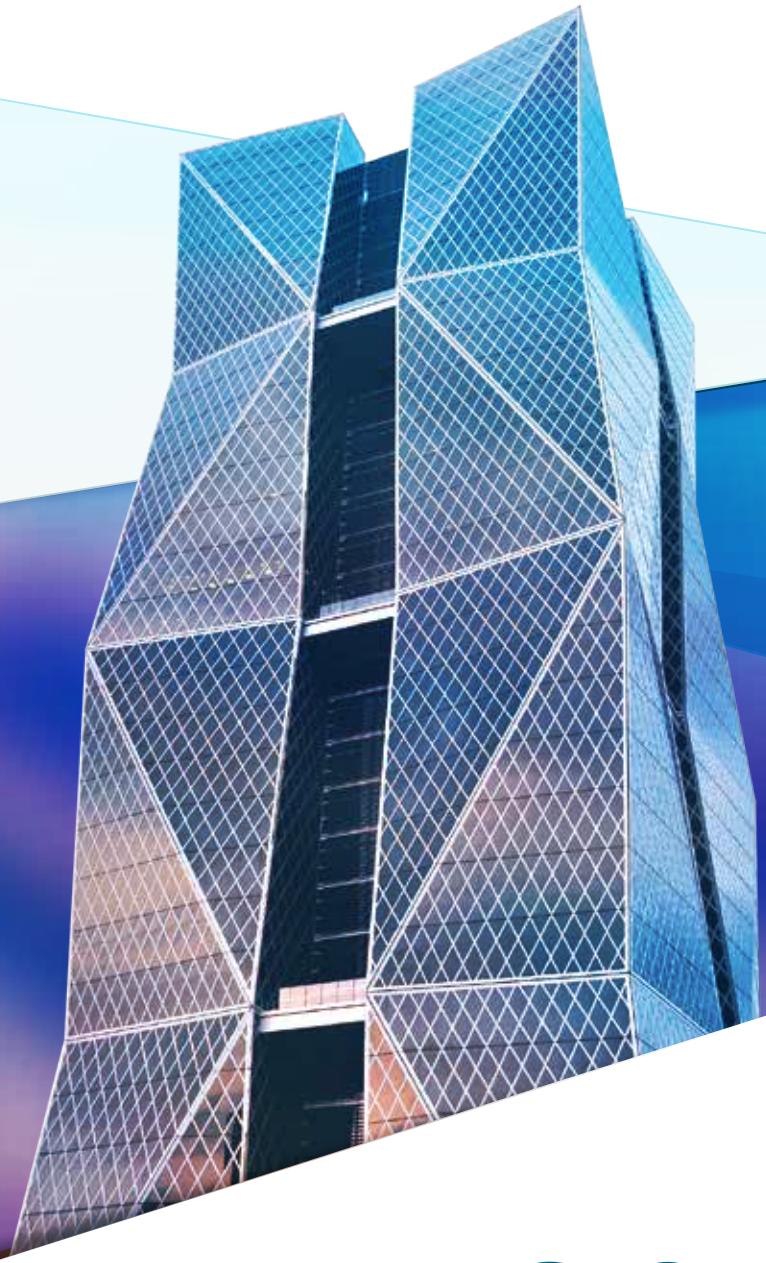
CHINA STEEL



2016

CORPORATE SUSTAINABILITY REPORT

CONTENTS

7.Partner

8.Employees

9.Society

10.Appendix

CHINA STEEL

1.1 Message from Top Management

Chairman

Chao-Tung Wong

The economic condition was tough for the steel industry in Q1 2016 and improved from Q2. Although the raw material prices went up in Q4, with the endeavors of the management team and all employees, the net profit was 18.0 billion NTD for China Steel Corporation (CSC) and 21.8 billion NTD for the CSC Group, a 117% and 130% growth compared to that of last year.

In social responsibility and sustainability, CSC achieved concrete results in water resource conservation, solar energy development, fugitive dust emission control, and promotion of basic oxygen furnace (BOF) slag.

Water Resource Conservation

CSC has been awarded 14 times by the Ministry of Economic Affairs for outstanding performances in water saving. Supporting the municipal wastewater reclamation policy of the government, CSC signed a purchase contract for reclaimed water. When the second phase of the Fengshan Sewage Treatment Plant water reclamation project is complete in 2019, it will supply 44,000 tons of reclaimed water to CSC daily and lower CSC' s fresh water intensity to 3.4 t/tCS. To use the reclaimed water as process water, CSC has planned to invest 260 million NTD to separate the supply system of municipal water from process water.

Solar Energy Development

CSC has installed 1.02 MW PV systems in plant. In 2016, CSC established CSC Solar Corp. on Sep. 30 with 4.36 billion NTD investment from the CSC Group. CSC Solar Corp. will install rooftop PV systems in the plants of CSC Group companies to achieve 80 MW of capacity in three years with 102 million kWh annual power generation.

Fugitive Dust Emission Control

CSC invested 170 million NTD in 2016 to install 650 meter-long dust suppression walls. It is under construction since Dec. 2016 and will be complete by May 2018. When the construction is complete, the suppression efficiency will be raised from the current 96%.

Promotion of BOF Slag

In addition to research and development in BOF slag modification, CSC launched a project to expand the application of BOF slag. Taskforces are set up for laws and regulations, technology, production, market development, communications, and engineering. By integrating cross-division and cross-company resources of the CSC Group, CSC aims to make BOF slag an important material for public construction.

In the Cheers Magazine "Most Attractive Companies for the Young Generation," CSC is the seventh in the overall ranking, moving up from the tenth in 2016, and the first in the traditional industry sector. This shows that CSC is not only a happy enterprise in the public eye but also one of the most attractive enterprises for the young generation.

Looking ahead for 2017, the steel market outlook is optimistic on a cautious basis. For continual growth, CSC has set up strategies in succession of manpower, advancement of the steel business, enhancement of the synergy of the CSC Group, and promotion of BOF slag application. We promise to continuously fulfill corporate social responsibilities, advocate circular economy, and create a sustainably developing society.

President

Jih-Gang Liu

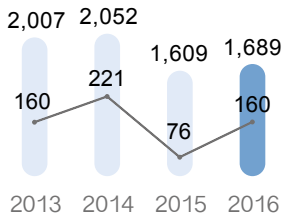
1.2 Sustainability Performance Overview

Economy Environment Society

Revenues & Net Profit

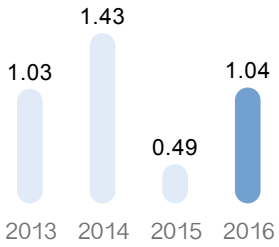
Revenues Net Profit

(100 MM NTD)



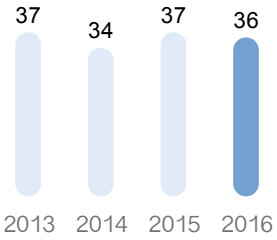
EPS

(NTD)



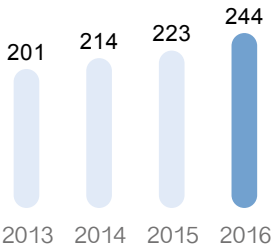
Liabilities to Assets Ratio

(%)



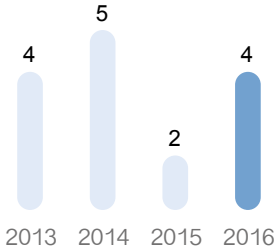
Long-Term Capital to Fixed Assets Ratio

(%)



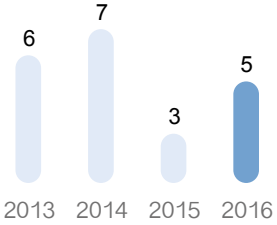
Return of Assets

(%)



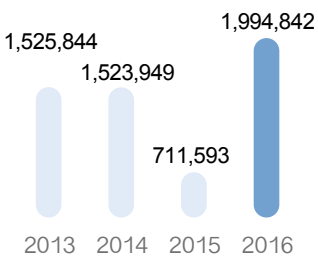
Return on Equity

(%)



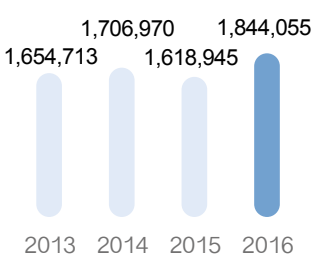
Income Tax

(k NTD)



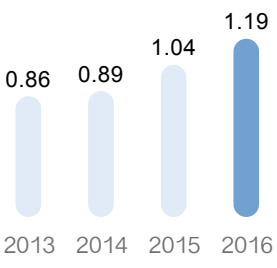
R&D Expense

(k NTD)



R&D Expense Ratio

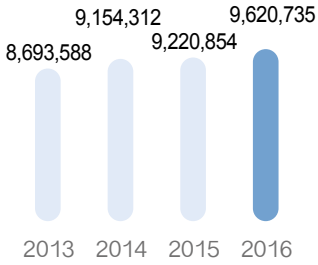
(%)



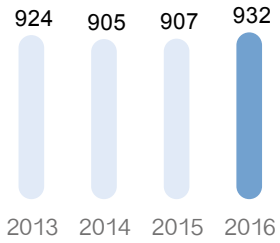
MM: million; k: 1,000; tCS: ton Crude Steel

Economy Environment Society

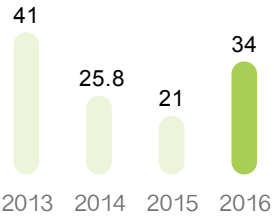
Production
(tCS)



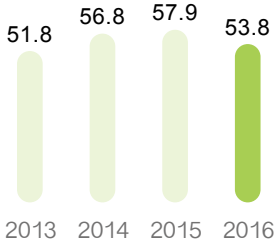
Productivity
(tCS/man-year)



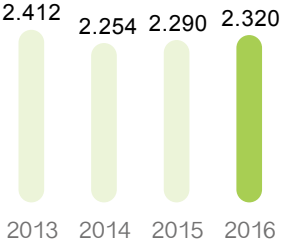
Environmental Investment
(100 MM NTD)



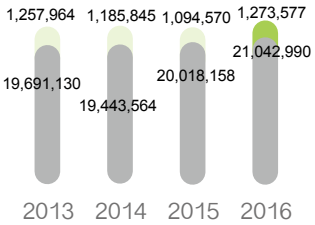
Self-generated Electricity
(%)



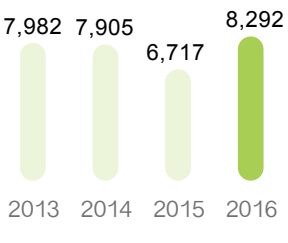
GHGs Intensity
(tCO_2e /tCS)



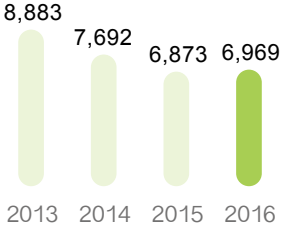
GHG Emission
Scope 1
Scope 2 (tCO_2e)



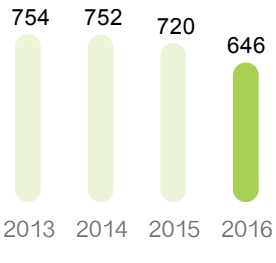
NOx Emission
(ton)



SOx Emission
(ton)



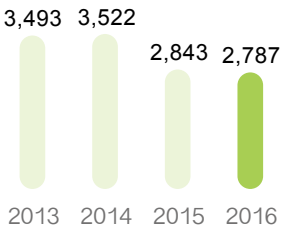
VOCs Emission
(ton)



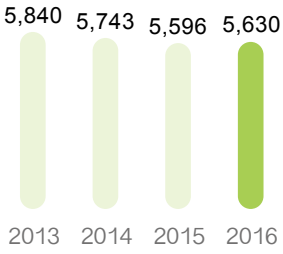
tCO_2e: ton CO_2 equivalent

Economy Environment Society

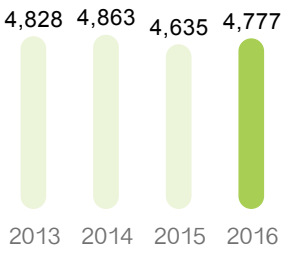
Particulate Emission
(ton)



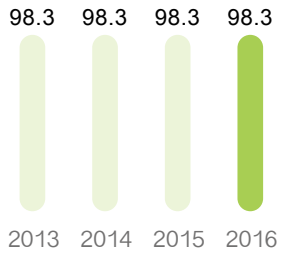
Energy Intensity
(Mcal/tCS)



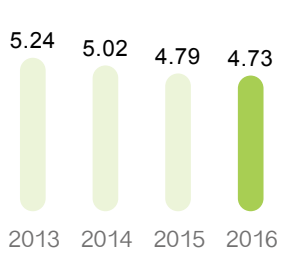
Raw Water Usage
(10 k ton)



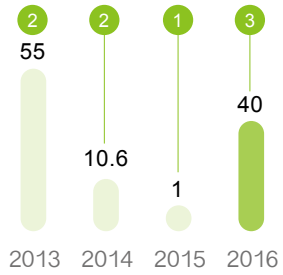
Water Recycling Rate
(%)



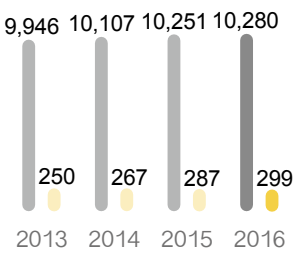
Water Intensity
(t/tCS)
(Steam output excluded)



