-saving from other companies and completed the "Best Available Technical Manual for Energy Saving and Emission Reduction of Steel Plants" in July 2011.

The main technologies that have been applied in CSC are Coke Dry Quenching (CDQ), sinter waste heat recovery, Top Gas Pressure Recovery Turbine (TRT), Blast furnace hot stove waste gas heat recovery, Blast Furnace Pulverized-coal Injection, Converter Off-Gas Boiler, Gas recovery system for top hopper release, Hot Charging, Regenerative Combustion, etc.

For more details [Off-plant Energy Saving] https://www.csc.com.tw/csc_e/hr/csr/env/env2.htm
[District Energy Integration], please refer to Chapter 4.4.2
[Plans for Usage of Renewable Energy], please refer to Chapter 3.4.2

Implementation Results

Energy Consumption

The coking coal in the steelmaking process transforms to by-product gases which can be used as fuel in steelmaking and in cogeneration power plants to generate steam and power. Coal, oil, and nature gas can also be used in power plants while the excess power demand is met by purchased electricity from Taipower.

Unit : GJ

Category[I]	Item	2018	2019
Primary Energy	Coal	229,595,413	227,393,533
	NG	3,874,341	3,263,848
	Diesel Oil	119,667	117,680
	Gasoline	6,652	6,622
	Low-sulfur Oil[II]	109,458	56,154
Secondary Energy	Purchased Electricity[III]	22,214,152	8,224,194
Self-Produced Secondary Energy	Steam	13,305,183	12,529,538
	Coke Oven Gas (COG)	35,259,410	36,255,470
	Blast Furnace Gas (BFG)	46,167,945	45,758,504
	Linz-Donawitz Converter Gas (LDG)	7,338,940	7,593,845
	Cold Blast Air	8,650,029	8,949,682
	Oxygen	3,182,632	1,098,180
	Nitrogen	2,075,914	813,264
	Argon	264,644	102,249

Note: I. The amount of primary energy and secondary energy used is checked by the DNV verification company during the annual GHG inventory checkup. The energy consumption of each energy category was calculated from the annual consumption × annual average heating value of CSC in 2019.
II. The amount of low-sulfur oil in 2018 was more than that in 2019, mainly due to the lack of self-produced gas during the overhaul of #3 blast furnace, regulating in a higher usage of low-sulfur oil in the power plant.
III. The heating value of purchased power, oxygen, nitrogen, and argon in 2019 is calculated based on the Bureau of Energy's revised power heating value, which caused the discrepancy between 2018 and 2019.

Performance of Energy Saving and Carbon Reduction

In 2019, CSC completed a total of 163 energy-saving projects, saving a total of 561,000 GJ, reducing 32,000 tonnes of CO_2e emissions, and saving 154 million TWD in energy costs. The main projects include "transforming the #1 heating furnace of the Plate Mill to reduce fuel consumption", "increasing the steel tapping temperature by 6° C", and "energy saving improvement of #1 Hot-strip Mill cooling water system."

Category	2019	
	Items	Energy Saved (GJ)
Electricity	117	275,532
Fuel Gas	12	173,374
Industrial Gas	1	50
Steam	4	5,490
Water Systems	18	4,673
Others	11	101,988
Total	163	561,107

Note: The energy-saving results of each project are reviewed by the Bureau of Energy at the time of annual energy review.

Material Topic 5.2.3 GHG Management and Climate Action

Benefit Highlights in 2019

CSC has taken part in CDP climate change project and achieved management (B) level, more superior than industry average (C), Asia average (C), and global average (C).

Taiwan Corporate Sustainability Awards 2019 "Climate Leadership Award"

1.848 million tonnes

From 2005 to 2019, 1,123 reduction cases were implemented in cooperation with the IDB and the cumulative reduction accumulated to 1.848 million tonnes of CO_2e / year. This makes CSC the outstanding manufacturer of voluntary GHG reduction in 2019.

Meaning for CSC

The steel industry creates a large amount of greenhouse gas (GHG) emissions. At a time when climate change and carbon reduction issues have become the focus of public attention, it is expected that CSC's climate change related plans and actions will attract the attention of both domestic and international stakeholders. Therefore CSC is accelerating the establishment of a response mechanism to assess risks and identify opportunities in order to mitigate impacts.

Management Approach

CSC has completed the assessment of regulatory, physical and reputational risks that may arise from climate change and corresponding opportunities, and has planned response strategies in three areas according to assessment results, including water resources management and development, disaster response and adaptation, and enhancing cooperation with cities and value chains.

In the future, CSC may face major impacts including energy, environmental, health and safety issues and its external constraints which might affect competitiveness. Low-carbon energy, low-carbon electricity, and carbon footprint will gradually become the important factors that affect operations of the steel industry and its impact on competitiveness will become more obvious by degrees. In response to impacts mentioned above, CSC not only developed its response strategy, but also strengthened strategic cooperation with domestic and foreign partners, the green energy industry, suppliers, and academic and research communities to reduce the impact on the CSC Group and create more favorable operating conditions.

Learn more [Risks and Opportunities of Climate Change]
https://www.csc.com.tw/csc_e/hr/csr/env/env3.htm

Carbon Reduction Target, Strategies, and Roadmap

Since 2016, CSC has adopted carbon reduction targets based on carbon reduction measures and promotional strategies. The Greenhouse Gas Reduction and Management Act that promulgated on July 1st, 2015 states national GHG reduction targets and "5-year periodic regulatory goal." Taiwan's INDC 2030 objects is also the same. CSC sets up a 330,000 tCO_2e reduction target by 2020 according to the 5-year periodic regulatory goal as mentioned. The major strategies include promoting "2020 Energy Saving Action Plans," increasing the application of low-carbon energy and continuously investing in R&D of cutting-edge technologies.

CSC Implements TCFD - the Taskforce on Climate-related Financial Disclosures

With the global discussion on issues of climate change, the risks and opportunities of climate change on business operations have gradually attracted investors' attention. In addition to its commitment to energy saving and carbon reduction in the manufacturing process, CSC has also invested in the development of high-grade steel products to reduce the overall carbon emissions of the product life cycle and assist the society in mitigating and adapting to the impact of climate change. At the same time, CSC continues to participate in the disclosure and evaluation of

sustainability-related information at home and abroad, such as the Carbon Disclosure Project (CDP), Dow Jones Sustainability Index (DJSI), etc., to ensure that CSC responds to climate change-related risks and opportunities, and that the response and governance is synchronized with the world's leading companies.

In recent years, international investors have also been concerned about the financial disclosure status of enterprises regarding the risks and opportunities of climate change. CSC is planning to implement the Taskforce on Climate-related Financial Disclosures (TCFD) and will support TCFD by signing a contract and become the official supporter of TCFD. Based on the recommendations of TCFD, risks and opportunities related to climate change will be fully disclosed so that investors can fully understand CSC's efforts in dealing with climate change.

GHG Inventory

According to the GHG management process, the inventory operation is the most basic procedure of GHG management. The Greenhouse Gas Reduction and Management Act was promulgated by Taiwan government on 1 July 2015. CSC performed the first GHG inventory operation in accordance with international standards (ISO 14064) in 2006. In order to ensure that the GHG inventory data complies with the principles of Measureable, Reportable and Verifiable (MRV), we subject to internal audits and third-party verification every year. CSC then acquires a verification statement and reports to the national GHG Registry. CSC has complianced with regulations since the Act was into effect.

Although other indirect GHG emission (Scope 3) is not a mandatory subject, we can still grasp the GHG emission status of the overall supply chain and find potential reduction opportunities according to the results of the inventory. The relevant organizations such as the Carbon Disclosure Project (CDP) encourage industries to take the initiative and carry out the inventory of scope 3 emissions. The Environment Protection Dept. has estimated scope 3 emissions since 2015 and selected sources under scope 3 emissions for third-party verification since 2016. With the verification statement, CSC's GHG management is extended to the supply chain so as to strengthen and expand the level of management. In the future, it will continue to conduct GHG scope 3 inventory and evaluate the quality of collected data.

For more details [Green Product], please refer to Chapter 3.4.1
[The Scope 3 Emission] https://www.csc.com.tw/csc_e/hr/csr/env/env3.htm

Carbon Credits Management

CSC has formulated the “Carbon Right Trading and Management Regulations” with reference to the relevant regulations of the EPA and international practices, and incorporated related operations into the environmental management system (ISO 14001). The Environment Protection Dept. applies for ERCs to the competent authorities. By the end of 2019, CSC's GHG early action project had earned ERCs, with the current remaining 4.58 million tonnes of CO_2e. The GHG offset project for transportation mode change at quarry in Hualien acquired ERCs of 2,273 tCO_2e from the EPA. The GHG Offset project for the “Hot charge rolling energy-saving” was also reviewed and approved by EPA.

In the future, CSC will cooperate with EPA, IDB (Industrial Development Bureau, MOEA) and related institutions to discuss GHG reduction strategies and earn more carbon credits through relevant mechanisms in order to reduce the operational impact of national Cap in the future.

Action on Reduction

The IDB provides guidance for industry operators who implements voluntary GHG emission reductions, and executes the "Industrial GHG Management and Adaptation Plan" annually. The Environmental Protection Administration Dept. consolidates the GHG reduction projects implemented in the previous year and verification by second-party from IDB; the verification results are registered and recorded on the Bureau's voluntary reduction platform. The records can be used as evidence that shows CSC's efforts before the national GHG Cap system enters been implement in order to ease down the pressure from GHG reduction. Since 2005, CSC has been cooperating with IDB and as of 2019, a total of 1,123 reduction cases were implemented and the cumulative reduction reached 1.848 million tCO_2e / year. Due to our outstanding performance in reducing emissions, CSC has been awarded by IDB over the years and was honored as one of the best performers in 2019. Furthermore, CSC also participated in the 2019 KSEPB cross-departmental GHG reduction operations, including 7 cases of subsidies which promotes the reduction of external carbon emission and encourages the public involvement.

Information Disclosure

CSC has conducted GHG emissions inventory yearly and proactively disclosed relevant information for stakeholders. In addition to registering annual GHG report to the national GHG Registry of EPA in compliance with related regulations, CSC also continues to take part in the World Steel Association's climate action and related task forces (such as CO_2 data collection). CSC actively submits information on GHG emissions, and participates in the association's seminars on "best carbon reduction practices" and "carbon reduction technologies" to understand the carbon reduction progress of industrial peers and be in line with international standards. By filling out the questionnaire from CDP (Carbon Disclosure Project) – the Climate Change Program, we evaluated ourselves by comparing with peers and other industries to make sure that our management strategy is aligned with global and local trends. Meanwhile, we could clarify the strengths and weaknesses of CSC, improve the weaknesses, and attract more investment through better evaluation results. CSC achieved management (B) level, better than industry average (C), Asia average (C), and global average (C) in 2019, demonstrating CSC's world-leading position in GHG management.

Implementation Results

» Emissions[I]

Unit: tCO_2e	2018	2019
Scope 1	20,805,771	20,351,815
Scope 2	1,294,689[II]	1,181,783
Scope 3[III]	14,021,934	11,434,160

Note: I. The boundary of CSC GHG emissions refers to the Operation Control Approach and calculates with the Emission Factors Methodology. After completing the brand new CSC China Steel Building in 2013, we adjusted our GHG inventory boundary in accordance with ISO 14064-1 and redefined our base year to 2014. The GHG emissions of 2014 is 20,629,824 tCO_2e, based on the GWP value from the IPCC's Fourth Assessment Report.

II. The data changes comparing to 2018 due to coefficient renew.

III. The 15 categories of scope 3 GHG emissions calculation follow the GHG Protocol Guidance. CSC's "Fuel-and-energy-related activities," "Waste generated in operations," and "Business Travel" had been verified by third-party.

Material Topic

5.2.4 Air Pollutants

Benefit Highlights in 2019

Completed 2 air pollution improvement projects in 2019, which will reduce 14.7 tonnes of Par., 3.1 tonnes of SOx and 4.2 tonnes of NOx in total each year.

In conjunction with the government's fall and winter emission reduction policies in 2019, a total of 132.74 tonnes of Par., 522.48 tonnes of SOx, 378.03 tonnes of NOx and 15.36 tonnes of VOCs were reduced.

Achieved emission intensity targets (kg / tCS)

Sulfur Oxides (SOx)	Nitrogen Oxides (NOx)	Particulates (Par.)	Goals
Target 0.690	Target 0.770	Target 0.400	Achieved
Actual 0.657	Actual 0.681	Actual 0.244	

Meaning for CSC

CSC is located in the third-level air pollution control regions determined by the EPA. In addition to the government's efforts in managing air pollution, the public also has expectations for CSC's specific air pollution improvement plan. While complying with the regulations and the environmental assessment commitments, CSC has also continuously collected the best available control technologies used by the world's most advanced steel plants, evaluated various air pollution reduction projects, and helped to improve air quality.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)
● SOx emission intensity ≦ 0.740 (kg / tCS), NOx emission intensity ≦ 0.760 (kg / tCS), Par. Emission intensity ≦ 0.400 (kg / tCS).	● A total of 6 reduction plans have been completed, which can reduce 134.9 tonnes of Par., 806.7 tonnes of SOx, and 15.7 tonnes of NOx each year.

Management Approach

In accordance with the ISO 14001 environmental management system, CSC aims to promote air pollution reduction, introduce the most advanced and feasible control technology, carry out continuous annual review, promote reduction programs, and reduce air pollution emissions and air pollution fees in order to achieve lower pollution, green energy and sustainability.

In terms of air pollution regulations management, the job is to ensure the normal operation of environmental monitoring equipment (CEMS, CCTV, AAQMS, FTIR), complete the testing and reporting of particulates (Par.), sulfur oxides (SOx), nitrogen oxides (NOx), volatile organic compounds (VOCs), dioxins (DXNs), etc., and apply for the permit of the establishment, changes, operation, and extension of pollution source in accordance with the law. Continue to strengthen in-plant inspections and review of pollution prevention efforts, and coordinate with the Executive Yuan's “Air Pollution Prevention Action Plan” and the EPA's Air Pollution Control Act to plan improvement measures.

Air Pollution Management

- Strengthen the air pollution control regulations, meet the requirements of various laws and regulations, and reduce the occurrence of air pollution anomalies.
- Cooperate with the government's air quality improvement policy, plan the response measures for air quality during fall and winter as well as the medium and long-term air pollution improvement plan.

Air Pollution Improvement Plan

In order to further improve pollution, CSC puts forward an air pollution improvement plan for 2019-2021, with a continuous investment of 9.733 billion TWD. CSC cooperates with the "Air Pollution Control Action Plan" promoted by the Executive Yuan, and participates in the quarterly state business air pollution control meeting.

In 2019, 2 air pollution improvement projects were completed, including the renovation of the #1 reheating furnace revamping for plate mill and the enclosed sinter storage building, which reduces a total of 14.7 tonnes / year of Par., 3.1 tonnes / year of SOx and 4.2 tonnes / year of NOx.

Year of Completion	Improvement Project	Projected Reduction Results (Unit: tonnes / year)		
		Par.	SOx	NOx
2019	#1 reheating furnace revamping for plate mill	–	3.1	4.2
	Enclosed sinter storage building	14.7	–	–
2020	#2 slab reheating furnace revamping for No.1 hot strip mill	–	3.6	11.5
	#2 dedusting system revamping for BOF plant I	100	–	–

Year of Completion	Improvement Project	Projected Reduction Results (Unit: tonnes / year)		
		Par.	SOx	NOx
2021	Flue-gas desulfurisation equipment to #1 sinter plant	5.3	800	–
	First stage of enclosed sinter storage building	14.9	–	–
Total		134.9	806.7	15.7

Actively Cooperate with Emission Reduction Policies

CSC not only obeys the regulatory emission standard for all processes, but also sets emission target (emission intensity) based on air pollution control plans for next year and includes it in the environmental management system for tracking and inspection. CSC has complied with the policy of Kaohsiung City Government for emission reduction in fall and winter, arranged the production reduction to reduce emission, and reduced Par. emission by 132.74 tonnes, SOx emission by 522.48 tonnes, NOx emission by 378.03 tonnes, and VOCs by 15.36 tonnes from September 2019 to March 2020.

Countermeasures for Various Regulated Items

Items	Countermeasures
SOx	CSC has finished a number of air pollution improvement projects, such as FGD of #6~8 boiler and #2~4 sinter, #1 reheating furnace revamping for plate mill, and using low-sulfur content raw materials to reduce SOx emission dramatically.
NOx	CSC has finished a number of air pollution improvement projects, such as De-NOx equipment of #6~8 boiler and #1~4 sinter, and low-NOx burners to reduce NOx emission dramatically.
Par.	CSC has set up air pollution control equipment, such as bag filters and electrostatic precipitators, and budgeting annually to maintain the efficiency of control equipment. In order to reduce fugitive particulates emissions of raw material yards, a 20-meter high dust screen and automatic sprinkler equipment have been installed around the raw material yards and a chemical stabilizer spray is used. CSC has completed the automatic enclosed building of sinter in 2019, and particulates emission can be reduced by 14.7 tonnes per year.
Dioxin	Activated carbon injection equipment was added to the rotary hearth furnace and by-product treatment plants, while dual function De-NOx and De-DXNS selective catalyst was added to the sinter plants to reduce Dioxin emissions.
$PM_{2.5}$	Bag filters, electrostatic precipitators, wet scrubbers, and dust screens, and water and chemical stabilizers spraying equipment were installed to reduce $PM_{2.5}$ emissions. De-SOx, De-NOx equipment are planned for sinter and power plants, and low-VOCS coatings be used in rolling mill department III to reduce $PM_{2.5}$ precursor (SOx, NOx, VOCs) emissions.
Ozone Depleting Substances	To control ozone depleting substances, CSC integrates air conditioning, improves equipment maintenance, develops high efficiency models, uses eco-friendly coolants, and reuses recycled coolants.

Environmental Monitoring and Testing

CSC Environmental Monitoring Center oversees 6 air quality monitoring stations and has 2 digital boards that display real-time air quality data for citizens. For stationary emission sources, 29 continuous emission monitoring systems (CEMS) serve to monitor traditional pollutants emission intensity and quantity, and 25 of them are connected to KSEPB for government supervision. The current average monthly effective monitoring rate of each instrument can reach more than 90%, which is superior to the current regulatory standards by 85%.

If an abnormality is found, you can directly reach CSC by phone (business hours: +886-7-8021111 # 5592; outside business hours or during holiday: +886-7-8021111 # 3702.

Implementation Results

Through various air pollution improvement measures, CSC uses continuous automatic monitoring systems (CEMS) to report air pollution emissions every quarter in accordance with the relevant provisions of the Air Pollution Control Act.

Emissions	2017	2018	2019	EIA Commitment Limit
SOx (tonnes / year)	6,542	6,058	6,233	34.9 tonnes / day
NOx (tonnes / year)	7,191	6,797	6,464	34.6 tonnes / day
Par. (tonnes / year)	2,820	2,727	2,315	19.5 tonnes / day

Emissions		2017	2018	2019	EIA Commitment Limit
VOCs (tonnes / year)		487	499	518	–
Dioxin (g-TEQ / year)		4.47	3.05	4.20	–
Ozone Depletion Potential Values*	Total (kg, CFC-11 equivalent)	25.30	27.28	22.22	–
	Intensity (mg / tCS)	2.75	2.89	2.34	–

Note: Since R-22 has been included in the GHG control in the IPCC 3rd Ed. Assessment Report (TAR), in CSC only refrigerant R-124 is required to be managed by the Montreal Protocol from 2015. The Ozone Depleting Potential (ODP) values of R-124 was from the Annex of Montreal Protocol.

Feature II

Air Pollutants Improvement

CSC actively cooperated with the EPA to reduce air pollution. In 2018, the "Air Pollution Control Action Plan" was promoted, which included 5 air pollution improvement projects regarding the topics of public concern, "Enclosed raw material storage construction" and " The coke water quenching (C.W.Q.) changes to coke dry quenching (C.D.Q.) of coke ovens (phase I and II)," the explanations are as below.

Topic 1 Enclosed Raw Material Storage Construction

Steel plants in advanced countries such as those in Europe, the United States, Japan, and South Korea did not generally have closed indoor storage yards. In response to the government's air pollution improvement policies and fulfilling corporate social responsibility, CSC proposed in 2018 that the raw material storage yards should be enclosed. Construction projects include automatic enclosed construction projects for sinter and enclosed constructions for coal mines. The construction of sinter automatic enclosed building project started in July 2018 and completed on December 20th, 2019. It can reduce 14.7 tonnes of particulates per year. The overall scale of the enclosed coal storage construction is equivalent to 3 large dome baseball fields. In order to overcome the site constraints and stabilize the supply of the steel industry chain, CSC will carry out the enclosed coal storage construction project in different phases. On May 6th, 2019, the Board of Directors approved an investment of 7.0178 billion TWD for the first phase of the project. From July 1st, 2019 to December 31st, 2021, it is estimated that the prevention of particulates emissions will reach 98% efficiency after the construction is completed.

Topic 2 The Coke Water Quenching (C.W.Q.) changes to Coke Dry Quenching (C.D.Q.) of Coke Ovens (Phase I and II)

At present, the coke furnaces of international steel plants are still mainly wet quenching. Since CSC is committed to reducing air pollution emissions, "The Coke Water Quenching (C.W.Q.) changes to Coke Dry Quenching (C.D.Q.) of Coke Ovens (Phase I and II)" was planned in 2018. Limited by the lack of space in the plant, the existing equipment and system were reconfigured in 2019. New coke ovens and dry quenching equipment will be built in another area before the production switch-over between new and old coke ovens. However, before the new coke oven project was completed, in order to reduce the emissions of particulates, CSC has referred to the advanced steel plants in Japan and added the Teller Rosette ring as the particulate capturing equipment to the coke oven wet quenching. A water spray device was installed on the top of the wet quenching tower, and the particulate emissions improved by 85%; the emission concentration was close to the discharge level of a dry quenching equipment (7g / tonne-coal).

Material Topic

5.2.5 Water

Benefit Highlights in 2019

B Participated in the CDP water project and obtained the management level (B)	98.4% Processing water recycling rate reaches 98.4%
37.5% Compared to the introduction of reclaimed water, the intensity of new water is reduced by 37.5%	9,075 million liters The introduction of urban sewage reclaimed water is the 1st demonstration project in Taiwan and recovered 9,075 million liters of reclaimed water in 2019.

Meaning for CSC

The blast furnace process of the integrated steel plant cannot be stopped once the ignition is started, because it contains high-temperature molten iron that cannot be cooled without water. Without a stable water source, CSC will be exposed to the risk of permanent damage to the blast furnace, which will affect production and the economic output value of the entire steel industry. Besides stable production and related economic output value, the management of water resources can also create the corporate social image that shows gratitude for water resources and demonstrate the best balance of economic development and environmental sustainability to the surrounding residents.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● Reduce the amount of new water consumption by 35%.* *Based on 2017, when reclaimed water had not been introduced	● Planning for the introduction of reclaimed water, reducing the new water consumption by 51%	● Diversify water sources and continue to implement water-saving measures; ● Reducing the new water consumption by 65%.

Management Approach

CSC is located in Kaohsiung. According to the predictions made by World Resources Institute in " Aqueduct Water Risk Atlas," Kaohsiung is expected to be middle to high risk (2-3) in 2030. CSC currently relies on a single tap water source. If there is a cut or restriction in water supply, it can cause severe impacts and losses on production and equipment. Therefore, CSC began to pay attention to water resources issues many years ago. It commissioned the Tainan Hydraulics Laboratory at National Cheng Kung University to conduct research on "CSC Water Planning and Strategy" in 2011. In 2012, CSC determined its water strategy to be diversifying water sources, and continued to develop a new water source in order to alleviate the risk of cutting off / limiting water supply.

CSC's water usage is mainly from industrial water and recycled water, and there is no conflict with the domestic water supply. The industrial water comes from Fengshan Reservoir, which accounts for about 30% of the reservoir's water supply

and might have potential impact on local water use. In order to alleviate the above-mentioned impact, CSC has decided to work towards diversified water resources. Because CSC is located in areas of reclaimed water planned by the Water Resources Dept., it actively cooperates with the government to develop the policy to reuse polluted and reclaimed water. The Construction and Planning Agency Ministry of the Interior (CPA), the Water Resources Agency of MOEA (WRA), and the Industrial Development Bureau of MOEA (IDB) made a concerted effort to promote the nation's first public sewage treatment plant to release water for recycling— the Fengshan Creek Reclaimed Water Plant. Recycled water is used as processed water through the join effort by CSC and C.S. Aluminum Corp. in Linhai Industrial Park together.

Through water-saving measures and the development of reclaimed water applications, it is possible to improve the stability of CSC's water use. By gradually moving towards the goal of having multiple water sources in order to reduce the risk of production reduction or equipment damage caused by cutting off / limitations water supply. Taiwan Water Corporation can thus allocate part of the Donggang Creek water source to domestic water use. CSC has taken the lead in cooperating with the national development of emerging water resources policies and become the first company in Taiwan to have started using a large amount of polluted and reclaimed water. Looking ahead, we will continue our efforts to stabilize the water source used for productions, practice circular economy, fulfill social corporate responsibilities and create a harmonious community.

As water is critical to the steel manufacturing process, CSC's water resources management policy is committed to effective management and diversified development. Through a number of water conservation cases and the introduction of reclaimed water, the consumption of new water, operating risks, and environmental / social impacts can be reduced. CSC's water stewardship indicators mainly refer to the previous year's water consumption performance, and set the target value of water consumption per unit of steel billets based on the estimated crude steel (CS) output for the current year by the Production Planning Dept.

Unit: tonnes water / tCS		2018	2019	2020
Water Intensity[II]	Target Value	4.90	4.90	4.80
	Actual Value	4.34[III]	4.53	–
New Water Intensity	Target Value	4.50[IV]	4.00	3.60
	Actual Value	3.98	3.57	–

Note: I. For better quality of our report, there were several data changes comparing to 2018 due to the calculation or coverage scale revised.
II. Calculation of water intensity = (new water + reclaimed water-sold steam) ÷ annual output of crude steel. Calculation of new water intensity = (new water-sold steam) ÷ annual output of crude steel.
III. Since 2018, the production of demineralized water, the introduction of reclaimed water and the improvement of water use efficiency have been achieved in the wastewater purification plant, and the water intensity has decreased significantly.
IV. In August 2018, the 1st stage of Fengshan Creek reclaimed water was introduced, and in August 2019, the 2nd stage of Fengshan Creek reclaimed water was introduced. The target of new water consumption per unit of steel billets is set and the actual value is being calculated.

Multiple Water Sources through Recycling of Reclaimed Water

CSC has continuously expanded its relevant production lines since 2003. Over the years, it has been encouraging water management and reuse of reclaimed water. In addition to adhering to the governmental policy of "Use sewage reclaimed water to replace industrial water, " CSC signed a purchase agreement with IDB. The water contract was officially signed and on August 23, 2018, reclaimed water from Fengshan Creek was trial introduced, and the full water supply officially began on August 23, 2019. The daily water supply has increased to 41 million liters, accounting for about 33% of CSC's daily water consumption.

» Fengshan Creek Reclaimed Water Recycling Demonstration Project

CPA, WRA and IDB have worked hard to facilitate the supply of 23 million liters of reclaimed water daily since August 2018. CSC is able to introduce approximately 22 million liters of reclaimed water daily, and about 41 million liters of reclaimed water have been introduced daily since September 2019, which significantly lowers the stress from water scarcity.