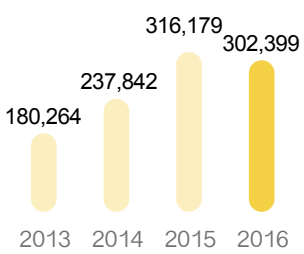
Environmental Violation Notices



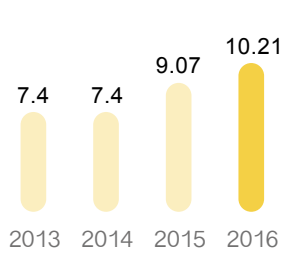
Number of Employees
(Persons) Female



Total Training Hours

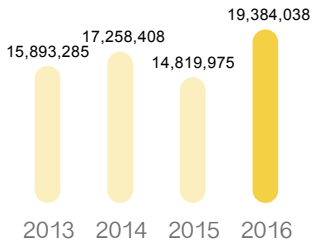


Training Expense
(10 MM NTD)

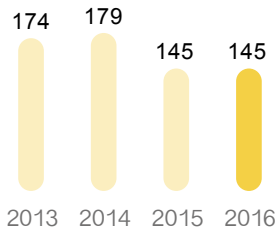


Economy Environment Society

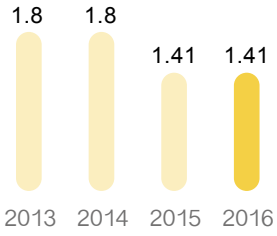
Salaries and Welfare
(k NTD)



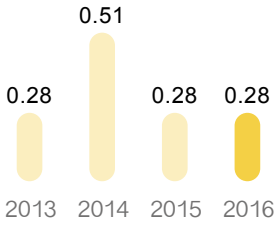
Disabled Hires
(Persons)



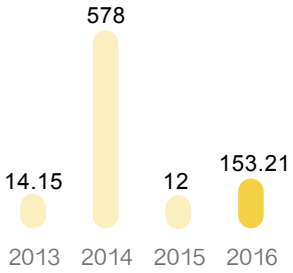
Disabled Hires Ratio
(%)



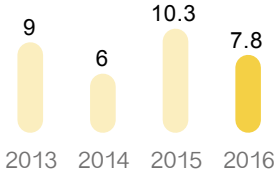
Disability Frequency
(Incidents / MM working hours)



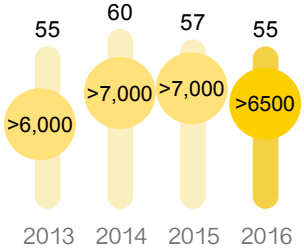
Disability Severity
(Lost days / MM working hours)



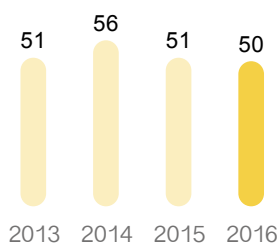
Social Expense
(including donation)
(10 MM NTD)



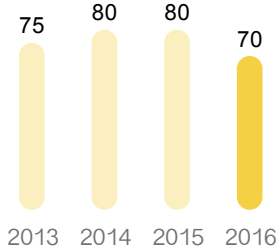
Environmental Education Bus Activities
Participants Sessions



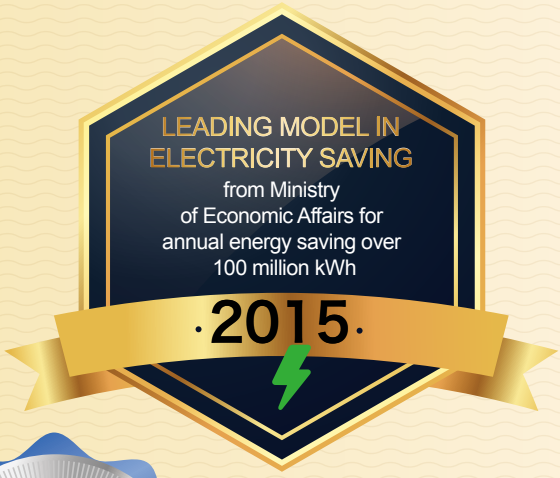
Environmental Education Bus Activities
(Schools)



CSC Group Edu. Fdn. Manpower
(Persons)



1.3 Awards



CommonWealth Magazine

- “Authorized Economic Operator” (AEO) from Customs Administration, Ministry of Finance
- “2016 Golden Trade Award” from Ministry of Economic Affairs
- Two silver awards for 2016 Innovation Awards from Intellectual Property Office, Ministry of Economic Affairs
- “2016 Outstanding Energy-saving Achievements Award” from Ministry of Economic Affairs
- “2016 Oustanding Water Conservation Achievements Award” in industrial group from Ministry of Economic Affairs
- “Enterprise Vision Award” from Ministry of Economic Affairs for annual subscription of green power 1.5 million kWh in 2016
- “Exercise Enterprise Certification Award” from Ministry of Education
- “2016 Outstanding Water Environment Patrol” from Kaohsiung City Environmental Protection Bureau
- 2016 Taipower Demand Bidding Measures “King of Auction” Special Award

Dow Jones Sustainability Indices

In 2016, Dow Jones Sustainability Indices (DJSI) selected 464 enterprises among global enterprises as components of DJSI-World and 58 enterprises as components of DJSI-Emerging Markets. In 2012, CSC participated in the Corporate Sustainability Assessment of DJSI for the first time and was selected for inclusion in the DJSI-Asia Pacific and DJSI-Emerging Markets. In 2013, CSC was industrial leader for DJSI-World. In 2014 and 2015, CSC was included as a component in the DJSI–World and DJSI–Emerging Markets and received Silver Class Sustainability Award 2016 from RobecoSAM. In 2016, CSC was included as a component in the DJSI–Emerging Markets and received Silver Class Sustainability Award 2017 from RobecoSAM.

Taiwan Corporate Sustainability Award

MEMBER OF
Dow Jones
Sustainability Indices
In Collaboration with RobecoSAM

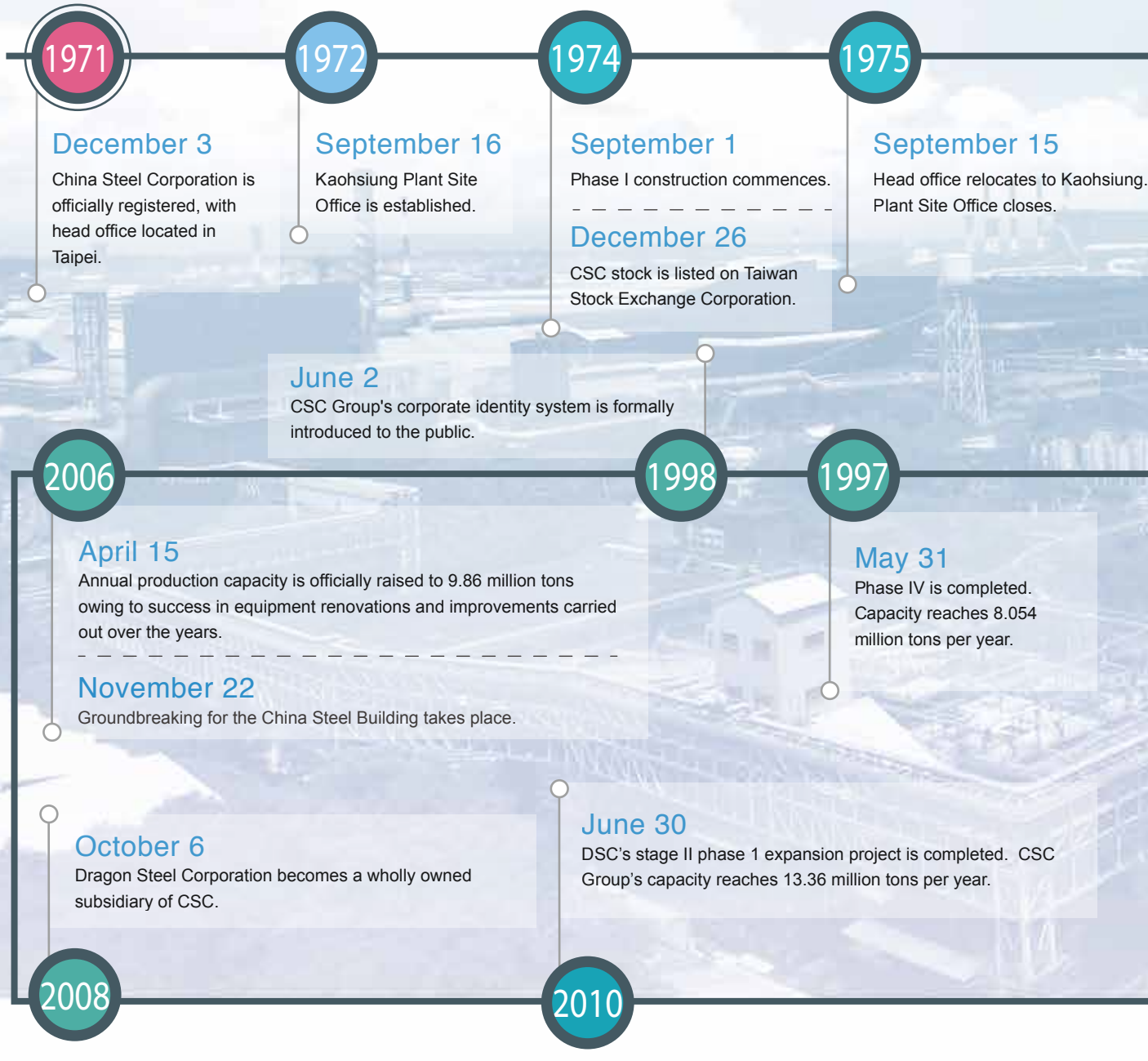
ROBECOSAM
Sustainability Award
Silver Class 2017

2016 BSI Award for Model of Sustainability for Business Group

1.4 About CSC

1.4.1 Chronicle

China Steel Corporation (CSC), located at Kaohsiung, Taiwan, was founded in December 1971. With annual production (in terms of crude steel) around 10 million tonnes, CSC produces a range of products that includes plates, bars, wire rods, hot and cold rolled coils, electrogalvanized coils, electrical steel coils, hot-dip galvanized coils, and Ti/Ni-base alloy. The domestic market takes roughly 69% of CSC's production and the exports take the remaining 31%. CSC is the largest steel company in Taiwan, enjoying more than 50% of the domestic market. Major export destinations are Mainland China, Japan and Southeast Asia.



1977

July 1
CSC becomes a state enterprise.

December 16
Phase I is completed, with capacity of 1.5 million tons per year.

1978

July 1
Phase II construction commences.

1982

June 30
Phase II is completed. Capacity reaches 3.25 million tons per year.

1984

July 1
Phase III construction commences.

1988

April 30
Phase III is completed. Capacity reaches 5.652 million tons per year.

1993

July 15
Phase IV construction commences.

1995

April 12
CSC is privatized.

2013

March 5
DSC's stage II phase 2 expansion project is completed. CSC Group's capacity reaches 15.86 million tons per year.

October 22
China Steel Building is inaugurated.

1.4.2 CSC's Corporate Culture

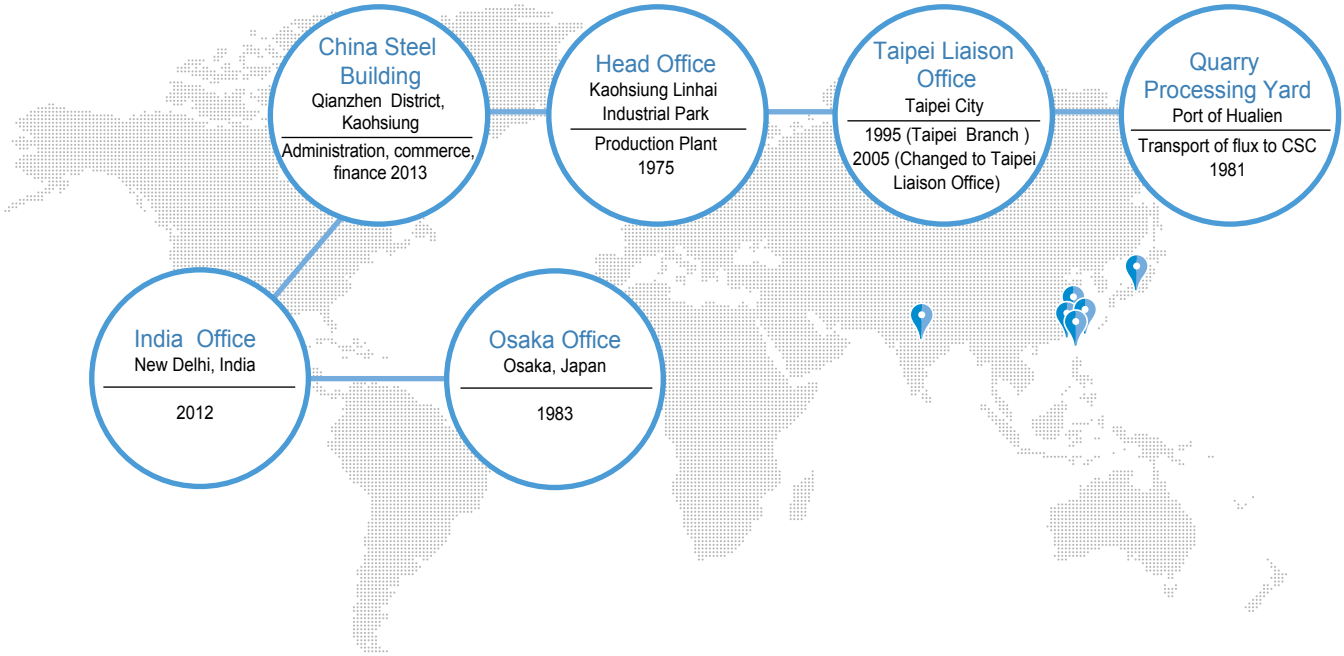
CSC holds its values of teamwork, entrepreneurial approach, down-to-earthness, and pursuit of innovation. The CSC Corporate Culture Committee meeting is held every four months. Under the committee are three sections, namely, the corporate culture enhancement section, the corporate culture, education and promotion section, and the corporate culture advancement section. Each section's convener is assigned by the chairman of the Committee. During the two sessions of the Committee, members of the three sections convene one or two panel meetings separately. After the consensus reached on the focus of the panel meeting, the proposal is brought to the attention of the Committee.