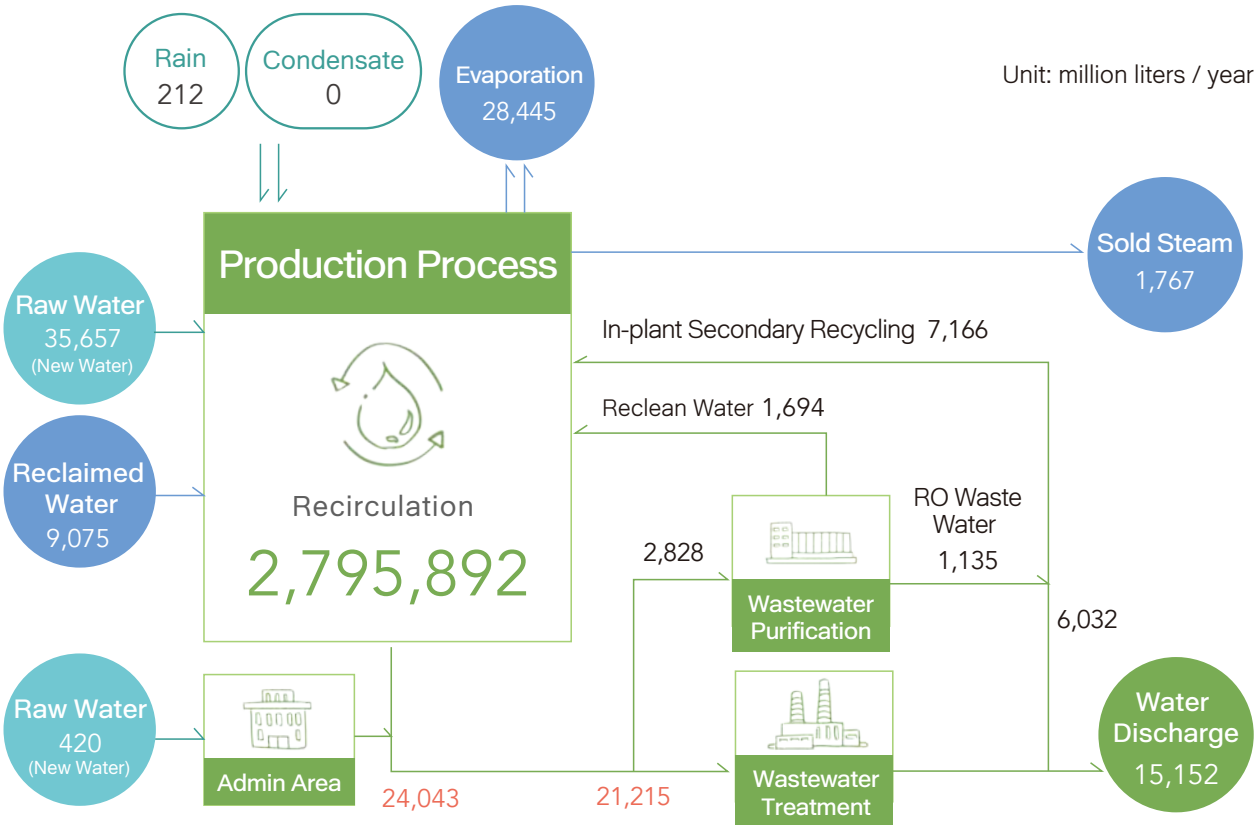
Linhai Sewage Treatment Reclaimed Water Demonstration Project

The Kaohsiung City Government has actively promoted the drainage water regeneration plan of various sewage treatment plants in the region. Following the operation of water supply at Fengshan Creek Reclaimed Water Plant, the Linhai Sewage Treatment Reclaimed Water Project has been planned and CSC will introduce reclaimed water for the daily reuse of 20 million liters from the ocean, and this water supply is expected to fully operate in 2022.

The main source of reclaimed water is collected from Kaohsiung City's domestic sewage, which is deaminated with nitrogen, and treated with UF and RO. After statistics from the entire year of 2019, CSC has imported 9,075 million liters of Fengshan Creek reclaimed water (reclaimed water that should be attributed to a third party). Coupled with water recycling from the production process, new water consumption has been significantly reduced by about 10% compared to last year. In 2019, the average daily new water consumption of CSC has decreased by about 99.2 million liters, and the new water consumption per unit of steel billets is 3.57 tonnes / tCS, which has also dropped significantly compared to last year.

For more details [Water Conservation Projects] https://www.csc.com.tw/csc_e/hr/csr/env/env10.htm

Water Balance 2019



Note: The reclaimed water and tap water mentioned above are both fresh water.

Year[I] (Unit: Million liters)	2018	2019
Production Process Water Recirculation[II]	2,800,744	2,795,892
Processing Water Recycling Rate (%)	98.5%	98.4%
New Water Withdrawal	39,894	36,077
Reclaimed Water Withdrawal	3,422	9,075

Year[I] (Unit: Million liters)	2018	2019
Water Discharge	14,791	15,152
Water Consumption[III]	28,525	30,000

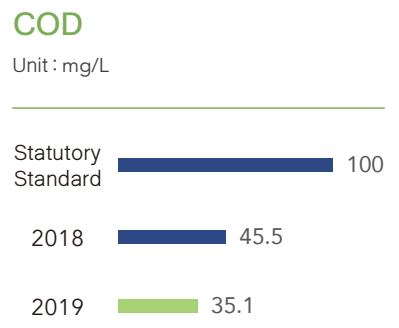
Note: I. For better quality of our report, there were several data changes comparing to 2018 due to the calculation or coverage scale revised.
II. Processing water recycling rate = production process water recirculation ÷ total water use in process
III. CSC's total water withdrawal includes new water and reclaimed water. Water consumption = total water withdrawal - total water discharge
IV. CSC has 4 original water pools with a total water storage capacity of 177 million liters, which has been maintained at a high water level throughout the year. The Fengshan Creek Reclaimed Water was implemented in 2018, and the supply of reclaimed water reached 41 million liters per day. During the Taiwan Water Corporation's water outage, the flexibility of the water supply in the plant can be improved to reduce the risk of water limitation / stoppage.

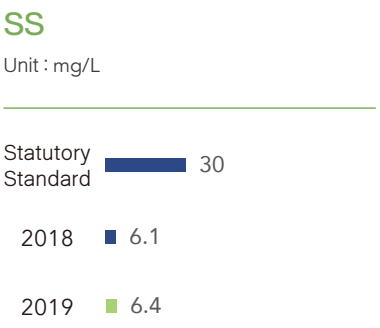
Water Pollution Control

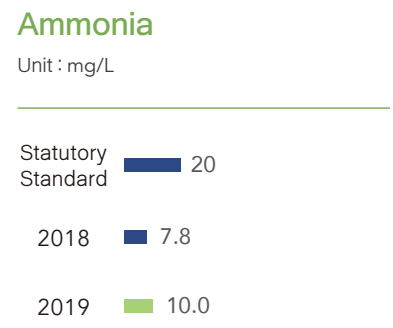
CSC's main tasks of water pollution control are managing existing equipment and building backup facilities to improve water quality, and improving rainwater drainage performance by monitoring and managing.

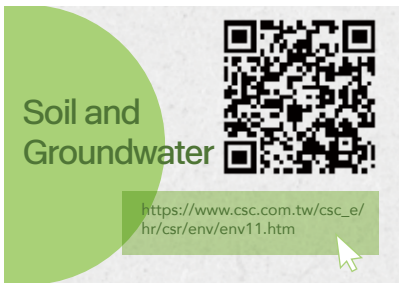
The CSC wastewater processing facility has the capacity to process 79.6 million liters / day of wastewater to effluent standards and discharge it into the ocean through Yanshuigang River. In addition, a wastewater collecting pool which can carry 40 million liters wastewater runoff (36 million liters / day) processes wastewater runoff from heavy rain to the effluent standards and discharges it into the ocean through the Yanshuigang River, effectively reducing the pollution brought by wastewater runoff.

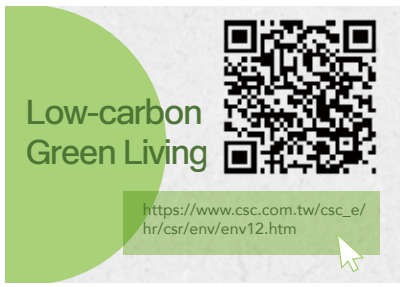
In 2019, the total discharge was 15,152 million liters, the Chemical Oxygen Demand (COD) and Suspended Solids (SS) were 35.1 mg / L and 6.4 mg / L, which are more superior than statutory effluent standards. EPA announced "Industrial Effluent Standard Draft" in June 2013, which includes the coking industry in industries with high ammonia nitrogen. In response to the new requirements of this regulation, the plan is to start from two aspects: upstream process reduction and downstream wastewater treatment. CSC filed a reduction plan with upstream process reduction (NH_3-N from 800-1,000 mg / L to <300 mg / L) and downstream wastewater treatment (NH_3-N from 300mg / L to <20 mg / L). The reconstruction of the COD removal basin and two nitrification basins were completed in 2015 and 2016, and the reconstruction of the denitrification basin was completed in February 2017. The improvement project completed the functional test in September 2017 and the ammonia concentration in the discharge water was 9.1 mg / L. In 2019, the concentration of ammonia nitrogen in the discharge water is 10.0mg / L, which is all far superior to the regulatory standard (ammonia nitrogen <20 mg / L).

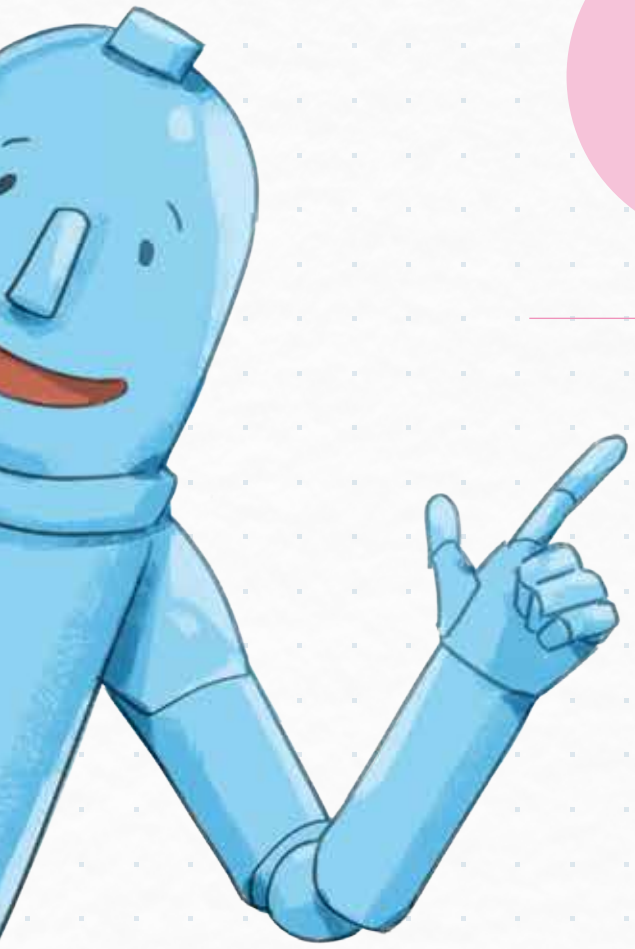












6 Employees Care

Material Topic 6.1 Recruitment and Retention

Benefit Highlights in 2019

There were 389 new employees in 2019, mainly in the 18 to 29-year-old age group coming from the southern region of Taiwan, which increased local youth employment opportunities.

The rate of employees that return to work after taking a parental leave was 100%, higher than the 91.7% stated by the Ministry of Labor.

291 students has been hired from the cooperative educational programs with 5 schools, including NCKU, Kaohsiung Municipal Chung Cheng Industrial Vocational High School, etc.

Meaning for CSC

Human resources are the foundation of business operations. CSC creates a happy workplace, ensures a safe working environment, and protects employee rights with a sound system to attract and retain talents. The employees are allowed to give full scope to their talents in the right positions to keep the competitiveness of the company.

Goals

Short-term Goals (1~2 Years)	Mid-term Goals (3~5 Years)	Long-term Goals (5 Years and More)
● Full usage; ● 1,200 trainees for the professionals.	● The right person in the right place.	● Further research and diversified development.

Management Approach

CSC strictly follows the Labor Standards Act and never hires underage employees. To ensure the basic human rights of employment equality, employees are hired only based on expertise and experience. Discrimination based on ethnic origin, thought, religion, political affiliation, place of origin, place of birth, gender, sexual orientation, marital status, appearance, disability, or past labor union membership is prohibited. In 2019, no incident involving human rights abuse or discrimination was reported.

The management approach to talent recruitment and retention is mainly for the purpose of meeting the approved manpower requirements on time, on budget, and on spec. The operating strategy is reviewed on a quarterly basis. At present, in addition to public recruitment, there are also several channels for professionals such as expert recruitment (PhDs or legal counsels), recruitment from foreign trade associations (business students), recruitment from funded master's programs of industry-academia collaboration (engineering students). Same as professionals, entry-level employees are not only sought from public recruitment, but also from the special recruitment scheme for indigenous people, as well as the industry-academia programs of Kaohsiung Municipal Chung Cheng Industrial Vocational High School, Kaohsiung Industrial High School.

By the end of 2019, the CSC workforce consisted of 18,763 people, of whom 10,230 were regular employees (9,889 males and 341 females), 8,533 were contractors (7,054 males and 1,479 females; mainly maintenance and operations contractors), and 40 were dispatched workers (2 males and 38 females, mainly for paperwork and general affairs). The contractors account for a large proportion of the CSC workforce mainly because CSC's industrial structure has many short-term outsourcing projects.

The average age of employees was 45.13 and the average tenure was 18.17 years. All of the regular employees are from Taiwan, no foreign employees were hired. Since CSC is an integrated steel plant, there are more male employees than female employees, resulting in the unbalanced sex ratio.

For [Contractor Management], please refer to Chapter 4.1.4 or visit https://www.csc.com.tw/csc_e/hr/csr/par/par5.htm#par-Coop

Item	Category	2017		2018		2019	
		No.	Ratio (%)	No.	Ratio (%)	No.	Ratio (%)
Total		10,222	100%	10,424	100%	10,230	100%
Gender	Male	9,911	96.95%	10,091	96.81%	9,889	96.67%
	Female	311	3.05%	333	3.19%	341	3.33%
Workplace	Kaohsiung	10,061	98.42%	10,267	98.49%	10,082	98.55%
	Taipei	4	0.04%	3	0.03%	2	0.02%
	New Taipei	46	0.45%	54	0.52%	54	0.53%
	Hualien	15	0.15%	16	0.15%	19	0.19%
	Overseas	96	0.94%	84	0.81%	73	0.71%
Age	18-29	1,025	10.03%	1,289	12.37%	1,356	12.36%
	30-39	2,907	28.44%	3,145	30.17%	3,060	30.17%
	40-49	1,402	13.71%	1,614	15.48%	1,885	15.49%
	50-59	2,212	21.64%	1,960	18.80%	1,787	18.80%
	>60	2,676	26.18%	2,416	23.18%	2,142	23.18%
Education	Doctorate	184	1.79%	184	1.77%	185	1.80%
	Master	1,859	17.89%	1,940	18.60%	1,959	19.15%
	Bachelor	3,428	33.13%	3,836	36.80%	3,962	38.73%
	Junior college	1,105	11.21%	1,067	10.24%	991	9.69%
	Senior high / Vocational	3,422	33.53%	3,245	31.13%	3,027	29.59%
	Junior high	168	1.75%	127	1.22%	96	0.94%
	Primary	56	0.70%	25	0.24%	10	0.10%

6.1.1 Workforce

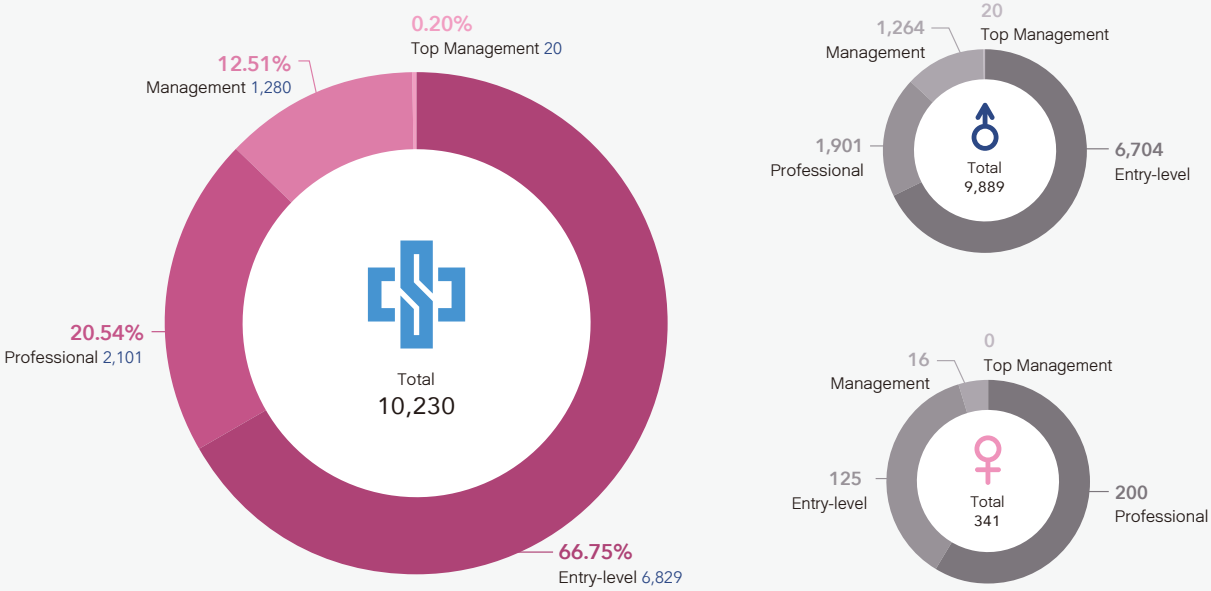
In 2019, CSC held a recruitment process, and made public the categories of job vacancies, the number of expected hires in each category, exam subjects, and job descriptions. Applicants were asked to take the written test on common and professional subjects. Based on the test results, at least twice the number of vacancies was selected for interviews. The final decisions were made based on the written test and interview results. In 2019, there were 759 qualified new hires (professional-level: 115; entry-level: 644). The total number of new employees in 2019 was 389, mainly in the 18 to 29-year-old age group from the southern region of Taiwan, which helped increase local youth employment opportunities. From 2011 on, an average of 546 people have been employed each year, and the number of new hires is expected to stay the same until 2021. The new hire turnover rate was 0.49% in 2019.

New Hires Distribution in 2019

Item		No.	Ratio (%)
Total		389	3.80%
Gender	Male	365	3.57%
	Female	24	0.23%
Region	Northern	12	0.12%
	Central	27	0.26%
	Southern	344	3.36%
	Eastern	4	0.04%
	Others	2	0.02%
Age	18-29	276	2.70%
	30-39	106	1.03%
	>40	7	0.07%

Note: the ratio (%) = number of new hires ÷ total regular employees x100%

Employee Position Distribution



6.1.2 Turnover

The personnel change, resignation, and retirement of employees are handled according to relevant CSC regulations. Regular employees can apply for retirement at the age 65 or for voluntary retirement at an earlier age with reference to the Labor Standards Act. Personnel change is discussed by the line manager with the employee weeks in advance and will be announced only after and with employee consent. In the case of difficulties in labor service performance arising from a personnel change, employees may request for termination of employment contract or file a grievance within 24 calendar days of personnel change. If grievance is rejected, employees can request for termination of employment contract within 7 calendar days of grievance rejection.

General Employees Attrition in 2019

Category	Item	Employees	Rate (%)
Total		591	5.78%
Gender	Male	577	5.64%
	Female	14	0.14%
Region	Northern	5	0.05%
	Central	18	0.18%
	Southern	566	5.53%
	Eastern	2	0.02%
	Others	0	0.00%
Age	18-29	15	0.15%
	30-39	22	0.21%
	40-49	4	0.04%
	50-59	13	0.13%
	≧ 60	537	5.25%

Note: General Employees Attrition Rate = number of turnover ÷ total regular employees x100%

Directions for Handling Employee Voluntary Resignation and Retirement and Directions for Handling Compensations for Retirement, Relief, Occupational Accidents, and Layoffs institutionalize the application for voluntary resignation and retirement. In 2019, a total of 591 employees left, with a resignation rate (number of personnel left / active employees at the end of year) of 5.78%. 537 were aged 60 or above, and retirement was the main reason for resignation.

Maternity Leave and Parental Leave

The rate of employees that return to work after taking parental leave in 2019 was 100%, higher than the 91.7%* stated by the Ministry of Labor, which shows the friendliness and the adaptability of colleagues when they return to the workplace.

*The source of the data is from the Ministry of Labor (2020) [Statistical Results of the rate of employees that return to work after taking parental leave in 2019]

Year	2017		2018		2019	
Item	Male	Female	Male	Female	Male	Female
Number of employees entitled to parental leave	1,332	48	954	41	915	42
Number of employees that took parental leave	2	4	4	10	3	9
Number of employees that returned to work after taking parental leave (a)	7	2	4	9	1	8
Number of employees that should return to work after taking parental leave (b)	7	2	4	9	1	8
Return to work rate (a ÷ b x 100%)	100%	100%	100%	100%	100%	100%
Number of employees returning from parental leave (c)	5	13	7	2	4	9
Number of employees retained 12 months after returning to work after a period of parental leave (d)	4	13	7	2	4	9
Retention rate (d÷ c x 100%)	80%	100%	100%	100%	100%	100%

Note: I. Number of employees entitled to parental leave: The number of employees that have applied the maternity leave and paternity leave from 2017 to 2019.
II. Number of employees that took parental leave: The number of employees that have applied and still in parental leave period in 2019.

CASE HIGHLIGHTS

Apprenticeship Cooperation

To reduce the gap between school education and industrial practices, address the demands for specific skills, and increase the percentage of indigenous employees, CSC cooperates with vocational high schools to provide Staged and Job-oriented Apprenticeship Classes and with universities to provide Masters Programs. Talents are selected and cultivated, with training of skills that are directly applicable in the industry, the CSC corporate culture, and work ethics. The students are expected to be able to join the company at the plant of their internship with capability gained through apprenticeship directly after graduation. From various cooperative education programs with 1 university and 4 vocational high schools, CSC has recruited 291 students as employees.

The Key to Professionalism –

A Stable Workplace

CSC recruits employees through examinations, and is committed to providing employees with equal opportunities and working conditions without gender discrimination. A stable working environment allows employees to find balance between their family and work since the employer provides reliable support.

You Are A Real Talent If You Have Real Capabilities

Shi-Ju Tseng

Director of Human Resources Dept. Tenure：30 years

Director Shi-Ju Tseng mentioned that although CSC is committed to providing an equal work environment, it will not deliberately increase the proportion of female employees. "Everything is treated with openness and fairness, and employees are selected through examinations." A senior shared with her that CSC is a good "laboratory" because as long as a specific plan is drawn up, there will be opportunities to test out new methods. After many years, Director Tseng is even more convinced that CSC is indeed the place where employees can realize their goals.

Professionalism, Regardless Of Gender

Jung-Chi Chang

Director of Legal Dept. Tenure : 2 years

Director Jung-Chi Chang, before joining CSC to facilitate its diversified business, was previously practiced in a large law firm for more than ten years. She mentioned, except for a few on-site ironmaking or steelmaking departments, the ratio of female employees and managers of CSC in most of the departments have increased significantly, i.e. administration, accounting, legal, corporate strategy departments. In recent years, the number of female staff who were sent abroad for job-training in overseas subsidiaries have also increased gradually. Therefore, it is evident that gender bias is not an issue in CSC.

Teamwork To Achieve Cooperative Synergy

Engineer An-Cheng Lee

Utilities Dept. Tenure : 35 years

"You can also see female employees who are responsible for inspections, power stop and restore," said An-Cheng. If a female employee is limited by congenital physiological conditions such as not having enough physical strength, CSC will assign a partner to her. Mr. Lee said that work safety measures come first and it is important that the personnel are familiar with the relevant regulations. As task allocation is based on an empathetic approach, Mr. Lee said that "the most important idea is to respect the intentions of employees and return to humanities management advocated by CSC."

Unlike the past, now more and more female employees have joined the factory sites. CSC puts emphasis on professional capabilities and teamwork.

The Right Person In The Right Place

Researcher Hsin-Yi, Lee

Iron & Steel Research & Development Dept. Tenure : 6 years

Hsin-Yi, who is enthusiastic about research, was recruited by CSC through the Doctoral Researcher recruitment scheme and works as a member of the motor electromagnetic steel sheet development team. When speaking about the reasons for choosing CSC, she said it was mainly because of CSC's stable work environment, as well as the continuity of its research projects and content. " It is a company that allows me to give full scope to my expertise," said Hsin-Yi. Hsin-Yi, who had a baby last year, thanked the managers and colleagues for their considerateness and proactivity in addressing her needs, providing support for female colleagues who have to find balance between work and family.

The "Development of Electromagnetic Steel Sheets for Electric Vehicle Drive Motors" project successfully developed the key materials for electric vehicles and won the highest honor of CSC's R&D Achievement Awards. Hsin-Yi (2nd from the left) and the team members accepted the award from the chairman.

Continuous Improvement And Reliable Workplace

Engineer I-Wen Liu

Intellectual Property & Testing Technology Dept. Tenure : 9 years

I-Wen mentioned that "CSC' s complete management system and employee unions have made me feel at ease. It is a place where I can work with my expertise." I-Wen, a mother herself, usually does not voice out her opinions due to her low-profile personality, but her manager and colleagues took the initiative to understand her situation. "The company's gradually improving the welfare and the needs of employees, especially for the female employee." said I-Wen.

I-Wen also often acts as the emcee of the seminar held by the R&D Dept. CSC's sufficient training resources and opportunities allow I-Wen to discover new possibilities and find new interests.

The Maternal Health Protection Plan

The maternal health protection plan is targeted at female colleagues of childbearing age (15-49 years old). In order to ensure the physical and mental health of female employees during pregnancy, postpartum and breastfeeding period, occupational medical associations will conduct job site assessments. The factories and employees will follow the doctors' recommendations and carry out measures to protect the health condition of female employees.

6.2 Joyful Workplace

6.2.1 Joyful Workplace

Employee remuneration includes basic salary (base salary, meal allowance, and allowance for special work environments or special maintenance), year-end bonus, and production / sales profit bonus. Employees are remunerated based on their duty, current market wage standards, the company financial status, and organizational structure. Pay is determined without gender-based differences, and the basic salary paid to women and men of the same position and level is the same. However, the pay grade of the same position may vary due to difference in seniority because of the link between salary and tenure. For employees of the same position and the same tenure, pay is the same regardless of gender. The average remuneration of regular employees in non-managerial positions (senior management level and below) is 1.444 million TWD, and median is 1.437 million TWD.

Item	2018	2019	Rate of Change (%)
Number of full-time non-managerial employees	10,287	10,200	-0.8%
Average remuneration of full-time non-managerial employees	1.652 million TWD	1.444 million TWD	-12.6%
Median remuneration of full-time non-managerial employees	1.501 million TWD	1.437 million TWD	-4.3%

Note: I. Non-managerial positions include senior management level and below.
II. Decreased in 2019 due to the decline in the revenue which influenced the amount of profit bonus for employees.

Salary Adjustment Based on Performance

Those qualified will receive respectively 1-8% of raise according to their midyear performance grade. Those qualified will receive annual salary adjustment according to their yearend performance grade. The average percentage of annual salary adjustment for the past 10 years is around 2%.

6.2.2 Welfare

CSC Employee Welfare Committee is comprised of 27 members from the employers and employees, which provides welfare facilities such as employee convenience shop, cafeteria, resort, single dormitory, gym, commute bus, laundry service and library. CSC Employee Welfare Section handles welfare services and conducts satisfaction investigation; the average score for satisfaction was 85.2 in 2019 (higher than the average score in 2018, which was 83.9.)

Item	Content
Employees Residence	1,020 applicants; new employees whose original residents are outside of Kaohsiung city will be considered first.
Gym	56,000 persons used in 2019; open to employees, their family and local residents (Hsiao Kang District).
Childbirth Gifts	CSC gives out childbirth cash gifts, guarantees enrollment in CSC Kindergarten, and provides tuition fee discounts.
Education Scholarships	5,011 applicants in 2019; available for employee's children from elementary school to doctorate degree.
Group Insurance from the Employee Welfare Committee	In order to improve the rights and interests of each employee, CSC's Employee Welfare Committee arranges group insurance for the members. The insurance covers the employee themselves, spouses, children and parents. The insurance includes group life insurance, accident insurance, hospitalization, cancer treatment, etc.

6.2.3 Work-life Balance

CSC has created a favorable work environment and strengthened the well-being of employees. Everyone is welcomed to join the CSC family and continue to make CSC prosper. In order to encourage employees to engage in leisure activities and maintain good relationships with their families, CSC organizes activities every year and invite our employees and their families to attend.

For complete information https://www.csc.com.tw/csc_e/hr/csr/em/em2.htm

Large-scale Company Trips for Employees and Families

The Employee Welfare Committee organizes large-scale company trips annually. In order to encourage the participation of regular daytime workers, night shift workers, and retirees, a total of 4 batches were organized in 2019. All senior executives and officials were invited to participate, building strong cohesion among all employees and attracting more than 14,000 employees and their families to attend.