In order to promote CSC Corporate Culture, there is a CSC Corporate Culture website on the CSC Enterprise Information Portal (EIP) for employees of the CSC group to browse. Key tasks and results in 2016 include the convening of committee meetings, enriching the CSC corporate culture website information, holding management programs for middle-ranking executives, holding art and management seminars for the Group's executives, and holding CSC Corporate Culture Course for new recruits. To pass down CSC corporate culture, to enhance the teamwork environment, organizational vitality, and colleagues centripetal force, employees are informed to obey the guidelines for accepting gifts, treats, entertainment and banquets, and lobbying.

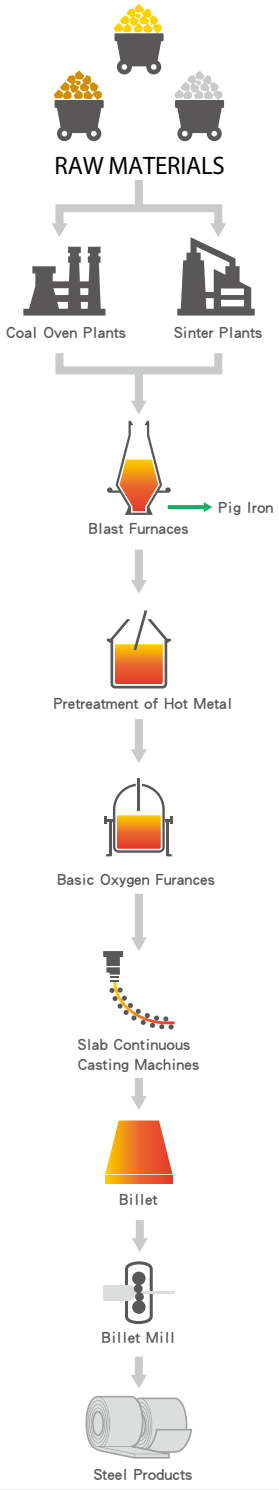
1.4.3. Business and Scale

CSC is a global steel corporation with annual production (in terms of crude steel) around 10 million tonnes. According to the report published by World Steel Association (worldsteel), CSC was ranked the 23th among all worldsteel members in terms of crude steel production in 2015. CSC was also ranked the 11th in total 37 tier I steel corporations in the world, via evaluating the factors like expanding capacity, downstream business and so on, by World Steel Dynamics (WSD) in June 2016.

CSC produces a range of products including plates, bars, wire rods, hot and cold rolled coils, electrogalvanized coils, electrical steel coils, and hot-dip galvanized coils. The domestic market takes roughly 69% of CSC's production and the exports take the remaining 31%. CSC is the largest steel company in Taiwan, enjoying more than 50% of the domestic market. In order to enhance its operational synergy, CSC has diversified its businesses in five business areas: steel, engineering and construction, industrial materials, logistics, and services & investments.



1.4.4 Production Work Flow



RAW MATERIALS

IRON MAKING

STEEL MAKING

ROLLING

PROUDUCTS

Coke Oven Plant

The sintering process is the combination of the blended ore. flux, coke breeze, after mixing and granulation, then charged into the sintering machine and completed the sintering process by the suction fan. then through cooling and screening process, the product of sinter wril be transported to BF as the main source of iron-contained material.

Sinter Plant

The coke oven operation is one of the coking process. The mixing and crushing coking coals are charged to the coke oven, and dry distillation in oven produce hot coke and crude COG.

Blast Furnace

The blast furnace operation is one of iron-making processes. Iron ores, cokes and fluxes are charged from furnace top. then to react with the ascending gas which is introduced from tuyeres, as a result to produce the molten hot metal and slag.

Blast Oxygen Furnace

Hot metal is treated by de-S or de-P process at pretreatment station first then transported to BOF for oxygen blowing, and after tapping to ladle, liquid steel is further refined at LI (ladle Injection). RH (vacuum treatment) . VOD or STN (stirring station): refined liquid steel then sent to SCC or BCC for casting to slab or bloom semi-product, finally this semiproduct is inspected or grinded, or scarfed to remove surface defects, then shifted to downstream for rolling.

Continuous Casting

Continuous casting is a process which turns liquid steel into slab or bloom. Liquid steel is filled in ladle and transferred to turret from upstream plant by crane, charged to a tundish. then distributed and ftew into several molds which circulated by cooling water. Liquid steel starts cooling down, solidifying and forming a shell outside in. pulled into arc-shape strands, through secondary cooling sprays to a complete solidification, then straightened, and cut into pieces according to each order. This semi product called slab (rectangular type) or bloom (square type) is conditioned if necessary then shipped to downstream for further treatment.

Steel Rolling

Using casting blooms then go by way of reheating descaling scarfing rolling and cutting into 118mm square billets. 60% billets must be inspected and removed the surface defects. Supplying these billets to bar & rod mill to produce wire rod coil and straight bar products.

2.1 Editing Principles

Editing and Approval

CSC compiled and edited the 2016 CSR Report through the following organizations and procedures.

CSR Core Working Group

Members of the group included those from the Human Resources Department, Public Affairs Department, Marketing Administration Department, Finance Department, Secretariat Department, Industrial Safety and Hygiene Department, Environmental Protection Department, Utilities Department, Iron and Steel R&D Department, and CSC Labor Union. The Office of Energy and Environmental Affairs (EA) was in charge of overall planning, compiling, coordinating, and editing.

Administrative Review and Approval

The initial draft was compiled and edited by EA and reviewed by the CSR Core Working Group. The revised draft was then reviewed by Division VPs. The VP approved version went through an administrative procedure to Chairman of the Board to be finalized and approved for publishing.

Basis and Structure

Guideline and Principles

This report follows the Global Reporting Initiative (GRI) G4 Guidelines and Mining and Metals Sector Supplement and the AA1000 AccountAbility Principles Standard. It also references the Organization for Economic Cooperation and Development (OECD), Earth Charter, UN Global Compact (UNGC), UN Sustainable Development Goals (SDGs), ISO 26000, and general disclosure of the steel industry.

Data Sources and Management

Data and information were provided by CSC Departments in Planning, Commercial, Finance, Administration, Production, and Technology Divisions, compiled by EA, and confirmed for the functions of this report by the CSR Core Working Group and through administrative procedures. Costs and accounting information in this report were audited by independent accounting firm; the environment, safety, and health (ESH) management system was subject to internal audits and annual external ISO 14001 and OHSAS 18001 audits; GHG inventory reports were verified by third-party auditors according to ISO 14064-3; the ISO 50001 energy management system was verified with certification.

2.2 Range of Data

This report covers relevant operational systems and activities of CSC headquarter in Taiwan and its overseas offices from 1 Jan. to 31 Dec. 2016, not including operational performances of CSC Group affiliates. The currency used is New Taiwan Dollars (NTD) and ESH performances are presented in indicators that are in common use globally.

2.3 Assurance

Internal Review and Approval

The data and information were approved by Department Directors before provided. The initial draft was first confirmed by the CSR Core Working Group and then reviewed by Division VPs, Executive VP, President, and finally approved by Chairman of the Board. All data, minutes, reviews, and verifications were documented.

External Assurance

The 2016 CSR Report was assured by the independent third-party British Standards Institution (BSI) in accordance with the core option of GRI G4 Guidelines and type 1 AA1000 Assurance Standard.

2.4 Previous Reports

CSC started publishing environmental reports in 2002. Later reports were variously named as they were wider in scope, yet they were all centered on corporate social responsibility and sustainability. Since 2010, reports have been published annually and have followed GRI Guidelines. In 2012, the CSC CSR website was launched for more complete reporting. The reports in Chinese have been named "Corporate Social Responsibility Report" since 2014 as by Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE (Taiwan Stock Exchange) Listed Companies.

More information is available on the CSC CSR website at http://www.csc.com.tw/csc_e/hr/csr/index.htm

Download PDF file of this report at http://www.csc.com.tw/csc_e/hr/e/hr-2016e.pdf

Contact us if you have any comments or questions regarding this report:

Office of Energy and Environmental Affairs, CSC

182634@mail.csc.com.tw

3.1 Sustainable Governance

3.1.1 Vision and Directives

CSC draws its short-, mid- and long-term strategies based on its vision: "We aspire to be a trustworthy steel company of global distinction that pursues growth, environmental protection, energy saving, and value innovation." for the sustainable development. Furthermore, CSC, with new technologies and new management schemes, focuses on the endeavors in:

(1) Proactively fulfilling its values of "teamwork, entrepreneurial approach, down-to-earth nature and pursuit of innovation,"

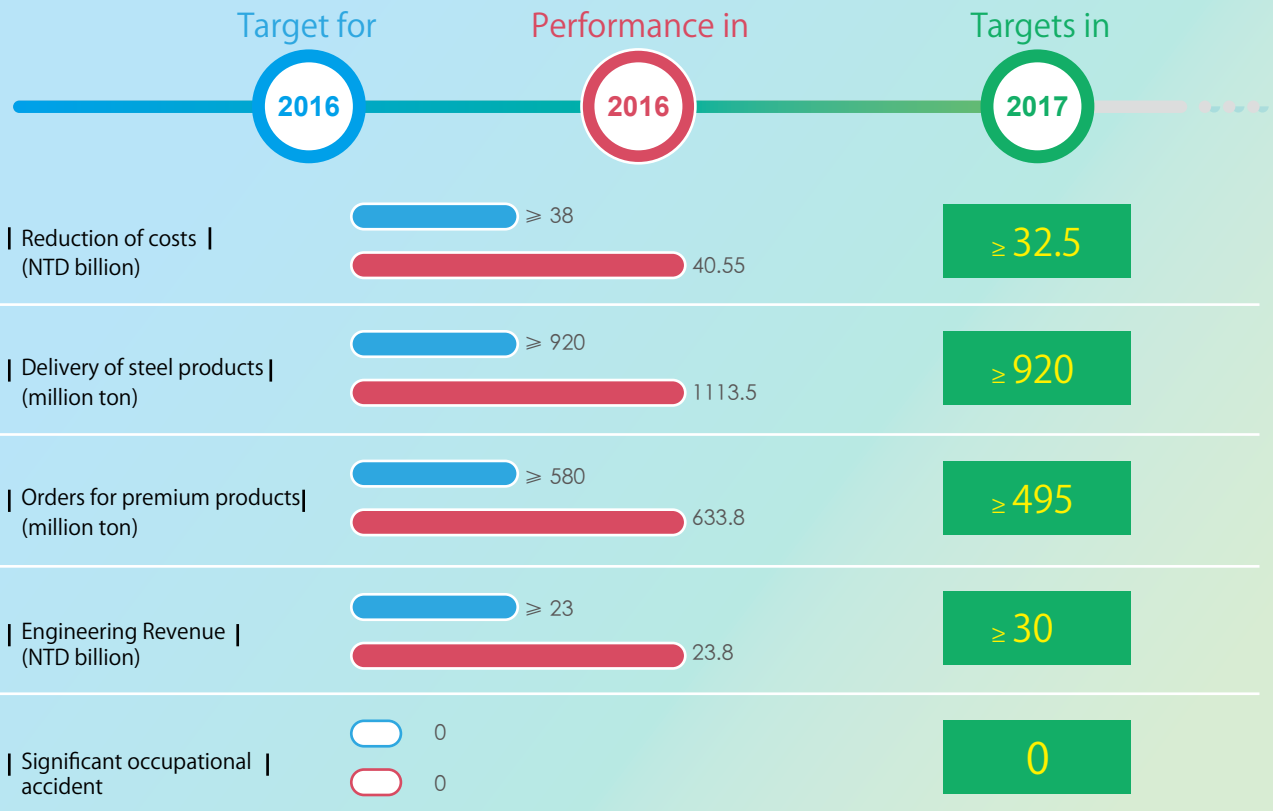
(2) Deeply rooting its core businesses in steel by new technologies and new thoughts of management, insisting on honest and fair norms,

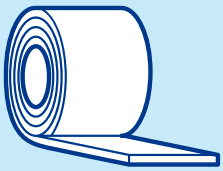
(3) Insisting on honest and fair norms, and

(4) Striding forward to the sustainable development with CSC Group's position as "Bases its headquarters in Taiwan, centers its development in Asia and categorizes the businesses of steels and materials, engineering and services, mines and resources with philosophies of environmental protection and energy saving."

Because of China's capacity reduction in the steel industry, global steel market woke up from recession. Through cost reduction and promote added-value of products, CSC enhanced its own competitiveness by strengthen the competitiveness of the whole steel industry supply chain with technical services for upstream and downstream and creating effective variation for its products.

Performances in 2016 and Targets for 2017





2017～2021

2017-2021 operation and development strategies in the steel business

1. To improve customer lean service, strengthen strategic partnerships, solidify domestic market and expand sales channels of export;
2. To pass down corporate culture, implement career planning, create LOHAS environment and promote image of CSC Group;
3. To research and develop advanced products, materials for defensive, applied technology and green processes for increasing chain value of steel industry;
4. To integrate resources of CSC Group, map out green industries, investigate in deep-processing fields and increase self-sufficiency ratio of raw materials;
5. To expand supply of CSC Group's products, reduce cost continuously, elaborate on energy saving and environmental protection, strengthen occupational safety and health, and increase industry chain value with intelligent manufacturing and improving services of industry 4.0.
6. To enhance engineering capabilities of CSC Group, develop green and rail businesses carefully, and expand engineering business proactively;

Executive Results of 2016 / Performance in 2016 / Directives of 2017

Diversified planning to boost profits:

Distribution channels were explored proactively to secure customers and establish stable sales channels. The output of steel products in 2016 reached 11.13 million metric tons.