Collective Wedding Ceremony

In response to the increasing number of new employees, in order to encourage employees to start their own families, CSC organizes collective wedding ceremonies every year for young employees to attend with their mate. One of the 2019 annual collective wedding ceremony was held at the Banyan Plaza in Weiwuying National Kaohsiung Center for the Arts, with a total of 128 couples participating.

Congratulations to newlyweds from Chairman Wong


Collective Wedding Ceremony

Company Anniversary Celebration

At the end of each year, CSC celebrates the company's Anniversary Fair and 2019 is CSC's 48th anniversary of its establishment. The main theme of the anniversary celebration was “Intelligence and Innovation. The minister of MOEA Jong-Chin Shen and the minister of MOL Ming-Chu Hsu were invited to join the event and witness CSC's commitment to green energy development and harmonious labor relations.


Company Anniversary Celebration


The Feather Art of Drum and Dance


Baby Crawling Competition


Marathon of Company Anniversary Celebration

Club Activities

CSC actively encourages employees to participate in club activities. By the end of 2019, CSC Employee Welfare Committee had set up 43 clubs in total and leisure sports venues, which aim to care for employees’ health and overall well-being.

The Boating Club

The Cycling Club

The Jogging Club

Services for
Retired Employees

https://www.csc.com.tw/csc_e/hr/csr/em/em11.htm

Material Topic 6.3 Employee Rights

Benefit Highlights in 2019

100%

Labor Union of CSC covers 100% of employees with membership qualifications.

The Labor Union of CSC represents as one of member both in the CSC's board and the Corporate Governance and Sustainability Committee.

300 communication seminars

In 2019, near 300 communication seminars were held across factories.

The 5th Collective Agreement was reached between labor and management, including the approval of one extra day for the marriage officiant leave, marriage leave, and maternity leave, which is superior to the Labor Standard Act and other regulations. This effort received a collective bargaining agreement reward by MOL.

Meaning for CSC

The harmony and stable development of labor relations is the key to sustainable operations of the company. CSC strictly abides by domestic and foreign labor and human right standards, attaches great importance to labor-management relations, and looks forward to creating a friendly and harmonious work environment to enhance competitiveness.

Management Approach

CSC sets humanity management as its foundation of management and enthusiastically protects and improves human rights. The protection of basic human rights depends on the concrete measures taken internally to ensure the civic rights and labor rights of its employees. Therefore, CSC signs collective agreements and conducts safety and health programs.

Rules and Regulations

CSC considers "people" an important asset and provides a friendly work environment that implements the protection of human rights. CSC strictly adheres to domestic and international codes on labor and human rights to treat and respect all employees equally. Apart from complying with the government's regulations on labor conditions and providing equal opportunities for all job seekers based on the Employment Services Act, CSC also has established the "Employee Rewards and Punishment Review Committee" to review major rewards and punishments of employees. Furthermore, CSC has set up the "Workplace Sexual Harassment Prevention, Grievance, and Disciplinary Action Regulations" to provide employees and jobseekers with a work environment free from sexual harassment. Grievance mechanisms are provided for employees to appeal infringement of legal rights to work and improper treatment. In addition, each factory (office) also arranges seminars with directors and management with employees every 2 to 3 months, and invites the labor union representatives to attend the meeting together. The discussion topics during the seminars are tracked. All new employees are subject to trainings on human rights, and all employees have received such trainings. 1,055 persons (10.3% of all employees) received 2,754 hrs of trainings on human rights in 2019. In 2019, there was no discrimination nor complaints; no violation of human rights laws and regulations was reported.

Employee Communication

CSC values employer-employee relationships. Periodic labor-management meetings are held monthly and 12 were held in 2019 in order to promote employer-employee cooperation as well as increase work efficiency. In addition, each factory (office) (including second-level units of subordinate departments) arranges seminars to discuss questions and share opinions with employees every 2 to 3 months according to the regulations. By gathering everyone's opinions, reasonable solutions can be found in order to build cohesion among all employees. In 2019, 287 communication seminars were held by all factories / departments and the total number of participants was 5,500.

In addition to the labor-management meetings and seminars with directors and management, employees can also be reflect their opinions through the following channels:

Grievance System / Hotline	For employees who feel their rights have been violated, or when their problems are not reasonably solved after they have followed the standard administrative procedures to file complaints about difficulties in work.
Labor Union of CSC	Members can submit the complaint to the union.
Occupational Safety & Health Committee	Regarding safety, health, environmental protection, etc.
Employee Welfare Committee	Employee Welfare and Benefits
Employees' Retirement Reserve Fund Supervisory Committee	Storing, using, and managing retire reserve funds
Sexual Harassment Grievance Committee	The Committee is responsible for handling sexual harassment complaints in the workplace, and providing a work environment where employees, contract workers, interns and job seekers do not have to worry about sexual harassment.

Collective Agreements

CSC values employer-employee relationships. CSC signed the 1st Collective Agreement with CSC Labor Union on 14 Feb. 1997. The collective agreement, which covers all Labor Union of CSC's members (100% of full-time employees with membership qualifications), came up for review every 3 years, and this set a milestone for employer-employee harmony and settlement of affairs. With articles and concept superior to relevant legal requirements, CSC's Collective Agreement has since become a benchmark for other labor unions.

After the 4th Collective Agreement between CSC and the Labor Union of CSC expired at the end of 2017, a new round of agreements was started. After 21 months, the employers and employees had undergone negotiation 20 times, and finally the 5th Collective Agreement was signed on August 15, 2019. This Collective Agreement included more labor rights, especially in the part regarding employee leaves: one extra day for the marriage officiant leave, marriage leave and maternity leave, taking into account the needs of different generations. At the same time, in response to the government's policy of encouraging more births, Minister Ming-Chun Hsu from the Ministry of Labor issued a reward of 250,000 TWD for signing the Collective Agreement, demonstrating the peaceful and stable development of labor relations between CSC and the Labor Union of CSC.

Labor Union of CSC

A healthy labor union can speak for employees and make suggestions for the company, so as to strive for a decent work environment, benefits, and career development for employees. The labor union helps to promote balanced development of business operations and extend social involvement of the company. The Labor Union of CSC was established on 30 Dec. 1980 with members from each department, except for top management. The Union aims to promote business development from the labor's point of view, to urge unification among members, to protect the rights and benefits of members, to improve the living of members, and to enhance competency.

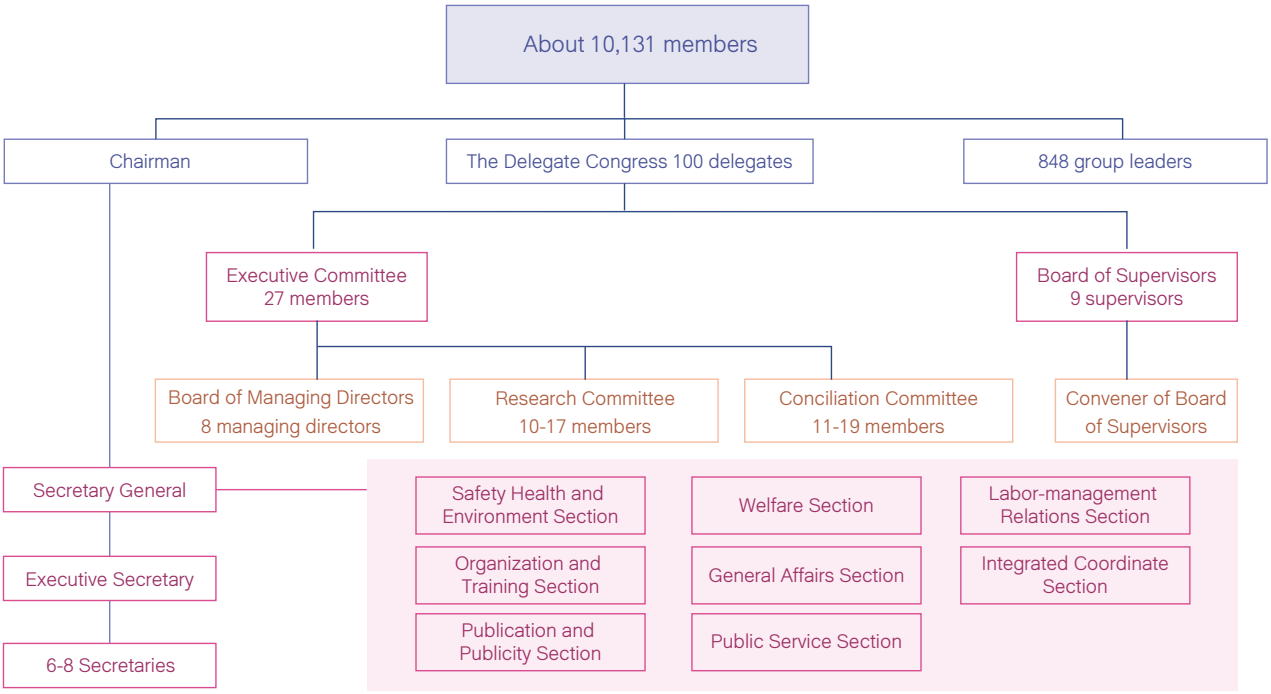
Organization

The Delegate Congress is the highest authority of the Union, with 100 delegates elected by members from departments at each plant site. During adjournment, the Executive Committee is responsible for union affairs. The Executive Committee consists of 27 council members elected by delegates; the Executive Committee has one chair that is directly elected by the union members and represents the union and handles regular committee matters. The Secretariat and 8 functional groups implement union affairs. There is also a Board of Supervisors that supervises the operations of the Executive Committee.

The 5th Collective Agreement between CSC and the Labor Union of CSC

Membership is compulsory for all qualified employees, excluding managers of certain sections such as the manager of the Employment Section (Human Resources Dept.) and the Guard and Fire Brigade (General Affairs Dept.). At present, The Union members have covered all the employees who are qualified to join the Union.

The Labor Union of CSC Organization Framework



Committee seats assigned to union members	● Labor-Management Meeting (10) ● Rewards and Punishment Review Committee (4) ● Employees' Retirement Reserve Fund Supervisory Committee (10) ● Safety & Health Committee (15) ● Employee Stock Ownership Trust Committee (3)	● Sexual Harassment Grievance Committee (3) ● Employee Representative Board (1) ● Employee Welfare Committee (15) ● Employee Complaint Committee (2)
The union participate in external organizations	● Kaohsiung City Confederation of Trade Union (12)	● Kaohsiung Municipal Machinery Workers' Union (13)

Involvement in Corporate Governance

CSC holds periodic labor-management meetings and sets one seat for the labor representative on the Board. Since 31 May 2001, industrial democracy has been realized as the union was selected as the labor representative on the Board. The union later joined Corporate Government and Sustainability Committee in 2019, playing an active role in corporate governance. The Union also sent members to participate in the Human Resources Development Committee and in the Employee Rewards and Punishment Review Committee.

Pursuit of Labor Rights and Benefits

Labor Union of CSC pursues labor rights and benefits in a rational and peaceful manner, including labor-management meetings, seminars with directors and management, and collective bargaining. In 2019, no major labor-management dispute was reported.

Competency Development

https://www.csc.com.tw/csc_e/hr/csr/em/em6.htm

6.4 Occupational Safety and Health

Material Topic

6.4.1 Occupational Safety

Benefit Highlights in 2019

0 Zero major occupation accident	Full-time employee disabling injury frequency rate was the lowest in the past 5 years.	CSC carried out 263 training sessions on occupational safety and 8,685 trainees participated.	CSC assisted CSC group subsidiaries and government units to organize industrial safety training, with a total of 68 sessions and 2,108 trainees.

Meaning for CSC

A sound labor system is intertwined with a nation's development. The management quality of occupational health affects the safety and health of workers as well as the supply of labor; it is also is one of the important factors for corporate sustainability. Therefore, countries around the world are increasingly stricter with occupational safety and health requirements. By working with all employees and contractors, CSC implements good occupational safety and health management in hopes of maintaining a safe work environment.

Goals

Year	2019		2020
Item	Target	Performance	Target
Employee Disabling Frequency Rate (FR)	0.2	0.18	0.2
Number of Employee Disabling by Traffic Accidents in Commute	9	16	9
Contractor Disabling Frequency Rate (FR)	0.3	0.83	0.3
Major Occupation Accident	0	Achieved	0

Management Approach

The occupational safety and health management in CSC is mainly based on the occupational safety and health management system (OHSAS 18001& CNS 15506). With the continuous improvement of the PDCA, The “Occupational Safety and Health Committee (OSH Committee)” also convenes meetings regularly to review the performance indicators of each unit, improve the working and environmental safety of colleagues, and promote health care.

There are two performance indicators for assessing occupational safety and health: One is an active indicator such as near miss incidents or proposal of safety and health; the other is a passive indicator such as accident experience, administrative sanction, and audit results. Apart from compliance with occupational safety regulations, CSC has

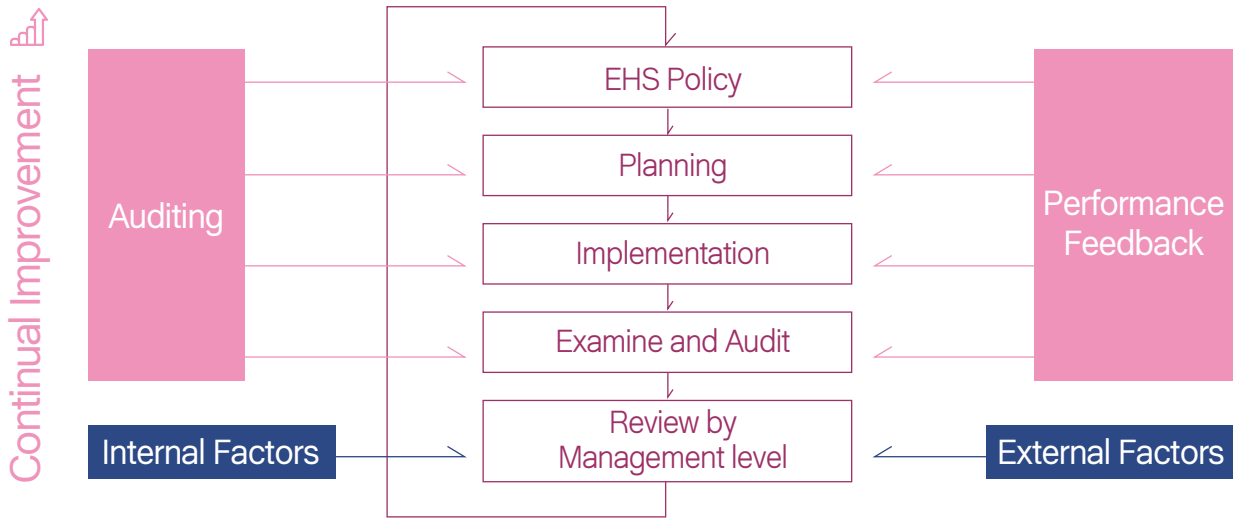
increased the frequency of health check-ups with more tests added, and requested each employee to take the somatosensory training. These measures, superior to the current legislation, can help increase employees' safety awareness and promote health caring.

Safety and Health Management System

For continual improvement on our management in occupation safety and health, CSC introduced the occupational safety and health management system (OSHMS) in 2000, and obtained certifications on OHSAS 18001 (2002) and TOSHMS (2008, TOSHMS is also known as CNS 15506). The scope of safety and health management system applies to all employees and workers in CSC. Contractors have to follow the CSC safety regulations as well. Each department shall take hazard identification and risk assessment first and carry out corrective actions according to the results. Furthermore, the effectiveness of the actions would be assessed through performance indicators.

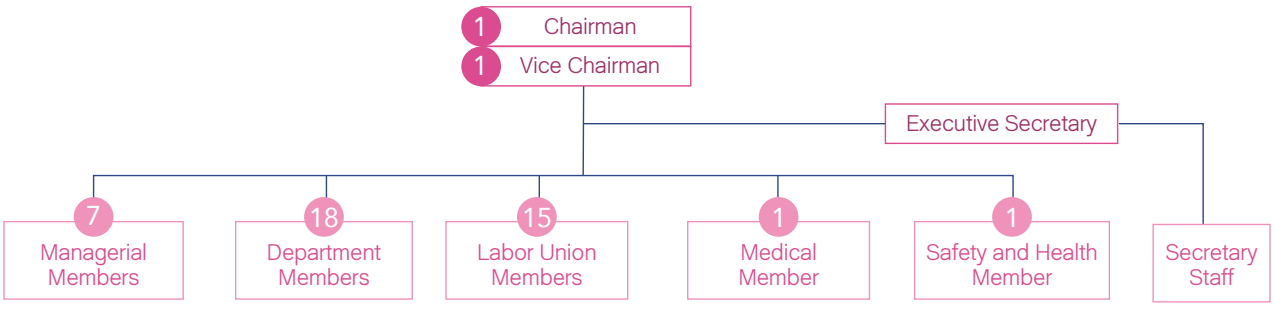
The external audit of the CNS 15506 / OHSAS 18001 system was completed in 2019 As a result, the continual certification was obtained from the external auditor (BSI). In terms of the newly announced ISO 45001, CSC has entrusted BSI to assist in the transition of the management system and revised the existing regulations to meet the requirements of ISO 45001. It is expected that the verification of the transition of ISO 45001 will be completed in June 2020 by external audit.

Health and Safety Management Procedure



Occupational Safety and Health Committee

The OSH Committee is set up for effective discussion to practical solutions. CSC President serves as the Chairman, the Executive VP serves as the vice chairman in the committee. There are 15 representatives from CSC Labor Union, account for 34% of all committee members. The Committee holds bi-monthly meetings and disclosures OSH management performances at the shareholder annual report for public review.



Liability and Grievance Mechanism

Each factory and department convenes a meeting with Occupational Safety and Health Committee every month to communicate opinions and publicize company policies. If the relevant opinions are company-related, they can be raised during the quarterly communication session between the OSH Committee and Safety & Health Planning Engineers.

Safety and health management is a key project for CSC. The prevention of occupational hazards relies on the attention and active participation of all employers and employees. The key to the success of safety and health management is whether it can be implemented, that is, whether the planning, execution, control, and evaluation of safety and health management are effective.

Safety Culture

The goal of occupational safety management is to instill safety awareness and knowledge into every employee and form a so-called “workplace safety culture." Employees are inspired to improve the environment and equipment by Employee Suggestion Program and Quality Control Circle. Employees and contractors formulate the workplace safety procedures after discussions and together ensure the compliance with the procedures. This way, each worker is involved in issues on workplace safety and pays attention to occupational safety.
Safety culture is a multi-oriented concept. CSC's safety culture is composed of the following three aspects.

Training and Publicity

Improving employees' mentality, awareness and ability to safety and health is CSC's key point in on occupational safety education and training. CSC's digital management of the safety and health training management system allows instant updates of data and online enquiries, thus making the management, control and assessment of safety and health training more effective. In addition, CSC actively promotes bottom-up Safety SOP Revision to let employees and contractors involved in the actual operations formulate the workplace safety procedures. Instead of entrusting specialists to devise such procedures, CSC makes use of collective discussions in combination with zero-disaster danger recognition training to identify hazards in operations, methods, and the environment. By doing so, CSC is able to effectively control risks and reduce occupational hazards.

CSC set up the “Occupational Safety Training Classroom” for somatosensory training in 2009. With scenarios simulating the on-site environment and equipment, employees can combine theory and practice by experiencing the simulation in person and understand the hazards in workplace. Since employees in CSC are requested to take the somatosensory training. The training rate among new hires is 100%. Besides its employees, CSC also assists its subsidiaries, government agencies and external units in conducting relevant training or visits in order to strengthen occupational safety awareness and fulfill corporate social responsibility. CSC assisted the group's subsidiaries in organizing 38 training sessions with a total of 1,161 trainees, and assisted government agencies and external units in organizing 30 sessions, with a total of 947 trainees.

In addition, CSC cooperated with ITRI to launch the "Steel Industry R&D Platform," which develops a VR system for converter tapping control training. For the first time, new employees will be trained through VR that simulates the on-site work environment, allowing new hires to learn about the tapping control of converters in real life, while adding reminders during the process. With new technology, new employees can now first practice on the computer, familiarize themselves with the processes to reduce the operational risks and once they are familiar with the process it can reduce the operational risk. Currently it is tested on the converter operation in the Hsiao Kang plant.

Trainee	Course	2019	
		Classes	Persons
Employees and Contractors	On-the-job training for radiation protection staff, radiation staff and inspection staff for radioactive steel building materials	4	439
	Transportation Safety Training	8	775
	Basic training on safety management of explosion-proof electrical equipment	4	324
	Anti-backfire Device Seminar	2	157
	AED (Automated External Defibrillator) Operation Training	4	268
	Training on how to catch stray dogs in the factory safely	1	48
Employees	Somatosensory Training	76 (4 types)	661
	ISO 14001 / CNS 15506 / OHSAS 18001 Internal Auditor Training	4	136
	ISO 45001 Transition Promotion Meeting	16	478
	Occupational Safety and Health Act	67 (14 types)	2,461
	Safety Inspection of Hazardous Machines and Equipment Seminar	4	366
Contractors	Training for replacing contractor certificates	54	2,314
	Somatosensory training for replacing contractor certificates	11	75
	Training for supervisors in contractor high-hazard operations	8	183

Abnormality Control and Prevention

- Safety Observation and Audit: For early detection and correction of unsafe work behavior and improvement of work environment and equipment, site managers are asked to patrol work sites regularly. Employees, contractors, and the work environment are reviewed with reference to the 5-step procedure: Decide, Stop, Observe, Act, and Report" which are subject to timely encouragement and correction. For safety violations, employees and contractors are requested to immediate correction without affecting operation safety. In 2019, safety observation and audit of site by managers (including site inspection) totaled 79,947 times.
- Prevention of Occupational Diseases: CSC has the responsibility and obligation to prevent occupational diseases derived from various operating procedures and to protect the employees against conditions that are risky to health and well-being. There are some health hazards such as high temperature, noise and dust are inevitable in the production process of traditional industries. Doctors in Occupational Medicine will pay a visit to the plant when abnormalities are found. Through training, personal protective equipment and inspection, the risk of exposure to health hazards is greatly reduced. There have been no cases of occupational diseases among employees in recent years.

  Occupational diseases are determined by the Occupational Safety and Health Administration (OSHA), Ministry of Labor.

Work Environment Inspection

By the "Regulations for Implementing Work Environment Monitoring", CSC entrusts the monitoring agency which is recognized by Occupational Safety and Health Administration to implement work environment monitoring. We evaluating

whether or not it acts in compliance by monitoring report. To protect workers' health, CSC improves work environment immediately when there was abnormal value in the report. In 2019, work environment inspection was completed on 3,056 testing points (including areas and personnel), all following the inspection plan. Subjects for inspection include noise, wet bulb globe temperature (WBGT) index, carbon dioxide, chemical substances, and dust.

Implementation Results

In 2019, 23 minor workplace injuries, 4 disabling injuries, 28 minor commute injuries, and 16 traffic-disabling injuries were reported (full-time employees). The accidents were reviewed and improved. The days of loss due to injured contractors is difficult to track; therefore the severity of disabling injury rate and the number of traffic accidents involving contract workers were not included. The units where the accidents happened carried out investigations and proceeded with correction actions after finding the reasons. In normal situations, CSC strengthens reinforced physical training, management by wandering around (MBWA), occupational safety diagnosis, bottom-up safety measures taken by entry-level employees and / or the Union team leaders, near miss reporting management, 5S self-management, self-protection, mutual protection, and mutual supervision, in order to continue improvement.

Absence and Disabling Injury in 2019

Gender	Absence Hours	Sick Leave Hours	Absence Days[I]	Absent Rate (AR)[II]	AR	Count of Disability	Disabling Frequency Rate (FR)	FR
Male	7,032	100,626	107,658	0.52%	0.53%	4	0.19	0.18
Female	824	4,877	5,701	0.84%		0	0	

Note: I. Working hours are 20,688,881 hrs for male and 677,767 hrs for female.
II. Absent rate = Absence hours÷Working hours x 100%

	2015	2016	2017	2018	2019
Employee FR[I]	0.28	0.28	0.27	0.32	0.18
Employee SR[II]	16	153	10.47	548	7.75
Contractor FR[III]	0.78	0.67	0.40	0.78	0.83

Note: I . Disabling Frequency Rate (F.R.) is the times of disabling per million work hours, disabling times x 1,000,000 ÷ total work hours during the year.
II . Disabling Severity Rate (S.R.) is the times of disabling per million work hours, disabling days x 1,000,000÷ total work hours during the year
III. Contractors' working hours are 20,532,427 hrs. And the proportion of male and female are 83% and 17% respectively.

Disabling Injury by Category in 2019

	Falling	Pinch	Scald	Collision	In-plant Traffic Accidents	Objects Drop	Others
Employee	2	0	1	0	0	0	1
Contractor	8	3	2	2	1	1	0

Legal Compliance

The OHSAS 18001 management system requests company commitment to legal compliances and identification of relevant laws and regulations. CSC distributes relevant EHS legal requirements to related departments for identifying applicable and precautionary measures. In 2019, there are 53 on-plant inspections conducted by Kaohsiung Labor Standards Inspection Office (KLSIO) and 2 notices were issued.

	2015	2016	2017	2018	2019
Issuer	KLSIO	None	KLSIO	KLSIO	KLSIO
Count / Fine (TWD)	2 / 120,000	0	2 / 120,000	8 / 910,000	2 / 220,000

In 2018, there were two violations that were punished by Kaohsiung City Government Labor Bureau of Labor Inspection Office. After analyzing the safety and health goals that did not meet the standards in 2019, the following improvements will be made:

Increase Inspection Frequency

Among all the inspections in 2019 carried out by Safety & Hygiene Dept., there were 1,002 conformity cases, 414 recommendations and 231 nonconformity cases, which helped with the treatment and improvement of on-site hygiene and safety. CSC will increase the frequency of inspection in 2020.

In order to improve the performance of factories with a history of poor occupational safety, an "Increasing Inspection Effectiveness Project" is planned for 2020. The supervision and inspection engineers of the Safety & Hygiene Dept. carry out the inspections, annual surveys, temporary fault inspections, and key operations of the inspection units and implement the project until the performance of the plant is improved.

Enhance Safety and Health Management

In 2019, to prevent workplace hazards and strengthen safety management, CSC continued to promote compliance with traffic rules and workplace safety rules and launch “Activities of Five Directions Check for Safety” within production departments; also, high-level managers visited job sites and participated in zero disaster activities.

CASE HIGHLIGHTS

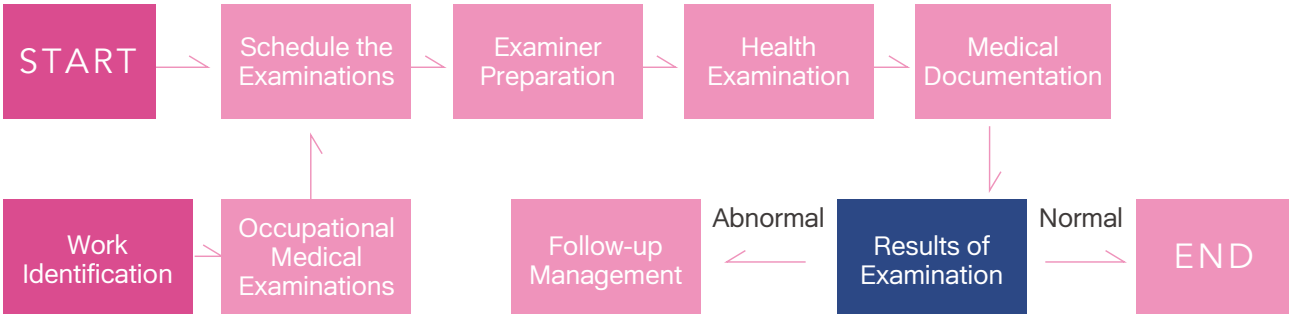
Factory Traffic-safety Improvement Plan

https://www.csc.com.tw/csc_e/hr/csr/em/em5.htm

6.4.2 Health Care

CSC Clinic handles labor health protection matters for on-site services such as health management, occupational disease prevention, and health promotion. The main responsibilities include first aid treatment, health examinations, health management and promotion activities, and medical and health services for employees. In addition to health examinations and analysis / classification of examination results, doctors in Occupational Medicine will carry out occupational suitability assessments on-site, including competency assessments for injured / sick workers returning to, making suggestions for job re-assignment or adjustment. CSC has developed an online health management system that is connected with the Safety and Health Management System, with the help of the internal occupational safety database, the health management online system makes a list of employees from high-risk departments, who require special health check-ups, and regularly keeps track of the health of employees working in a high-risk work environment. 60 AEDs (Automatic External Defibrillators) have been added to each plant, and AED operation education and training for first-aid personnel have been conducted to strengthen CSC's first-aid network.