Reaching the summit with production and sales of a modular structured smart factory.

Advancement of the steel business by reducing costs:

The development of high-grade and strategic steel products was continued. The orders for high-grade steel products amounted to 6.338 million metric tons, which translated to 56.04% of the total orders. Furthermore, various enhancement projects were carried out to control costs. The cost reduction campaign was a major measure in response to the current operating environment. A total of NTD 4.05 billion was saved in 2016, reaching the annual target of 107%.

Creation of a comparative advantage by increasing profits and cutting expenses.

Formation of industrial alliances to strengthen competitiveness:

Technological R&D was focused to expedite the development of strategic steel products, enhance the comparative advantage of product differentiation, and strengthen CSC's capabilities in the special alloy industry and the overall competitiveness of the upstream and downstream steel industry chain.

Succession of innovation to make a brand new start.

Being powerful in the light rail and wind power industries by integrating CSC's engineering capabilities:

The project of the Danhai Light Rail Transit System, the Project of the Circular Line (KMRT), and the Ankeng Light Rail Project would be expanded. The formation of the alliance of the domestically produced offshore turbine components was completed.

Increasing value of the light rail and wind power businesses.

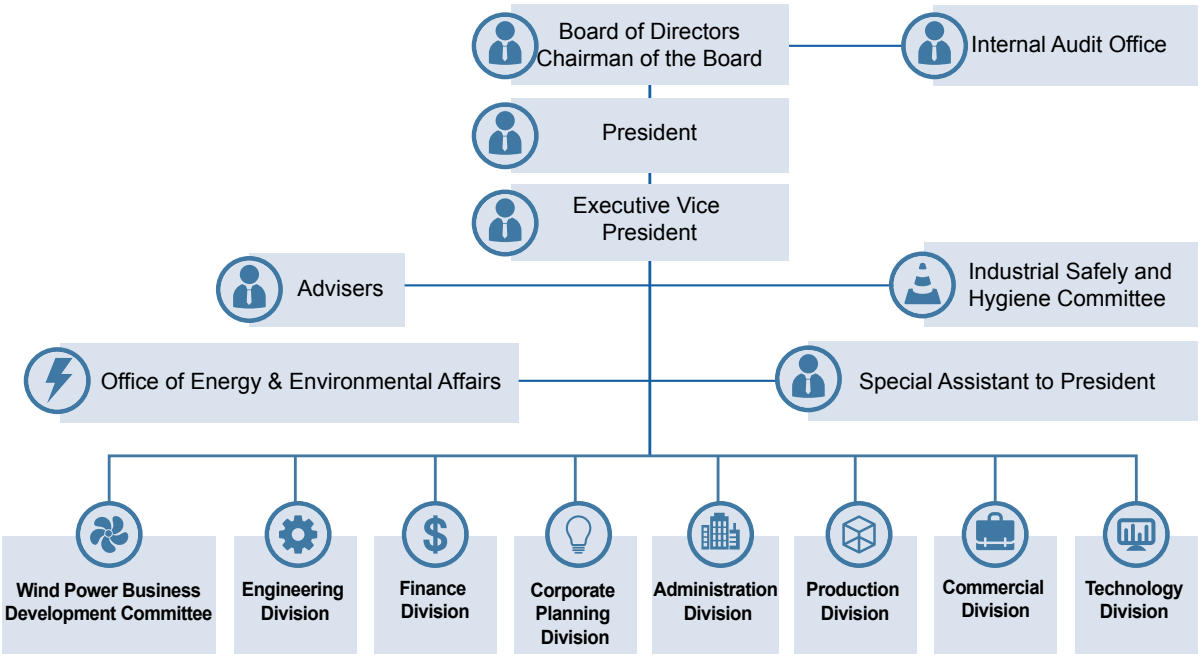
3.1.2 Respond to Major Impacts

After a lackluster outturn in 2016, economic activity is projected to pick up pace in 2017. Global activity could accelerate more strongly if policy stimulus turns out to be larger than currently projected in the United States or China. Notable negative risks to activity include a possible shift toward inward-looking policy platforms and protectionism, a sharper than expected tightening in global financial conditions that could interact with balance sheet weaknesses in parts of the euro area and in some emerging market economies, increased geopolitical tensions, and a more severe slowdown in China.

Crude oil prices bottomed out, the dollar fell, iron ore, coking coal and other steel raw material prices rebounded sharply, steel mills operating and production costs pressure increased. The protectionism burns hot, oversupply capacity and high yields of production have exerted enormous pressure on the steel market. The favorable factor is the steady growth of the downstream industry demand, filling up supply-demand gap, supporting the steel industry boom. For the sales target for 2016, CSC is set to increase orders by establishing marketing channels, increasing overseas sales spots, and stabilizing customer relations. For increasing orders of high end products, CSC continues to strengthen customer relations, increase the supply of high-end and strategic steel products, dislodge production equipment bottlenecks, increase new equipment, and replace old equipment.

Potential Major Impacts		CSC Countermeasures
① Steel capacity exceeds the demand in global markets.	>	Setting production bases, sale spots and coil centers in regional economic cooperation systems.
② International trade protectionism keeps happening all over the world: Europe, America, China, and emerging economics take the measures of anti-dumping, anti-subsidies, importing safeguards to limit the imports of steel products, which is unfavorable for domestic steel mills to expand export markets.	>	· Actively developing emerging markets with explosive growth such as India and others. · 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, electric motors, and so on.
③ 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.
④ China has changed into a net-export nation in steel. The global steel trade is filled with pressure.	>	Exporting high value-added and niche steel products.
⑤ Free Trade Agreement (FTA) of other countries and FTA between China and South Korea will affect the export competitiveness of Taiwan.	>	Assisting the government in FTA promotion.
⑥ BOF resource access pathway blocked.		Enhance Self-management and control flow of BOF slag resource utilization, and reverse the misunderstanding of BOF slag from community to reduce the enterprise's impact.

3.1.3 Organization Chart



3.1.4 Board of Directors

According to Company Act and CSC's regulations, independent and non-independent directors are nominated and elected separately. There are currently 11 directors in the Board of Directors, of whom 3 are independent directors, 10 are male directors and 1 female director. The ages of directors are between 51 and 72.

Title	Name	Title	Name
Chairman	Chao-Tung Wong	Director	Shyi-Chin Wang
Director	Jong-Chin Shen	Director	Horng-Nan Lin
Director	Feng-Sheng Wu	Director	Cheng-I Weng
Director	Jih-Gang Liu	Director	Chao-Chin Wei

Title	Name	Major Education and Current Position
Independent Director	Min-Hsiung Hon	• Ph.D. in Materials Science and Engineering, North Carolina State University, Raleigh, U.S.A. • Emeritus Chair Professor, Department of Materials Science and Engineering, National Cheng Kung University
Independent Director	Shyue-Bin Chang	• Ph.D.in Mechanical and Aerospace Engineering, Cornell University, U.S.A. • Chair Professor, Dean of College of Mechatronic Engineering, and Dean of College of Informatics, Kao Yuan University
Independent Director	Lan-Feng Kao	• Ph.D. in Accounting, National Cheng Kung University • Professor, Department of Finance, National University of Kaohsiung

Please visit our website for more information: http://www.csc.com.tw/csc_e/cg/bi.html

Board's Important Resolutions	
Mar	1. Appropriation of distributable earnings for 2015
	2. Date and venue for CSC's 2016 shareholders' meeting
	3. Addition of supporting conveyer of raw materials from storage yards of phases I and II to those of phases III and IV
Aug	1. CSC will establish a solar power concession company by joint venture with its subsidiaries
	2. Adjustment of employees' salary
	3. Fund endowment for CSC Group Education Foundation
	4. Donation of bicycles to Kaohsiung Rapid Transit Corporation for the public
	5. Change of management position will be effective on August 31, 2016
Nov	1. Revamp of hot stoves #34's hearth shell and inner shell of No. 3 blast furnace
	2. Revamp of basic oxygen furnace gas reservoir of BOF plant I
	3. Change of Vice President of Finance
Dec	1. Resources Development Department of Corporate Planning Division will be consolidated. Its business duties will be merged into Purchasing Department of Commercial Division in order to integrate the organizational functions of raw material purchase and resources investment.
	2.Retirees Service Department of Administration Division will be consolidated. Its business duties will return to Human Resources Department of the same division in order to downsize the organization and promote the synergy of human resources.

Committees of the Board

CSC sets up Audit Committee and Remuneration Committee to enhance the operation of the Board of Directors.

Audit Committee

The main responsibility is to assist the board in overseeing the following:

Operations of the Audit Committee

The Audit Committee is composed of all Independent Directors. The Committee shall convene at least once quarterly, and may call a meeting at its discretion whenever necessary. Following the establishment of the Audit Committee, the Supervisory mechanism was abolished starting from the re-election of Board of Directors on June 23, 2016.

The Audit Committee convened three regular meetings in 2016. The Independent Directors' attendance status is as follows.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)
Independent Director	Shyue-Bin Chang (Convener)	3	0	100%
Independent Director	Min-Hsiung Hon	3	0	100%
Independent Director	Lan-Feng Kao	3	0	100%

Communications between the Independent Directors, the internal auditors, and the independent auditors in 2016:

1. The Company's internal auditors have sent the audit and follow-up reports to the Audit Committee members periodically. To provide the Independent Directors with sufficient information, the internal auditors have also attended the quarterly meetings of the Audit Committee. The communication channel between the Audit Committee and the internal auditors functioned well in 2016.
2. The Company's independent auditors have attended the quarterly meetings of the Audit Committee and discussed with the Committee members about financial statements. According to their professional judgment, the independent auditors may request to communicate with the Audit Committee members in regular quarterly meeting or with Independent Directors in one-on-one meeting.

Highlights of the communications between the independent directors and the independent auditors in 2016:

a. Review of Interim Financial Statements

b. Introduction of the New Auditor's Report

c. Communications of Key Audit Matters in the New Auditor's Report

Remuneration Committee

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. Members are Shyue-Bin Chang (Convener), Min-Hsiung Hon, and Lan-Feng Kao.

3.1.5 Ethical Conduct

Avoiding Conflicts of Interest

The CSC Code of Ethics for Directors and Supervisors strictly stipulates avoiding conflicts of interest and sets anti-corruption principles. In addition, by Regulations Governing Procedure for Board of Directors Meetings of Public Companies, if there is a conflict of interest for any director with respect to any agenda item 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. The Ethics Protocol for First-Level Mangers and Above and the Ordinance for Avoiding Interest Conflict specify the criteria penalty for employees to avoid interest conflict.

Preventing Malpractice

CSC deems soliciting, accepting, and agreeing to accept bribes or other improper benefits from suppliers or stakeholders as serious misconducts. According to the Principles of Integrity and Ethical Management, all the directors, managers and employees of CSC should not directly or indirectly provide, promise, ask or accept improper benefit, or violate integrity and laws during commercial activities. Complying with the Political Donations Act, CSC does not contribute to political donations. Political donations of CSC personnel are also bound by the Act and company regulations. In addition, CSC takes the following precautions.

Award for International Trade, Ministry of Economic Affairs

Organizational Regulations	Stipulate moral requirements of CSC such as the Ethics Protocol for First-Level Mangers and Above, the Ordinance for Avoiding Interest Conflict and Employees Ethics Standard.
Employee Training	New employees are trained on ethical practice and organizational regulations, regularly updated by the Corporate Culture Committee and accessible to all employees through the CSC Biweekly Journal and website.
Risk Assessment	The Auditors Office (IA) assesses risks and develops annual audit plans based on the assessments, complying with the Financial Supervisory Commission regulations.
Self-inspection	In Feb. 2016, 46 Departments, 9 Divisions (including Office of Energy & Environmental Affairs, and Wind Power Business Development Committee), and 25 subsidiaries compiled self-inspection reports to be reviewed by IA and presented to President.
Complaint Channels	Complaint Hotline: +886-7-8021111#2191 (Head Office) +886-7-3371111#22191 (China Steel Building) Complaint Fax: +886-7-8010736 Complaint Mailbox: P.O. BOX 47-13 Kaohsiung, Taiwan Information is also noted in the procurement inquiry (in the e-Commerce system) for reporting of malpractice, bribery, and fraud. Complaints are collected and processed by IA. In 2016, 37 cases were received, all carefully examined and processed with the cooperation of Units. No case was with major drawbacks or serious loss of corporate profits.
Countermeasures against Misconduct	All cases of misconduct are reviewed by the Employee Reward & Punishment Committee and dealt with accordingly

Socializing Guidelines

- CSC Rules Governing Gifts, Benefits, Banquets, and Social Activities Operations provide guidelines for the engagement of CSC employees in socializing activities. Items of value offered by stakeholders during business interactions, unless otherwise specified, shall be rejected or returned. If failing to be returned, the items shall be reported and sent to the General Affairs Department for handling.
- IA collects lobbying cases and reports to Chairman and in the board meeting. In 2016, 37 cases were collected, all incorporated into auditing reports for tracking and emailed to independent directors and supervisors.

- CSC Rules Governing CSC Employee Participation in Business Related Banquets provides guidelines for the participation of CSC employees in banquets for the development of external relationships.

3.1.6 Internal Auditing and Correction

Purpose of Internal Auditing

The Auditors Office (IA) is under the Board of Directors. The chief auditor reports audit performances to each supervisor 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.