Health Examination Procedures



Medical Services

CSC Clinic employs professional medical and nursing teams from KMUH, KMSH, Kaohsiung Veterans General Hospital and Kaohsiung Armed Forces General National Army Hospital to provide the primary diagnosis / treatment, chronic disease prevention, and basic medical services. The number of people that came for treatment in 2019 was 45,991. With the close ties that the clinic has with the local hospitals, the clinic provides referral service for patients.

Health Examination

CSC provides health check-up tests on top of the tests done for common cancers such as lung cancer, liver cancer, and colorectal cancer, CSC has also added chest X-ray, abdominal ultrasound, quantitative immunoassay and fecal occult blood tests to increase the sensitivity of screening tests. CSC further takes health management measures based on the results of health examinations and provides consulting, diagnosis, referral and other services. Starting from May 2019, prostate specific antigen (PSA) and ovarian cancer screening (CA125) tests have been applied to male and female employees who have reached the age of 50. The number of participants were 1,766 and 16 respectively. CSC looks forward to providing employees with more comprehensive protection of their health.

For employees work in special environments with high temperature, noise, lead, dust, and organic and special chemicals, additional tests will be arranged. In 2019, 3,131 employees participated in these additional exams, of whom three people (operations with loud noise) were included in level 4 health management and were evaluated by occupational medical professionals. The clinic reminds employees of tracking abnormalities and make corresponding improvement according to the results of annual health inspections. Experts are employed to conduct research on employee health examinations and operating environment measurement data in order to understand the dangerous factors and propose preventive education and training programs.

Health Care

Psychological Counseling

In 2019, 348 consultations were provided and most consultation topics were about family, the workplace and emotional distress. Over the years, a total of 1,237 consultations have been provided to help employees develop flexibility and open-mindedness and learn to understand their own situations from a different perspective while finding the motivation for life. Human Resources Dept. provides counseling courses to enhance middle-level managers' attention to the mental health of employees.

Health Management Plan

The CSC Clinic promoted a number of health promotion activities (including lectures) in 2019 and a total of 5,286 participants. Certain colleagues with high body fat and cholesterol levels are advised to increase awareness on health management.

7 Social Participation

7.1 Concepts and Management

7.1.1 Concepts of Participation

Proactivity and Responsibility	CSC actively fulfills its corporate responsibility by being responsible for the safety, health, remuneration, fringe benefits, equal rights, and training of employees and personnel of contractors.
Diversity	In addition to focusing on the rights and interests of the shareholders, employees, contractors, and local residents, CSC also offers dissuasion to the government about the country's public policies and international related issues.
Local First	CSC places great emphasis on the quality and safety of the local environment, paid business income tax and environmental fees to the Kaohsiung City Government, and facilitated the development of the local areas.
Accountability	Being a benevolent corporation, CSC conducts a lot of charitable activities with the assistance of its related departments, the union, clubs, and the CSC Group Education Foundation.

7.1.2 Multi-involvement and Commitment

Diversified Social Involvement

Job Category	Organizer	Diversification
Central and Local Public Affairs	**Public Affairs Dept.**	Good neighborliness, social care, and participation in emergency relief
		Positive interactions between public representatives, administrative agencies, the media, and opinion leaders
Social Education	**CSC Group Education Foundation**	Promotion of educational activities related to steelmaking and its application technology
		Sponsoring activities regarding science and technology, social education, arts and culture, etc.
Social Care and Art Activities	**CSC, the CSC Group Education Foundation, Labor Union of CSC, and employee clubs**	Post-disaster emergency relief and reconstruction
		Caring for the disadvantaged
		Caring for the ecological environment
		Enhancement of humanistic quality and cultivation of art in Kaohsiung
Human Rights and Workforce Development	**Human Resources Dept.**	Negotiation for decent work environment policies
		Share of knowledge
Safety and Health	**Industrial Safety and Hygiene Dept.**	Prevention of occupational accidents and epidemic diseases
		Domestic and international exchanges
Labor Policy	**Labor Union of CSC**	National labor rights, benefits, and welfare policies
		Exchanges, collaboration, and interactions with other union groups
Environmental Protection	**Utilities Dept. and Environmental Protection Dept.**	Cooperate with the Kaohsiung Energy-Saving and Carbon-Reducing Technology Counseling Team promoted by Kaohsiung City to provide enterprise energy-saving technology diagnostic services.
		Promote knowledge exchange on environmental protection through visits
		Participate in the water environment patrol team promoted by the government to ensure sustainable water resources.

For complete information https://www.csc.com.tw/csc_e/hr/csr/soc/soc2.htm

7.1.3 Expenditures of Social Responsibility

MM TWD

✓	78.90	**Social Charity Donations** Social and local charitable support and assistance of relief in emergencies
✓	7.63	**Donations to the CSC Group Education Foundation** Implementation of cultural education and promotion of education and nurturing of new talent in steel-related fields
✓	1.54	**Donations for Institutes and Associations** Sponsorship for seminars and conferences
✓	14.09	**CSC Retirees Services Sec.** Retiree benefits reserve

Total

102.16

MM TWD

7.2 Local First

7.2.1 Community Care

To fulfill its corporate social responsibility, CSC has continued to take action to provide care and assistance to the nearby communities for their development and sponsor charitable activities in Hsiao Kang for decades. It upholds the concept that what is taken from the society must be returned to it, and sincerely takes concrete action to care about and contribute to the society, communities, and disadvantaged groups from the aspects of environment protection, community care, and charity.

- CSC offers funds for social relief of emergencies and subsidizes low-income families during the Taiwan traditional festivals in Hsiao Kang.
- According to "the Guidelines for new recruitment", the candidates who are Hsiao Kang residents and meet the requirements are given a certain percentage of bonus points in their written tests when applying for positions in CSC.
- To celebrate Mother's Day and promote filial piety as well as local education and culture, CSC invited about 150 students from junior high schools and elementary schools in the Hsiao Kang District to participate in the 2019 Ceremony for Recognition of Filial Piety and Granting of Merit Scholarships.
- CSC provides merit scholarships for students and tuition assistance to students from low-income families in Hsiao Kang.

7.2.2 Cultural Heritage

Culture is the root of a country, just as how corporate culture is the soul of a company. Cultural preservation activities are protecting the roots of the Hsiao Kang District, Kaohsiung City, and Taiwan. In order to preserve the local cultural heritage, CSC adheres to the concept of "Proactivity and Responsibility, Diversified involvement, Local First, and Accountability", and invests in the selection of resources for continuing cultural heritage to the students, using education to create a profound impact on society and diversity. With unique characteristics of the local area, students can pass on the local culture through artistic activities such as music, films, and folk art starting from a young age. The following are cultural heritage activities carried out in 2019:

Indigenous Musical Assets

When CSC organizes related activities, we invite the suitable local communities and groups to join, also provides a stage for performances. For instance, the Pingtung Liudui Hakka Cultural Park was selected as the venue for the 2019 CSC Group Recreational Activity. The event

The Taiwu Children's Ancient Ballads Troupe were also invited to sing at the farewell party for retiring employees

involved hiking and experiencing the Hakka culture, where the disadvantaged groups and families were invited to participate. Pingtung's local groups, the Feather Art of Drum and Dance, the Puzangalan Children's Choir, among others, were invited to participate in the stage performances to promote the local minority culture. In addition, the Taiwu Children's Ancient Ballads Troupe were also invited to sing at the farewell party for retiring employees, using their beautiful voices and lyrics to express gratitude to the retired colleagues. Through indigenous music, we hope to let more people know about Taiwan's indigenous culture and understand that precious cultural assets are closely related to everyone.

The Feather Art of Drum and Dance

The first Taiwanese indigenous percussion band with the main focus on the Paiwan tribe. The head of the group is self-funded and teaches young children about the Paiwan tribe's ancient rituals, percussion, singing and dancing, and helped them to understand the importance of their own culture.

The Puzangalan Children's Choir

Formerly known as the Majia Township Jiayi Elementary School Choir, consists of mainly elementary to high school students of the Paiwan tribe from the Pingtung County. The original intention of the group leader to form this choir was not to participate in competitions, but to accompany children from disadvantaged indigenous families and help them to read, sing, and work together.

Taiwu Children's Ancient Ballads Troupe

Made up of the Taiwu Elementary School Choir in Pingtung and their performances are based on the ancient tune of Paiwan tribe. In 2019, CSC made involvements such as Pre-WOMAD Concert, invited the troupe to sing at the farewell party for retiring employees. The culture and ethics of Paiwan people were presented in beautiful ancient ballads, and through the clever music arrangements, the glory and gratitude of CSC's retired colleagues were conveyed. On the performance day, students were arranged to visit CSC's plant, whom were amazed by the tall steel equipment and the torpedo car containing the molten iron. Our Chairman also arranged an "Environmental Education Tour Bus" to the Taiwu Elementary School.

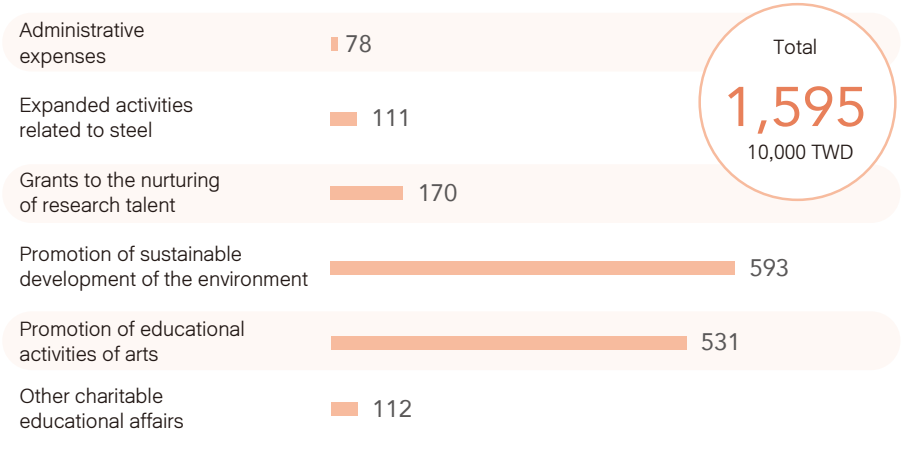
For more details
[Cultural Heritage] https://www.csc.com.tw/csc_e/hr/csr/soc/soc7.htm
[Eco-city] https://www.csc.com.tw/csc_e/hr/csr/soc/soc3.htm

7.3 The CSC Group Education Foundation

CSC, as a leader in Taiwan's steel industry, established the CSC Group Education Foundation in 2006 through the CSC board of directors to further expand and implement corporate social responsibility. The board of directors of the foundation was formed by cross-sector experts. It is a national non-profit organization and has established a good international image for the group companies so far.

CSC Group Education Foundation aims to promote education and cultivate talents in steel-related fields, care for ecological conservation, enhance the humanistic spirit, and pursue sustainable development as its mission to promote the concept of holistic education.

Use of Funds by the CSC Group Education Foundation in 2019



unit : 10,000 TWD

Highlights of 2019

CSC Camp

With the theme of "building an ideal factory" in the 2019 CSC Camp, students were invited to use creativity to brainstorm together. The camp also provided courses on technology, environmental protection, art, history, architecture, etc. Students took a visit to the CSC cold rolling production line and CECK Auto Parts Co., Ltd. At the end of the camp, students were encouraged to present the results through model building, micro-films, and animations so that they could create deep and meaningful memories of this experience. 42 students participated in 2019.

Steel Journey Activity

In mid-May of 2019, CSC assisted the CSC Public Affairs Dept. in organizing a "Steel Journey Activity" and arranged a quiz with prizes. More than 1,400 elementary students participated in this activity. Through guided tours, the students were able to gain further understanding of the steel and slag production processes.

King of Wisdom Summer Camp

In July 2019, in collaboration with the CSC Public Affairs Dept., the "King of Wisdom Summer Camp" was held in The Affiliated Hospitality Senior High School of National Kaohsiung University of Hospitality and Tourism. In addition to environmental education courses, information sessions on slag and quizzes with prizes were also arranged. A total of 100 students from the Hsiao Kang District participated, and some seats were saved for the disadvantaged students.

Environmental Education Tour Bus

CSC's Environmental Education Tour Bus allowed the volunteers to use movable interactive teaching aids to teach young children the practical aspects of topics including energy-saving lamps, dehumidification principle of an air-conditioner, and interactive experiments relating to electricity and magnetism. Animation, videos, and picture books were used to teach school children about carbon footprints, the greenhouse effect, solar energy applications, and the principles of power generation through interactive methods.

The overall curriculum integrates education, ecology, environment and technology. The students were expected to establish concrete concepts on topics like energy-saving and carbon reduction and learn more about popular science. Hopefully, the students will also be able to incorporate the knowledge into daily life, understand the limitedness of resources, and learn to cherish the Earth. The Social Return on Investment (SROI) of CSC's Environmental Education Tour Bus project this year (from February 2019 to January 2020) is excepted to be 1.89 TWD, which means that for every 1 TWD invested, a social value of about 1.89 TWD can be obtained.

In 2019, the "Taiwan's Elementary School at the 5 Poles" was the central idea of event. It was expected to visit the 5 Pole Elementary Schools in Taiwan, symbolizing a tour around Taiwan. From the start of the event to the end of November, the tour reached the most southern point the Kenting Elementary School Cape Elunabi Branch, and the Sianglin Elementary School, which has the highest altitude in Taiwan. A total of 63 activity sessions were completed, nearly 2,000 students participated in. At the same time, new teaching aids related to the CSC Group's industry have been developed continuously to establish the concept of environmental education with CSC's resources.

The Industrial Occupational Safety and Health Simulation Training Course

High school students from the rural areas were invited to participate in the Industrial Occupational Safety and Health Training Course. Using the steel-industry related Scenario Simulation classrooms offered by the CSC, the students gained first-hand knowledge about potential workplace hazards, such as falling heavy objects and elevated operation. This helped raise the awareness of workplace safety among students who needed to use their spare time or summer / winter vacations to work in order to support their families.