Correction and Operation

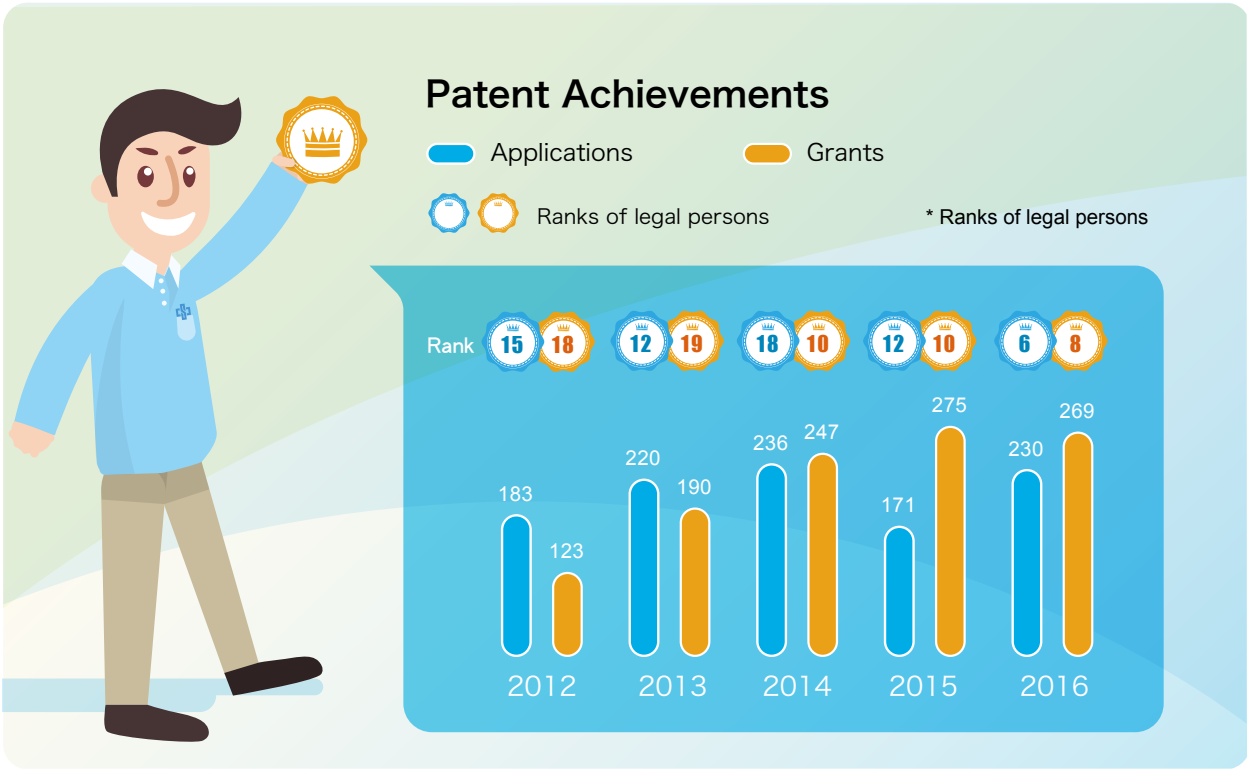
- Control key points of 10 operations: IA requested that related Units revise internal control procedures and control key points of 10 operations, and assisted subsidiaries to revise their regulations for internal control systems, practice details of internal auditing, and procedures of internal control self-assessment in 2016.
- Internal control system: IA reviewed internal control system self-assessment reports of Divisions and subsidiaries in 2016 and prepared a summary report combining all reviews. The summary report serves as the primary basis for evaluating the overall efficacy of all internal control systems and to produce internal control system statements.
- Eight transaction cycles: Audit items of 2016 include the procedure of eight transaction cycles, crosschecking functions between systems, compliance with Financial Supervisory Commission regulations, and internal control systems of subsidiaries. A total of 49 auditing reports and 447 suggestions of improvement were proposed, subject to timely improvement measures by audited Units and subsidiaries and filing in the CSC IA management system for follow-up. Audit items are submitted to supervisors and independent directors for review.

3.1.7 Patent Management

CSC promotes patent application through the Patent Promotion Committee and rewards units for outstanding patent promotion performances with Outstanding Patent Promotion Awards at the annual Research Outcomes Award Ceremony.

To demonstrate the corporate culture of down-to-earthness and pursuit of innovation, CSC sets KPI for patent application and made excellent progress. In 2016, there were 230 applications which are the No. 6 in Taiwan and the No. 1 in traditional industries. In 2016 there were 4 patents nominated for National Invention & Creation Award, and 2 of them were awarded.

To capitalize intellectual property, CSC promotes its patented technologies to acquire the most of economic benefits. Besides our core technologies, some patents, such as "Manufacturing electrodes of superconductors," "Indigent control system for reheating furnaces," etc., were chosen to promote licensing.



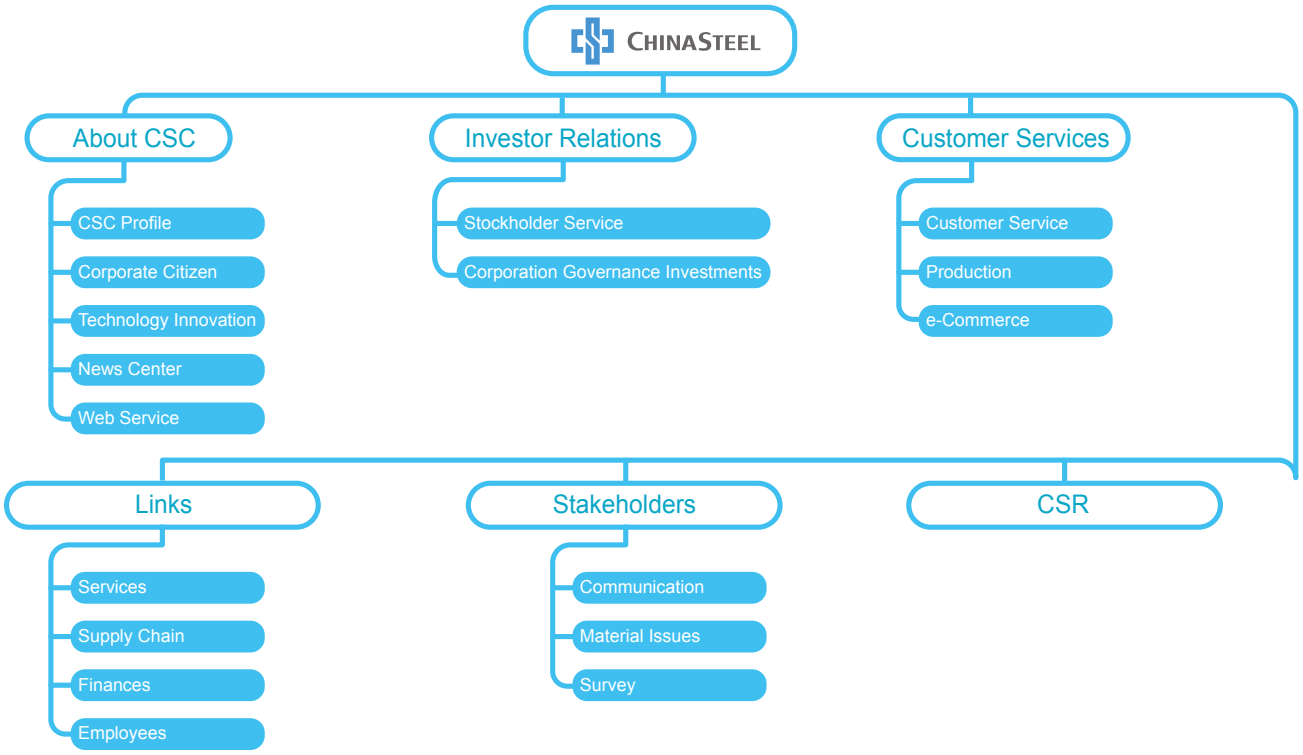
3.1.8 Transparency of Information

CSC regards information disclosure as an essential element of corporate governance. To ensure transparency of information, CSC makes filings through designated 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 hotline, spokesperson, and designated media contact.

In 2015 Securities and Futures Institute expanded Information Disclosure and Transparency Ranking into Corporate Governance Evaluation. CSC was evaluated as top 20% of TWSE companies. In 2016 CSC was evaluated as top 5% of TWSE 2015 (Second round) Corporate Governance Evaluation and chosen as of the components of Corporate Governance 100 Index.

References:
http://cgc.twse.com.tw/pressReleases/promoteNewsArticleCh/1059
http://cgc.twse.com.tw/pressReleases/promoteNewsArticleCh/1242

CSC Website Map



Spokesperson and Media Contact ＋886 -7-802-1111#2575

- New messages and information
- Press release after the board meeting
- Press release after steel price adjustment
- News announced by CSC Group subsidiaries or affiliates
- News of unexpected incidents

3.2 CSR Management

CSC aspires to be a trustworthy steel company of global distinction that pursues growth, environmental protection, energy saving and value innovation. To realize this vision, CSC dedicates to optimizing the steel industry value chain and building the environment for sustainable development.

3.2.1 CSR Principles and Directives

Under the CSC operating principles of "promotion of social well-being, result orientation, implementation of teamwork, and emphasis on employees self-realization," CSC develops policies for corporate social responsibility in accordance with the worldsteel sustainable development policy and Sustainable Development Charter of the World Steel Industry CSC was invited to sign in 2012. CSC strives to practice corporate social responsibility as outlined by the policy in economic, environmental, and social aspects and improve information disclosure and stakeholder engagement.

3.2.2 Communication with Stakeholders

Besides disclosing information online and in Operation Reports, CSC issues CSR Reports annually to serve as an important tool for communicating sustainability efforts. In addition, CSC enhances overall accessibility, transparency, timeliness, completeness, and interactivity of information with CSC website and the CSR webpage, and uses these for stakeholder feedback and continuous improvement.

Identification of Stakeholders

To identify major stakeholders, the Core Working Group referred to experiences of Divisions and fellow steel companies and the AA1000 Stakeholder Engagement Standard (AA1000SES) according to dependency, responsibility, influence, diverse perspectives, and concern level. These stakeholders include employees and contractors, customers and traders, shareholders, suppliers, government, communities and local organizations, steel industry peers, reporters, NGO and opinion leaders, and academic researchers.

Employees

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Occupational Safety and Health v Labor/ Management Relations v Employee Welfare and Salary v Talent Recruit and Retention	○ Chairman Suggestion Mailbox, board representation by CSC Labor Union ○ Top management-employee communication meeting (every week) ○ Departmental communication meeting, Labor Safety and Health Committee meeting (every 2 months) ○ Management-Labor Union Committee meeting, Pension Fund Supervisory Committee meeting (every 3 months) ○ Top management-Labor Union council members communication meeting, Stock-holding Trustees Committee meeting (every 6 months) ○ Human Resources Development Committee meetings (every year) ○ Collective agreement with CSC Labor Union (every 3 years) ○ Rewards and Punishments Review Committee (aperiodically)	○ In 2016, 21 mails were received and answered in the Chairman Suggestion Mailbox, while 2 other previous mails are under follow-up.

Contractors

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Occupational Health and Safety	○ 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 trainings (whenever necessary)	○ Communicated and promoted safety and health issues monthly ○ Ensured outsourcing unit price and common contract terms amendments ○ Trained in safety regulations and certified for technical proficiencies as required for appropriate task execution

Customers and Traders

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Product Quality/ Technology Development v Material Use and Recycled Materials v Hazardous Substance Control	○ Production-sales meeting (every 3 months) ○ Customer satisfaction survey (every year) ○ Customer feedback through exposition (aperiodically) ○ R&D alliances, workshops, market investigation, visits, interviews (aperiodically) ○ Process customer feedback and adopt for improvement of products and services quality ○ Investigate market for new products, industrial materials and trends (aperiodically) ○ Assist customers with process improvement and materials use (aperiodically)	○ 40 joint production and marketing meetings for import, 4 for export ○ 12 local and international technology seminars ○ 111 key customer visits ○ 38 customer feedback items ○ 14 industrial materials and trends investigations ○ Improved results of Customer Satisfaction Survey

Individual Shareholders

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Operational and Financial Performance v Product Quality/ Technology Development	○ Free service line (886-0800-746-006) and email: f1000@mail.csc.com.tw) ○ Publicly disclose operating revenues and preliminary result on the Market Observation Post System and CSC website (every month) ○ Convene shareholders meeting in the second quarter and adopts e-voting with full shareholder participation in the voting process and announces results on Market Observation Post System and CSC website (every year) ○ Issue online and paper versions of Annual and Operation Reports (every year)	○ Fifth year of e-voting adoption, participation rate amounted to 20.65% of total issued shares and over 94% for foreign investors

Institutional Shareholders

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Operational and Financial Performances v Product Quality/ Technology Development	○ Announce monthly operating results and list prices ○ Communicate with domestic and international institutional shareholders through visits, conference calls, and video conferences (aperiodically) ○ Participate in domestic and international investor conferences (aperiodically)	○ Participated in 7 investor conferences ○ More than 100 receptions and conference calls for domestic and foreign institutional shareholders

Suppliers

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Energy Consumption and Management v Material Use and Recycled Materials v Hazardous Substance Control	○ Participate in workshops (averages 20 per month) ○ Visits, forums, provisions of safety design specifications (aperiodically) ○ Local supply partnerships (aperiodically)	○ Discussed specifications, terms, and price ○ Visits for production and quality status ○ Communicated and discussed market information ○ Assessed and awarded suppliers for local purchase

Government

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Waste Management v GHG Management v Air Pollution Prevention Strategies	○ Visit legislators, city councilors and relevant government authorities to communicate reasonable control regulations and policies ○ Participate in communication meetings, seminars, and assessment by authorities (aperiodically) ○ Coordinate authorities to hold the activities related to investors (aperiodically)	○ Visited legislators, city councilors and relevant government authorities to communicate the principles to define waste and the reasonable responsibilities for the agencies ○ Attended public hearings related to water footprint, environmental impact assessment, Kaohsiung and Pingtung air pollutants cap, power industry standards, and Kaohsiung City environmental maintenance and management ○ Hosted forums for carbon market and carbon management

Communities and Local Organizations

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Water Resources and Waste Water Management v Air Pollutants v Waste Management v Hazardous Substance Control	○ Visits and negotiation through the Public Affairs Department (aperiodically) ○ Visits and negotiation through CSC Labor Union (aperiodically) ○ Visits and negotiation through CSC Group Education Foundation (aperiodically) ○ Visits and negotiation through CSC employee clubs (aperiodically)	○ 350 visits and negotiation through the Public Affairs Department


Chairman-employee communication meeting


Contractor Safety and Health Committee meeting


Contractor Safety and Health Committee meeting


Communication with suppliers

Steel Industry Peers

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Product Quality/ Technology Development	○ Participate in meetings held by the Taiwan Steel & Iron Industries Association, worldsteel, and South East Asia Iron and Steel Institute (aperiodically) ○ Bilateral and multi-lateral communication, official visits and meetings (aperiodically)	○ 7 company-level communications

Reporters

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Corporate Governance v Sustainable Development Strategy v Moral/Ethical Code v Environmental Policy/ Management System	○ Press release (aperiodically) ○ Spokesperson interview (aperiodically)	○ 73 news releases ○ 19 spokesperson interviews

NGO and Opinion Leaders

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v GHG Emissions v Sustainable Development Strategy v Communication with Stakeholders	○ Participate in forums, workshops and meetings held by professional associations, institutes, and guilds (periodically and aperiodically)	○ Participated in "Earth Hour" and educational lectures held by the Society of Wilderness ○ Visited external opinion leaders to communicate environmental management ○ Participated in CNFI, Formosa Association of Resource Recycling, Taiwan Institute for Sustainable Energy, Sustainable Industry Forum, etc.

Academic Researchers

Concerning Issues	Communication Channels and Frequency	2016 Engagement Highlights
v Product Quality/ Technology Development	○ Progress review of Engineering Research Center and Industry and Academia Alliance (every 2 months) ○ Progress review of Joint Research Laboratory (every 3 months) ○ Mid-term report of outsourced researches, research instruction (every 6 months) ○ Proposal and final reports of ERC, JRL, and outsourced researches (every year) ○ Keynote speeches (aperiodically)	○ 6 keynote speeches by local and international experts and scholars ○ 63 outsourced researches ○ 6 research instructions by local and international experts and scholars


Communication with suppliers

CSC-Shougang technical communication


Presentation of Fastener Service Cloud


Shareholders meeting

3.2.3. Material Issues

CSC adopts the principles of stakeholder inclusiveness, sustainability context, materiality, and completeness to identify issues of materiality through review and identification, prioritization, and validation. To address stakeholder concerns, CSC discloses its management approach and performances regarding each material issue.

Review and Identification

Stakeholder opinions in 2016 were collected through the communication channels and by GRI-G4. Collected opinions were then analyzed by the CSR Core Working Group and categorized into 35 issues in economic, environmental, and social aspects.

Economic

- Sustainable Development Strategy
- Operational Financial Performance
- Product Quality/Technology R&D
- Corporate Governance
- Risk Management
- Codes of Conduct/Ethics
- Supply Chain Management
- Customer Satisfaction Survey
- Customer Services Management
- Privacy Policy

Environmental

- Air Pollutants
- Water Conservation and Waste Water Management
- Waste Management
- Energy Consumption and Management
- Hazardous Substance Control
- Environmental Policy/Management System
- GHG Emissions
- Material Use and Recycled Materials
- Product/Service Carbon Footprint
- Environmental Grievance Mechanism
- Green Product/Service Design and Development
- Green Supply Chain Management
- Biodiversity and Habitat Conservation

Social

- Occupational Safety and Health
- Labor/Management Relations
- Employee Welfare and Salary
- Talent Recruitment and Retention
- Community Involvement and Charity
- Labor Practices
- Product/Service Responsibility
- Stakeholder Communication
- Career Development and Education/Training
- Employee Satisfaction Survey
- Gender Equality
- Supplier Management for Social Performance

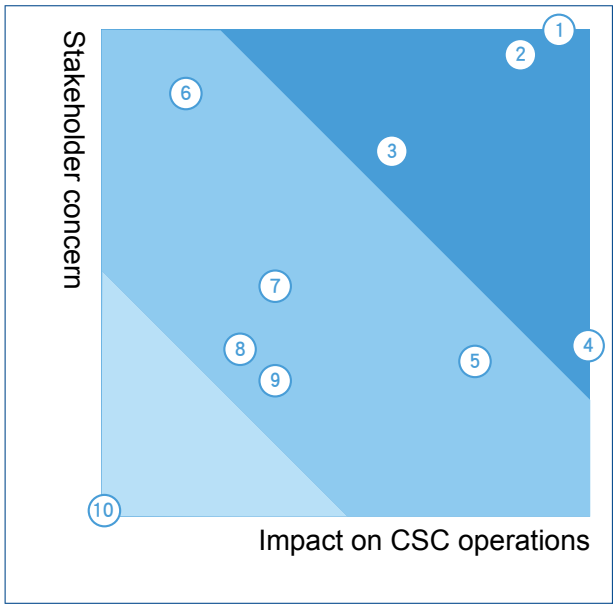
Analysis

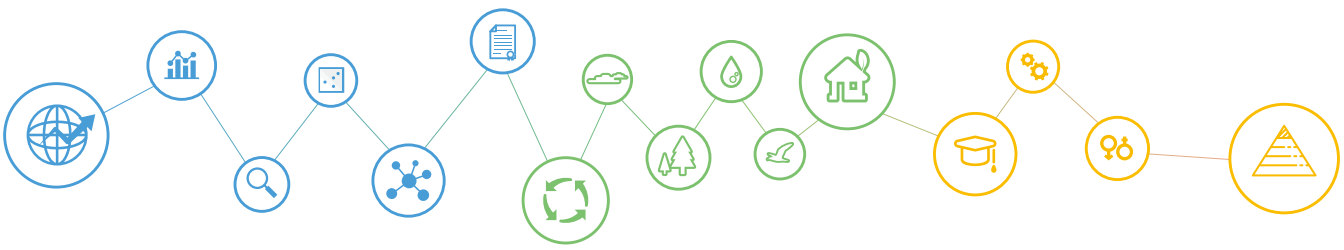
Methods for materiality analysis include survey, expert forums, and media analysis. Issues with high stakeholder concern and may cause significant impact on CSC operations are material issues.

Survey

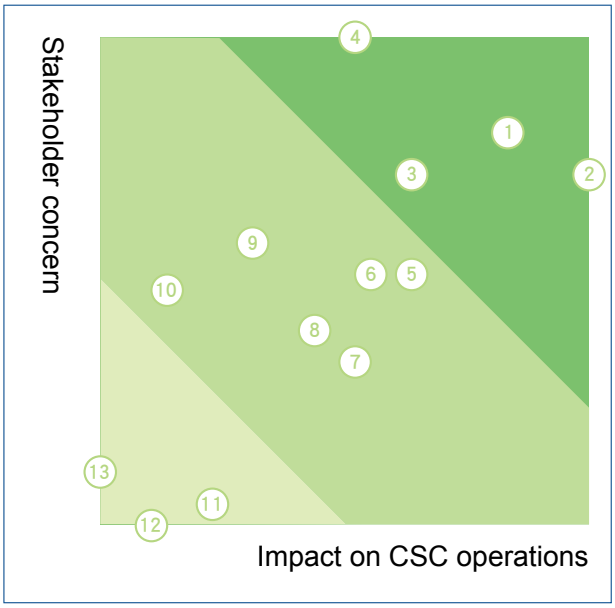
Concern levels of stakeholders for each of the 35 issues were quantified by means of survey with e-questionnaires on the CSC CSR website and questionnaires distributed by the CSR Core Working Group to relevant CSC Units and to their stakeholders from Nov. 22 to Dec. 31, 2016. For the overall impact of each issue on the operations of CSC, Units of CSC assess the impact on economic, environmental, and social aspects and its probability. Units of CSC also assess stakeholders with the five characteristics of AA1000SES, and stakeholder concern is then weighed based on the assessment. The issues are then plotted by the stakeholder concern and the overall impact on CSC operations into materiality matrices in the three major aspects. Issues of high stakeholder concern and high impact on CSC operations are identified as material issues and sufficiently disclosed in the CSR Report and online. For each aspect, issues with low to medium stakeholder concern and impact on CSC operations are disclosed to the corresponding degree.

Economic Aspect		Chapter
1	Operational Financial Performance	4.1
2	Sustainable Development Strategy	3.2
3	Product Quality/Technology R&D	5.2
4	Corporate Governance	3.1
5	Risk Management	
6	Codes of Conduct/Ethics	
7	Supply Chain Management	
8	Customer Satisfaction Survey	
9	Customer Services Management	
10	Privacy Policy	

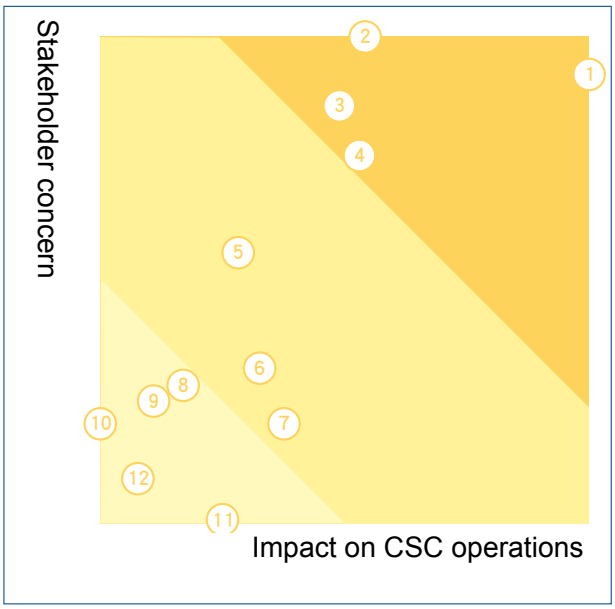




	Environmental Aspect	Chapter
1	Air Pollutants	6.5
2	Waste Management	6.5
3	Hazardous Substance Control	6.5
4	Environmental Policy/Management System	6.1
5	Water Conservation and Waste Water Management	
6	GHG Emissions	
7	Energy Consumption and Management	
8	Material Use and Recycled Materials	
9	Environmental Grievance Mechanism	
10	Green Product/Service Design and Development	
11	Product/Service Carbon Footprint	
12	Green Supply Chain Management	
13	Biodiversity and Habitat Conservation	



	Social Aspect	Chapter
1	Occupational Safety and Health	7.6, 8.3
2	Labor/Management Relations	8.2
3	Employee Welfare and Salary	8.2
4	Talent Recruitment and Retention	8.1
5	Labor Practices	
6	Stakeholder Communication	
7	Product/Service Responsibility	
8	Career Development and Education/ Training	
9	Employee Satisfaction Survey	
10	Gender Equality	
11	Community Involvement and Charity	
12	Supply Chain Social Performance Management	



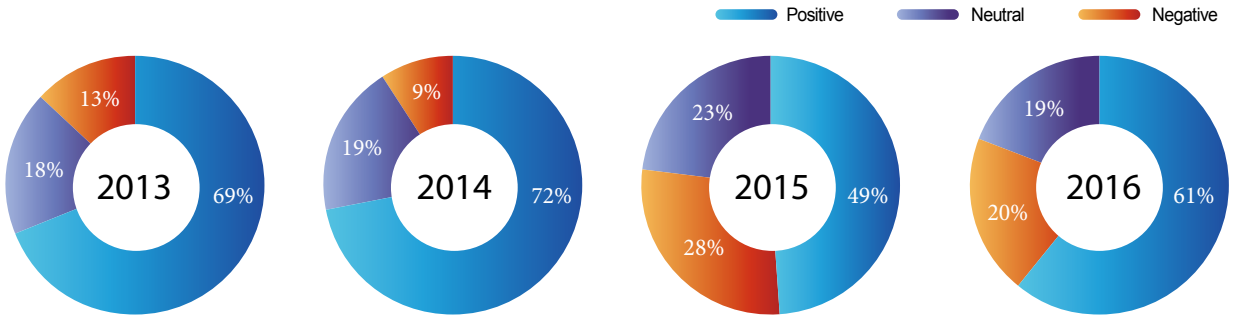
Expert Forums

CSC convened two forums in 2016, where experts from industry and academia and NGOs exchanged ideas on various topics. Key points related to the social responsibility of CSC are categorized and regarded as material issues for the 2016 CSR Report and are disclosed in respective chapters and online.

Key Points	Material Issues	Chapter	
To understand positions and hopes of different groups from analysis of positive and negative media coverage	Stakeholder communications	3.2.2	Communication with Stakeholders
		3.2.3	Material Issues
To alter the general perception with diversified development for slag	Environmental policy/ management system	6.6	Byproduct Utilization

Media Analysis

To identify material issues, CSC furthermore refers to media coverage and collects relevant online news pieces of the four mainstream medias and of local e-medias. The news pieces for 2016 were analyzed and categorized by content as environmental, social, economic, or other issues. Economic news pieces are the majority, and investments and the economy are the focus of positive and negative coverages. The negative reports are regarded as material issues for the 2016 CSR Report and are disclosed in respective chapters and online.