Engineers Week (EWeek) - Popular Science Education Activities

The theme of EWeek is "Age of the Creator-What you need to know AI Technology" in 2019. CSC sent 58 volunteers to work with IBM volunteers in order to help the students understand AI and how to build AI learning models, whereby the students can explore their own motivation and preference. In 2019, the National Formosa University P-TECH Vocational Program won the "EWeek National Friendship Tournament," and the Zhongshan Girls High School and the National Kaohsiung University of Science Technology P-TECH Vocational Program won the second and third places respectively.

For more details [Other Non-profit Education Affairs] https://www.csc.com.tw/csc_e/hr/csr/soc/soc.htm

8 Appendix

Appendix 1 GRI Standards Content Index

General Disclosures

GRI Standards	Disclosure		Page	Chapter	Note
GRI 102: General Disclosures 2016	**Organizational Profile**				
	102-1	Name of the organization	1	0.1	
	102-2	Activities, brands, products, and services	40, 43	3.2/3.3	No banned products or services
	102-3	Location of headquarters	2	0.2	
	102-4	Location of operations	2	0.2	
	102-5	Ownership and legal form	2	0.2	
	102-6	Markets served	42	3.2	
	102-7	Scale of the organization	5	0.3.1	
	102-8	Information on employees and other workers	88	6.1	
	102-9	Supply chain	55	4.1	
	102-10	Significant changes to the organization and its supply chain	–	No significant change	
	102-11	Precautionary Principle or approach	33	2.6	
	102-12	External initiatives	14	1.3	
	102-13	Membership of associations	61	4.3	
	Strategy				
	102-14	Statement from senior decision-maker	10	1.1	
	102-15	Key impacts, risks, and opportunities	27, 33	2.1.2/2.6.2	
	Ethics and Integrity				
	102-16	Values, principles, standards, and norms of behavior	13, 31	1.2 / 2.5	
	Governance				
	102-18	Governance structure	28	2.2/2.3/2.4	
	Stakeholder Engagement				
	102-40	List of stakeholder groups	16	1.4	
	102-41	Collective bargaining agreements	98	6.3	
	102-42	Identifying and selecting stakeholders	16	1.4	
	102-43	Approach to stakeholder engagement	16	1.4/1.5	
	102-44	Key topics and concerns raised	16	1.4	
	Reporting Practice				
	102-45	Entities included in the consolidated financial statements	–	2019 Annual Report	
	102-46	Defining report content and topic Boundaries	21	1.5	
	102-47	List of material topics	21	1.5	
	102-48	Restatements of information	–	–	Explanation to all the restatement are denoted in the report.
	102-49	Changes in reporting	21	1.5	
	102-50	Reporting period	1	0.1	2019 calendar year
	102-51	Date of most recent report	–	June 2018	
	102-52	Reporting cycle	–	Annually	
	102-53	Contact point for questions regarding the report	1	0.1	
	102-54	Claims of reporting in accordance with the GRI Standards	1	0.1	
	102-55	GRI Standards content index	114	Appendix 1	
	102-56	External assurance	119	Appendix 2	

Topic-specific Disclosures - Material Topics

GRI Standards	Disclosure		Page	Chapter	Note
Operating Financial Performance					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 37	1.5/3.1	
	103-2	The management approach and its components	37	3.1	
	103-3	Evaluation of the management approach	37	3.1	
GRI 201: Economic Performance 2016	201-1	Direct economic value generated and distributed	38	3.1.2	
	201-4	Financial assistance received from government	40	3.1.3	
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	–	–	No violation
Hazardous Substance Management of Products					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 47	1.5/3.3.3	
	103-2	The management approach and its components	47	3.3.3	
	103-3	Evaluation of the management approach	47	3.3.3	
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	48	3.3.3	100%
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	–	–	No violation
R&D / Product Quality *CSC specific topic					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 43, 45	1.5/3.3.1/3.3.2	
	103-2	The management approach and its components	43, 45	3.3.1/3.3.2	
	103-3	Evaluation of the management approach	43,45	3.3.1/3.3.2	
CSC indicators		The number of patent proposals and patent licensings	44	3.3.1	
		The number of quality improving porjects	46	3.3.2	
Green Product / Business Development *CSC specific topic					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 49	1.5/3.4	
	103-2	The management approach and its components	50, 51	3.4.1/3.4.2	
	103-3	Evaluation of the management approach	49	3.4	
CSC indicators		The sale rate of green product	50	3.4.1	
		The capacity of the solar photovoltaic system	53	3.4.2	
Air Pollutants Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 80	1.5/5.2.4	
	103-2	The management approach and its components	69, 80	5.1/5.2.4	
	103-3	Evaluation of the management approach	79	5.2.4	
GRI 305: Emissions 2016	305-6	Emissions of ozone-depleting substances (ODS)	81	5.2.4	AA 1000 AS Type 2
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	81	5.2.4	
CSC indicators		SOx, NOx and Par. emission intensity (kg / tCS)	79	5.2.4	

GRI Standards	Disclosure		Page	Chapter	Note
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	70	5.1	
Waste Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 62	1.5/4.4	
	103-2	The management approach and its components	62, 69	4.4/5.1	
	103-3	Evaluation of the management approach	62	4.4	
GRI 306: Effluents and Waste 2016	306-2	Waste by type and disposal method	64	4.4	AA 1000 AS Type 2
	306-3	Significant spills	–	–	No violation
	306-4	Transport of hazardous waste	64	4.4	
CSC indicators		The output of waste per unit of crude steel(kg / tCs)	64	4.4	AA 1000 AS Type 2
		The rate of the waste recycled in the plant	64	4.4	
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	–	–	No violation
Energy Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 73	1.5/5.2.2	
	103-2	The management approach and its components	69, 73	5.1/5.2.2	
	103-3	Evaluation of the management approach	73	5.2.2	
GRI 302: Energy 2016	302-1	Energy consumption within the organization	74	5.2.2	
	302-3	Energy intensity	74	5.2.2	
	302-4	Reduction of energy consumption	76	5.2.2	
Water Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 83	1.5/5.2.5	
	103-2	The management approach and its components	83	5.2.5	
	103-3	Evaluation of the management approach	83	5.2.5	
GRI 303: Water and Effluents Management Approach 2018	303-1	Interactions with water as a shared resource	83	5.2.5	
	303-2	Management of water discharge-related impacts	86	5.2.5	
GRI 303: Water and Effluents 2018	303-3	Water withdrawal	85	5.2.5	AA 1000 AS Type 2
	303-4	Water discharge	86	5.2.5	
	303-5	Water consumption	86	5.2.5	
CSC indicators		New water intensity (tonnes water / tCS)	84	5.2.5	
		Production process water recirculation	85	5.2.5	
		Processing water recycling rate (%)	85	5.2.5	
GRI 306: Effluents and Waste 2016	306-1	Water discharge by quality and destination	86	5.2.5	
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	–	–	No violation

GRI Standards	Disclosure		Page	Chapter	Note
GHG Management and Climate Action					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 77	1.5/5.2.3	
	103-2	The management approach and its components	69, 77	5.1/5.2.3	
	103-3	Evaluation of the management approach	77	5.2.3	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	79	5.2.3	
	305-2	Energy indirect (Scope 2) GHG emissions	79	5.2.3	
	305-3	Other indirect (Scope 3) GHG emissions	79	5.2.3	
	305-4	GHG emissions intensity	6, 71	0.3.1/5.2	
Raw Materials Management					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 72	1.5/5.2.1	
	103-2	The management approach and its components	72	5.2.1	
	103-3	Evaluation of the management approach	72	5.2.1	
GRI 301: Materials 2016	301-1	Materials used by weight or volume	72	5.2.1	
Occupational Safety and Health					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 100	1.5/6.4	
	103-2	The management approach and its components	69, 100	5.1/6.4	
	103-3	Evaluation of the management approach	100	6.4	
GRI 403: Occupational Health and Safety Management Approach 2018	403-1	Occupational health and safety management system	101	6.4.1	
	403-2	Hazard identification, risk assessment, and incident investigation	103	6.4.1	
	403-3	Occupational health services	100	6.4	
	403-4	Worker participation, consultation, and communication on occupational health and safety	101, 58	6.4.1/4.1.4	
	403-5	Worker training on occupational health and safety	102, 58	6.4.1/4.1.4	
GRI 403: Occupational Health and Safety 2018	403-6	Promotion of worker health	105	6.4.2	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	103, 56	6.4/4.1.4	
	403-8	Workers covered by an occupational health and safety management system	69, 101	5.1/6.4.1	
	403-9	Work-related injuries	104	6.4.1	
	403-10	Work-related ill health	103	6.4.1	
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	104	6.4.1	
Talent Recruitment and Retention					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 88	1.5/6.1	
	103-2	The management approach and its components	88	6.1	
	103-3	Evaluation of the management approach	88	6.1	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	89, 90	6.1	
	401-3	Parental leave	91	6.1.2	
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	29 ,89	2.3/6.1	

GRI Standards	Disclosure		Page	Chapter	Note
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	88, 97	6.1/6.3	
GRI 408: Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	88, 57	6.1/4.1.4	Prohibition of child labor
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	–	–	No violation
Labor / Management Relations					
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	24, 97	1.5/6.3	
	103-2	The management approach and its components	97	6.3	
	103-3	Evaluation of the management approach	97	6.3	
GRI 402: Labor / Management Relations 2016	402-1	Minimum notice periods regarding operational changes	90	6.1.2	
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	–	–	0
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	57	4.1.4	No violation
GRI 412: Human Rights Assessment 2016	412-2	Employee training on human rights policies or procedures	97	6.3	
GRI 419: Socioeconomic Compliance 2016	419-1	Non-compliance with laws and regulations in the social and economic area	–	–	No violation

Non-material Topics

GRI Standards	Disclosure		Page	Chapter	Note
GRI 410: Security Practices 2016	410-1	Security personnel trained in human rights policies or procedures	56	4.1.3	100%
GRI 411: Rights of Indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples	–	–	No violation
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	70, 109	5.1/7.2.1	
GRI 415: Public Policy 2016	415-1	Political contributions	31	2.5.1	Prohibition of political donations

Appendix 2 Assurance Statement

INDEPENDENT ASSURANCE OPINION STATEMENT

China Steel Corporation 2019 Corporate Social Responsibility Report

The British Standards Institution is independent to China Steel Corporation (hereafter referred to as CSC in this statement) and has no financial interest in the operation of CSC other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of CSC only for the purposes of assuring its statements relating to its corporate social responsibility (CSR), more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by CSC. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to CSC only.

Scope

The scope of engagement agreed upon with CSC includes the followings:

1. The assurance scope is consistent with the description of China Steel Corporation 2019 Corporate Social Responsibility Report.
2. The evaluation of the nature and extent of the CSC's adherence to AA1000 AccountAbility Principles (2018) in this report as conducted in accordance with type 1/ type 2 of AA1000AS (2008) with 2018 Addendum sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process expect for data relating waste management, air pollutants and water topics.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the CSC 2019 Corporate Social Responsibility Report provides a fair view of the CSC CSR programmes and performances during 2019. The CSR report subject to assurance is free from material misstatement and its data relating waste management, air pollutants and water topics is materially correct without voluntary omissions based upon testing within the limitations of the scope of the assurance, the information and data provided by the CSC and the sample taken. We believe that the 2019 economic, social and environmental performance information are fairly represented. The CSR performance information disclosed in the report demonstrate CSC's efforts recognized by its stakeholders.

Our work was carried out by a team of CSR report assurors in accordance with the AA1000AS (2008) with 2018 Addendum. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that CSC's description of their approach to AA1000AS (2008) with 2018 Addendum and their self-declaration in accordance with GRI Standards: Core option were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a top level review of issues raised by external parties that could be relevant to CSC's policies to provide a check on the appropriateness of statements made in the report
- discussion with managers on approach to stakeholder engagement. However, we had no direct contact with external stakeholders
- interviews with 15 staffs involved in sustainability management, report preparation and provision of report information were carried out
- review of key organizational developments
- review of the extent and maturity of the relevant accounting systems for financial and non-financial reports relating waste management, air pollutants and water topics
- review of the findings of internal audits
- the verification of performance data and claims made in the report through meeting with managers responsible for gathering data relating waste management, air pollutants and water topics
- review of the processes for gathering and ensuring the accuracy of data, followed data trails to initial aggregated source and checked sample data relating waste management, air pollutants and water topics to greater depth during site visits
- consolidated financial data are based on audited financial data relating waste management, air pollutants and water topics, we checked that this data was consistently reproduced
- review of supporting evidence relating waste management, air pollutants and water topics for claims made in the reports
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018)

Conclusions

A detailed review against the Inclusivity, Materiality, Responsiveness and Impact of AA1000AP (2018) and sustainability performance information as well as GRI Standards is set out below:

Inclusivity

This report has reflected a fact that CSC has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for economic, social and environmental information in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the CSC's inclusivity issues.

Materiality

CSC has established relative procedure in organization level, as the issues which were identified by all departments have been prioritized according to the extent of impact and applicable criterion for sustainable development of organization. Therefore, material issues were completely analyzed and the relative information of sustainable development was disclosed to enable its stakeholders to make informed judgments about the organization's management and performance. In our professional opinion the report covers the CSC's material issues.

Responsiveness

CSC has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for CSC is developed and continually provides the opportunity to further enhance CSC's responsiveness to stakeholder concerns. Topics that stakeholder concern about have been responded timely. In our professional opinion the report covers the CSC's responsiveness issues.

Impact

CSC has Identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. CSC has established processes to monitor, measure, evaluate and manage impacts that lead to more effective decision-making and results-based management within the organization. In our professional opinion the report covers the CSC's impact issues.

Performance information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, CSC and BSI have agreed upon to include in the scope. In our view, the data and information relating waste management, air pollutants and water topics contained within 2019 CSC Corporate Social Responsibility Report are reliable based on procedures undertaken by means of vouching, re-tracking, re-computing and confirmation.

GRI Sustainability Reporting Standards (GRI Standards)

CSC provided us with their self-declaration of in accordance with GRI Standards: Core option (For each material topic covered by a topic-specific GRI Standard, comply with all reporting requirements for at least one topic-specific disclosure). Based on our review, we confirm that social responsibility and sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the CSC's social responsibility and sustainability topics.

Assurance level

The moderate and partial high level assurance provided is in accordance with AA1000AS (2008) with 2018 Addendum in our review, as defined by the scope and methodology described in this statement.

Responsibility

The CSR report is the responsibility of the CSC's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence

The assurance team was composed of Lead auditors experienced in relevant sectors, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

For and on behalf of BSI:

Peter Pu, Managing Director BSI Taiwan

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