Media Coverage	Material Issues	Chapter	
Investment strategies	Operation financial performance	4.1.2	Invested Businesses
Steel market recess	Operation financial performance	3.1.1	Vision and Directives
		3.1.2	Respond to Major Impacts
		4.1	Operation and Finance
Slag management	Environmental policy/management system	6.6	Byproduct Utilization

Validation

From means of survey, expert forums, and media analysis, a total of 13 material issues are identified. The respective GRI-G4 material aspects are validated by the CSR Core Working Group. The impact inside and outside of the organization is examined, and GRI-G4, industrial characteristics, and experience of international steel industries are taken into account to identify the boundary for disclosure and to address the concern of stakeholders.

Material Aspect Boundary Identification

For every material aspect, the impact inside and outside of the organization is examined. In addition, GRI-G4, industrial characteristics, and international steel industry experiences are considered to identify the boundary for disclosure and to address the concern of stakeholders.

Aspect	Material Issue	Material Aspect	GRI Indicator	Boundary inside CSC	Boundary outside CSC	DMA
Economic	Sustainable development strategy	-	G4-1	CSC	-	1.1, 3.2
	Corporate governance	-	G4-34	CSC	-	3.1
	Operation financial performance	Economic performance	G4-EC1~4	CSC, subsidiaries, joint ventures	Shareholders	4.1
	Product quality/ technology R&D	Indirect economic impacts	G4-EC7~8	CSC	Customers	4.2, 5.2, 7.2
Environmental	Environmental policy/management system	-	-	CSC	-	6.1, 6.2, 6.6
	Air pollutants	Emissions	G4-EN20~21	CSC	Community	6.5
	Waste management	Effluents and waste	G4-EN23~25	CSC, subsidiaries	Community, government	6.5
	Hazardous substance management	Effluents and waste	G4-EN23, 25	CSC	Suppliers, community, customers	6.5
Social	Talent recruitment and retention	Employment; Training and education	G4-LA1~3, G4-LA9~11	CSC	-	8.1, 8.4
	Employee welfare and salary	Employment	G4-LA2	CSC	-	8.2
	Labor/management relations	Labor/ management relations	G4-LA4	CSC	-	8.2
	Occupational health and safety	Occupational health and safety	G4-LA5~8	CSC	Contractors	7.6, 8.3
	Stakeholder communication	-	G4-24~27	CSC	-	3.2

3.2.4 Management of Risks and Crises

In CSC there are three levels for risk control:

Level 1: The responsible departments take the responsibility of risk detection, evaluation, control, and proposal of prevention schemes.

Level 2: The president and vice presidents hold functional committees and meetings for risk assessment and feasibility study for the prevention schemes. Legal Office (H01) and Internal Audit Office (IA) provide legal opinions and control points setting.

Level 3: The Audit Committee and the Board of Directors review and approve the risk assessment and prevention schemes. IA selectively examines and evaluates different risks and reports to the Audit Committee and the Board of Directors.

In CSC, risk control is the responsibility of all employees. It is prevented layer by layer through daily routines and is not only controlled by some specific departments. We believe this is the best way to implement risk control.

In CSC, Secretariat Department sets long-term strategies and targets, while Industrial Engineering Department (H2) sets yearly strategies and targets. The strategies and targets of risk assessment for each department are set by H2. When there is urgent risk, a cross-department taskforce may be set up to perform risk detection, assessment, and prevention. IA periodically audits operational items of business cycles to find out possible risk in advance, to adjust it, and to prevent properly.

At the beginning of every year, from bottom up, each department performs risk assessment for every operational task 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. Together with IA's report, it comprises major part of the internal control statement which will be sent to the Audit Committee and the Board of Directors for review and approval. The risk management in CSC is rigorous with excellent performance to prevent possible risks.

Type	Potential Risks	Risk Control Strategies and Measures
Finance Risk	**Exchange Rate Risk**	• Adopt hedging operation for foreign currencies of import/export businesses to avoid risk. As well monitor the trend of exchange rate and buy or sell currencies adequately to avoid risk.
		• Adopt exchange rate risk avoiding operation soon after foreign capital expenditures.
		• Take out loans of equivalent amounts of foreign currencies for long term foreign investment.
	Rising Interest Rates	• Set a strict tolerance rate for variable interest rate liabilities
		• Issue corporate bonds to lock the mid-term and long-term capital cost and avoid increasing interest rates
		• Use low interest rate commercial papers and short term bank loans for short term financing
		• Adopt adjustable fixed rate commercial papers (FRCP) for long term financing during the time of a relaxed capital market
	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 facing inflation risk
	Pickup by Customers	• Assist customers in increasing bank credit amounts by negotiating with banks for forfaiting of account receivables
		• Use e-commerce and security mechanisms of digital signatures to simplify payment procedures
	Service Quality	• Monitor the correct operation of e-security mechanisms and computerize financial operations to ensure data accuracy and timeliness
	Capital Utilization Efficiency of CSC Group	• Use various indicators to regularly analyze financial structures of group affiliates and set up an alarm mechanism
		• Conduct real-time monitoring of financial asset values to enhance capital management among group affiliates and improve the capital utilization efficiency

Type	Potential Risks	Risk Control Strategies and Measures
Production Risk	Economic Recession	• Simulate and plan for production and sales situations based on orders estimation
		• Coordinate cast quota
		• Adjust blast furnace production and maintenance schedule according to storage capacity
		• Adjust production line quarterly/yearly maintenance schedule
		• Adjust storage limits according to the production of molten iron
		• Outsource rolling when necessary
Market Risk	Concentrated Sales	• Adopt marketing channel strategy of "mainly domestic sales, export sales as a supplement" and make adjustments according to market changes. Set up overseas coil centers to manage and control marketing channels.
	Imbalanced Production and Sales	• Simulate production and sales conditions based on orders received to timely adjust production plans.
Raw Material Source Risk	Interruption of Supply	• For suppliers: carefully assess and actively develop material sources
		• For stocks: maintain adequate stocks for production flexibly
		• For transportation: operate with own vessels for material shipment and use chartered vessels as alternatives when necessary
		• Increase self-supply of raw materials
		• Grasp market conditions by business information collection and investigation of plants
	Material Investment	• Choose carefully miners and/ or partners for raw materials resources investment
		• Hire advisors to assist with feasibility evaluation
		• Conduct on-site due diligence on the project and miners
		• Convene meetings for comprehensive evaluations
		• Monitor the operation and development of the invested projects and/or companies
		• Participate in the decision making process of the invested projects and/or companies
		• Set up overseas branch offices to enhance business liaisons and command investment trends
Transportation Risk	Shipment of Raw Materials	• Review material reserve weekly for optimized transportation planning to avoid material interruption. Based on the capacity needed and economic benefits, actively dispatch vessels of long term or temporary contracted. Continuously track the positions of vessels till unloading.
	Shipment of Finished Goods	• Request customers to buy insurances for marine transportation. For domestic in-land transportation, all the contractors are requested to provide security deposit in bank for guaranteeing goods reach their destination safely.
Information System Risk	Information System Abnormality	• Standardized operation procedures
		• Enforce disaster prevention, information safety, monitoring, reporting mechanism, abnormality management, and backup
		• Carry out training and periodic drills

Type	Potential Risks	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 public sewage treatment plant water recycling - Fengshan Creek reclaimed water plant, Linhai sewage treatment plant
	Stricter Regulations	• Comply to regulations to ensure the quality of effluent meets standards
Equipment Maintenance Risk	Machinery Equipment Maintenance	• Spare Parts Maintenance Control: Maintain appropriate inventory level. Enhance information management. Promote domestic manufacturing.
		• Maintenance Records Establishment: Decrease equipment unscheduled downtimes through equipment shutdown and failure management.
		• Knowledge Management in Maintenance: Design comprehensive recruiting plans and encourage skilled technicians to participate in the apprenticeship program for smooth transitions from the experienced to the younger generations, and use information tools to enhance knowledge management.
	Electrical Equipment Maintenance	• Practice the TS 16949 Standard Maintenance Procedure
		• Practice the ISO 9000 Standard System Development Procedure
		• Established "Information Safety Management Regulations of Production Divisions" with reference to ISO 17799
Water Risk	Water Resources Management	• Collect rainwater for reuse
		• Add secondary water source such as seawater desalination and domestic waste water recycling. The Fengshan sewage treatment plant project is the first public wastewater reclamation project. CSC expects to introduce reclaimed water for process, obtaining 24,000 t per day in 2018 and 44,000 t per day in 2019, to significantly reduce the demand for raw water during water restriction.
		• 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 carbon reduction roadmap
		• Develop energy saving and carbon reduction steel products and perform Life Cycle Analysis
		• Develop new green businesses; participate in local and international cooperative initiatives and activities for carbon reduction, capture and storage, and credit
		• Promote low-carbon lifestyle to the whole CSC Group
ESH 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
		• Enhance risk control and management for resource utilization and products
	Administrative Justice	• Watch for the imposition of various types of environmental and energy taxes to ensure that they are just
Engineering Management Risk	Internal Management	• Develop construction management system and management system for control and managing of labor safety, quality, schedule, and budget
	Contractor Performance	• Track contractors' financial status by entrusted local investigators and filing investigation results in the construction management system and integrated platform
		• Conduct periodic credit checks of specific suppliers

4.1 Operation and Finance

The steel industry is capital-intensive for production equipment demands huge amount of investment and coal and iron materials account for a high percentage of production cost. To control costs and maintain competitiveness, CSC practices various projects. The initiative of cost saving is an important strategy and a key performance indicator for the steel industry.

CSC continues to reduce operating costs systematically by using scientific methods on raw materials utilization, process improvement, technology R&D, quality upgrades, and management improvement. Divisions review executive results every month and reports in Total Quality Management (TQM) Committee and Operational Budget Execution Review meetings every quarter for timely improvement.

In 2016, 199 major items of Cost Reduction Activities were planning to implement with cost reduction target of NTD 3.8 bi. In addition with the reduction from controllable costs of general affairs, the total cost reduction was NTD 4.05 bi., a 107% of the annual target. In 2017, 246 major items of Cost Reduction Activities will plan to implement with cost reduction target of NTD 3.25 bi.

Unit: bi. NTD

Cost Reduction Activities	2012	2013	2014	2015	2016	2017
Target	44.7	40.8	37.0	35.0	38.0	32.5
Performance	60.3	55.2	43.9	48.4	40.5	

4.1.1 Business Performance and Dividend Distribution

Operating Revenues

Unit: 1,000 NTD

	2015	2016	Increase/Decrease from 2015 to 2016
Sales Revenues	156,105,004	163,894,831	Increased 7,789,827 due to the increase in sales volume of carbon steel
Service Revenues and Others	4,804,460	5,032,244	Increased 227,784 due to the increase mainly in construction revenue
Total Operating Revenues	160,909,464	168,927,075	Increased 227,784 due to the increase mainly in construction revenue

Note: For detailed financial information, please refer to: http://www.csc.com.tw/csc/ss/fin_month.htm

Operating Expenses

Unit: 1,000 NTD

	2015	2016	Increase/Decrease from 2015 to 2016	
Operating Costs	148,511,291	147,174,784	-1,336,507	-0.90%
Cost of Goods Sold	145,200,189	143,177,939	-2,022,250	-1.39%
Service Costs and Others	3,311,102	3,996,845	685,743	20.71%
Operating Expenses	7,469,515	8,286,601	817,086	10.94%
Total	155,980,806	155,461,385	-519,421	-0.33%

Net Profit and Earnings

	2014	2015	2016
Operating Revenues (Unit: bi. NTD)	2,051.60	1,609.09	1,689.27
Cash Dividend (Unit: NTD)	236.56	83.16	180.33
Stock Dividend (Unit: NTD)	221.32	76.05	160.38
Dividend Payout Ratio	1.43	0.49	1.04

Note: Dividend distribution of 2016 will be effective after approval of shareholder meeting on 21 June 2017.

Distribution of Earnings

In 2016, earnings available for distribution totaled NTD 17.723 bi., with dividend distribution of NTD 1.4 per preferred share and 0.85 per common share. Dividend distribution and return on investment over the past five years are as follows

	2012	2013	2014	2015	2016
EPS After Income Tax (Unit: NTD)	0.38	1.05	1.43	0.49	1.04
Cash Dividend (Unit: NTD)	0.4	0.7	1	0.5	0.85
Stock Dividend (Unit: NTD)	0.1	0.2	0	0	0
Dividend Payout Ratio	131.60%	85.70%	69.90%	102.04%	81.73%

Note: Dividend distribution of 2016 will be effective after approval of shareholder meeting on 21 June 2017.

	2012	2013	2014	2015	2016
P/E Ratio	24.65	11.27	17.98	46.47	20.96
P/D Ratio	36.97	16.03	25.71	45.54	25.65
Cash Dividend Yield	2.70%	6.24%	3.89%	2.20%	3.90%

Note: P/E Ratio = Average closing price per share for current year / EPS
P/D Ratio = Average closing price per share for current year / cash dividend per share
Cash Dividend Yield = Cash dividend per share / average closing price per share for current year

According to CSC Articles of Incorporation, earnings of a fiscal year are distributed in the following order after tax payment, deficits offset, and appropriation of legal reserves.

- Appropriation/Reversal of special reserves according to law and regulation.
- Preferred share dividends at 14% of par value.
- The remainder, if any, as additional dividends divided equally between the holders of preferred and ordinary shares.

Note: In accordance with the amendments to the Company Act, the policy on appropriation of earnings was amended. The amendments to CSC's Articles of Incorporation were resolved by shareholders in their meeting held on 23 June 2016.

4.1.2 Invested Businesses

At present, the scope of the CSC Group's business encompasses five major domains, including steel, engineering, industrial materials, trading & logistics, and services & investments. The combined annual revenues of the 27 companies in the CSC Group is approximately NTD 350 billion.

In the future, the CSC Group will collaborate with the companies of the Group to heighten the values of its products actively and innovatively to enhance its international competitiveness. Moreover, it will invest in new businesses with potential domestically and overseas to expand its business territories, which will enable the CSC Group to become one of the global groups with distinction.

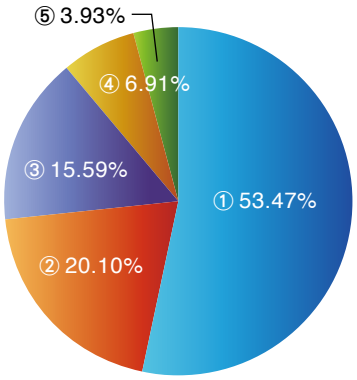
Business	Corporate	Operational Performance in 2016
STEEL BUSINESS	Dragon Steel	As the steel market was booming and sales increased, the profit before income tax of Dragon Steel Corporation and that of Chung Hung Steel Corporation in 2016 increased from 2015. In regard to CSC's overseas operations, there were listed gains in CSC Steel Sdn. Bhd. due to the reduction of raw material costs. Its profit before income tax in 2016 increased from 2015. The output of China Steel Sumikin Vietnam Joint Stock Company reached a record high since its establishment, and its profit before income tax in 2016 was US$1.05million. The output of China Steel Corporation India Pvt. Ltd. in 2016 was more than that in 2015. Although there is a deficit in its operations, noticeable improvements can be observed.
	Chung Hung Steel	
	CSC Steel Sdn. Bhd	
	China Steel Sumikin Vietnam	
	China Steel Corporation India	
TRADING & LOGISTICS BUSINESS	China Steel Express	Because of the oversupply of vessels in the bulk shipping market and low freight, China Steel Express Corporation's operating revenue in 2016 was less than that in 2015. Due to the gains from disposal of bulk vessels, its profit before income tax in 2016 increased China Steel Global Trading Corporation's profit before income tax in 2016 was increased by 40.69% from 2015 due to the increase of recognized reinvestment gains and business. As the steel market was booming, Qingdao China Steel Precision Metals Co., Ltd.'s profit before income tax was increased to RMB$12.92 million compared with that in 2015. The operations of United Steel Engineering and Construction Co., Ltd.'s profit margin turned positive in 2016; however, due to the increase of interest expenses, it suffered los before income tax of RMB$1.418 million.
	China Steel Global Trading	
	Qingdao China Steel	
	United Steel Engineering and Construction Co., Ltd.	
INDUSTRIAL MATERIALS BUSINESS	C.S. Aluminum	CSAC's profit margin turned positive in 2016 as the prices of aluminum and zinc went up as shown in LME. Nonetheless, due to recognized reinvestment losses, CSAC suffered loss before income tax of $41 million. China Steel Chemical Corporation's operating revenue and net profit decreased in 2016 because of plummeted oil prices. Its profit before income tax decreased by 16.91% from 2015. Sales volume and prices of CHC Resources Corporation's pulverized blast-furnace slag in 2016 went down because of the downturn in the private investment sector and real estate development. Its profit before income tax decreased by 31.52% from 2015. Sales Revenue of HIMAG Magnetic Corporation's ferric oxide, special chemicals, and eco-products increased in 2016; its profit before income tax increased by 6.70% from 2015. Sales volume and prices of Changzhou China Steel Precision Materials Corporation's titanium products went down in 2016. Its profit margin was decreased, and there were exchange losses resulted from the devaluation of RMB. As a result, its loss before income tax reached RMB$20.58 million. China Steel Resources Corporation's profit before income tax was $10.55 million. The construction of CSC Precision Metal Industrial Corporation's plant is in the hot commissioning phase. Its loss before income tax reached $11.58 million in 2016. There was no technology licensing revenue in White Biotech Corporation in 2016. The gross profit from the transactions of electronic gases could not cover its operating costs; consequently, it suffered loss before income tax of $17.33 million. The operating revenue generated by CSC Bio Coal Sdn. Bhd. could not cover its operating costs and expenses; consequently, it also suffered loss before income tax of RMB$5.26 million in 2016.
	China Steel Chemical	
	CHC Resources	
	HIMAG Magnetic	
	Changzhou China Steel Precision Materials	
	China Steel Resources	
	CSC Precision Metal Industrial	
	White Biotech	
	CSC Bio-Coal Sdn. Bhd.	
ENGINEERING BUSINESS	China Steel Machinery	Due to the impact of the rush of the Taichung MRT Project, China Steel Structure Co., Ltd.'s profit before income tax was $81 million in 2016, a decrease from 2015. Due to the reduction of the energy and national defense businesses, China Steel Machinery Corporation's loss before income tax was $711 million. With the recognized reinvestment losses in 2016, China Ecotek Corporation's profit before income tax was $336 million, a decrease from 2015. InfoChamp Systems Corporation's profit before income tax was 310 million, which was 21.12% less than those in 2015. CSC Solar Corporation was established in Oct. 2016. There has been no operating revenue so far.
	China Ecotek	
	China Steel Structure	
	InfoChamp Systems	
	CSC Solar	

Business	Corporate	Operational Performance in 2016
SERVICES & INVESTMENTS BUSINESS	Gains Investment	Due to the impairment loss on available-for-sale financial assets, Gains Investment Corporation's profit before income tax in 2016 was $387 million, 12.11% less than 2015. China Steel Security Corporation's profit before income tax in 2016 was $123 million, which was 9.64% less than those in 2015. China Prosperity Development Corporation's profit before income tax in 2016 was $237 million, a decrease from 2015 due to the recognized gains from the disposal of the land of the CPDC Qianzhen Residential Building in 2015. Due to the reduction of commissioned training for external steel mills, China Steel Management Consulting Corporation's profit before income tax in 2016 was $3.36 million, less than in 2015.
	China Steel Security	
	China Prosperity Development	
	China Steel Management Consulting	

4.1.3 Capital Sources and Major Subsidies

CSC's shareholder structure:

① Domestic natural persons and other juristic persons
② Government (state-owned) institutions
③ Foreign natural persons, juristic persons, trust funds, and investment (including depositary receipts)
④ Domestic securities investment funds
⑤ Domestic financial institutions



According to Article 10 of Statute for Industrial Innovation, CSC's expenditure on R&D are credited against its income tax payable. CSC does not accept other governmental subsidies.

Unit: NTD 1,000

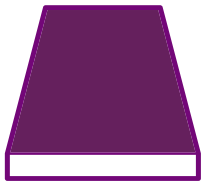
	2011	2012	2013	2014	2015	2016
Investment tax credit utilized	1,533,465	14,082	15,818	27,311	399,285	139,933

4.2 Industry Upgrade and Innovation

For the continuous growth of CSC and expansion of the Group businesses, CSC practices "deepened, broadened, and innovative integration" R&D transform and revises the plan for the development of own brand wind turbine to correspond with government's industry strategy. In 2016 Technology Division carried out organizational reorganization by incorporating Automation and Instrumentation System Development Section and Product Application Research Section of Iron & Steel Research & Development Department as well as Energy Development & Application Section of New Materials Research & Development Department with Green Energy & System Integration Research & Development Department to enrich the latter's functions and tasks. In addition, the development of the technology in product deep processing, the increase of product added value, the exploitation of new market and niche, the strengthening of intellectual production technology, and the establishment of internet of things and services will be accelerated to enhance the product quality and productivity. Furthermore, the integration of R&D and engineering capacity enables the research results in lab to be realized in pilot production line, thus the high-end products will rapidly be implemented in market. CSC continues making differentiation in cost, products, energy saving and environmental protection as well as customers services to break through the business difficulties and enhance the competitive advantage. By strengthening the services in technology marketing and constructing industrial clusters a brand new situation will be opened up and consequently contribute to the sustaining progressing and growing of both the company and downstream industries.

4.2.1 Major Research Results

Accomplishment



Development of PA500H Abrasion Resistant Steel Plate

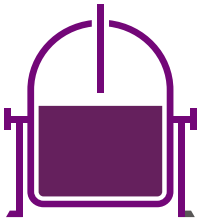
Results

Abrasion resistant steel plate is an important industry material which is applied in severe environment such as mining and transportation. Local downstream industries have to import annually 2,250 MT of abrasion resistant steel plate in high unit price for processing. Therefore, CSC proceeded the development of the plate with HB500 hardness. Owing to the harsh operating environment, abrasion resistant steel plate not only needs extra high hardness but also toughness at low temperature in the light of EH grade of ship plate (CVN-40°C,>37J). Inevitably this is a great challenge to the researchers. By combining alloy design and controlled rolling as well as using direct quenching technology PA500H abrasion resistant steel plate of high strength and toughness with all martensite was successfully developed. The plate is proved to have excellent delayed fracture resistance and similar ballistic performance of CSMS1 plate.

Benefits

Currently, PA500H abrasion resistant steel plate has gradually replaced imported plates and subsequently decreased the outsourcing cost.

Accomplishment



Development of modified double slag process to reduce BOF slag volume

Results

The reduction of BOF slag volume is one of important environmental protection strategies in CSC. A modified double slag process is developed to reduce the generation of BOF slag volume. This process consisted of continuous dephosphorization (1st blowing) and decarburization (2nd blowing) in the same furnace with intermediate deslagging followed by 1st blowing. The process achieves high efficiency operation by reducing lime consumption and utilizing recycled slag of previous heat and decrease the slag weight generation. Furthermore, it also can ensure the dephosphorization ability of BOF.

Benefits

Key technologies of the developed process included:
(1) good dephosphorization ability: dephosphorization rate is up to 50% at blow1
(2) deslagging: control of slag properties and temperature to deslag easily
(3) flexible metallurgy pattern design: operating easily in dependence on hot metal composition and temperature request. Newly developed technology is effective at reducing more than 25% of slag amount and optimizing operation time to diminish the impact on productivity.

4.2.2 Green Business Development

With the global trend of low-carbon economy, green industry and green growth are becoming the focus of international competition. The CSC Group has long contributed to the improvement of environmental protection and R&D for the technologies of green energy, including development and wide application of energy-saving steel products, recycle and reuse of resources, and energy integration. Recent foci are emission reduction and alternative energy. CSC participates in advanced and potential low-carbon businesses to reduce emission and develop renewable energy technologies.

In response to the national energy policy announced in 2011, Bureau of Energy, Ministry of Economic Affairs, promotes the "Thousand Wind Turbines" project. The project aims for 600 offshore turbines with a 3,000 MW capacity and a total of 1,000 MW onshore capacity, as the total installed capacity being 4,200 MW capacity by the end of 2025. They account for 33% of the goal for renewable energy and are expected to be one of the major sources of domestic alternative energy.

In line with the national sustainable energy policy, CSC established Committee for Wind Power Generation Business Development in 2014 to answer the governmental expectations and to create a new core business. The development plans and targets are as follows.

Sea Meteorological Tower under Construction

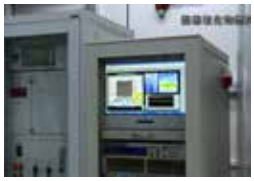
Sea Meteorological Tower

	Short-term (2014-2020)	Mid-term (2021-2025)	Long-term (2026-)
Target	○ Acquiring Contracts of Domestic Wind Power Business	○ Establishing Capacity in O&M Services for Offshore Wind Farms	○ Stabilizing Revenues from EPC+O&M for Offshore Wind Farms
	○ Promoting Wind-Team Alliance for Localization of Offshore Wind Turbine's Components	○ Promoting Localization for Wind Power Supply Chain	○ Acquiring Contracts of Decommissioning & Retrofit for Local Onshore Wind Farms
	○ Seeking Technical Collaboration with International Developers	○ Enhancing Economic Cost Structure of Wind Farms	○ Developing International Wind Power Business
Performance	1. Established the Committee for Wind Power Generation Business Development		
	2. Obtained bid for TaiPower Southern Taiwan Sea Meteorological Tower Engineering		
	3. Participated in The First Kaohsiung International Maritime & Defence Expo 2016		
	4. Submitted Changhua #29 Area Offshore Wind Power Development Site Plan Application to Bureau of Energy as China Steel Power Preparatory Office		
	5. Installed the main structure for sea meteorological tower in 2015 for the TaiPower Southern Taiwan Sea Meteorological Tower Engineering Project		
	6. Held the kickoff meeting to promote the 'Wind-Team Alliance' for localization of offshore wind turbine's components with local supplier in 2016		

In addition to the development of wind power, we also developed high-value-added fuel utilization, motor, automotive, bio-coal, biomass, electromagnetic steel, waste heat recovery, hydrogen applications, solar photovoltaic and other green related business in recent years.

Items		
Dyna RECHI Co.	Summary	Dyna Rechi Co., Ltd., jointly established by Rechi Precision and CSC, is a manufacturer of brushless DC motor (BLDC).
	Performance	The total design capacities of the two factories, locating in Pingtung, Taiwan, and Juijiang, China, are 24 million sets of motor per annum. The production lines are now in commission and Dyna Rechi is now actively working on product certification and promotion.
	Prospect	By taking advantage of the trends of energy saving and carbon reduction, we will continue to assist in the forming of industrial clusters and in enhanceing the competitiveness of Taiwanese motor industry.
Hot stamping parts	Summary	CSC has entered into the auto parts industry by setting up hot stamping parts plants with its strategic partners in Pingtung Taiwan, Changchun China, and Chongqing China successively.
	Performance	Hot stamping parts plants can increase the sales of CSC automotive steel products and achieve the effects of energy saving and carbon reduction for automotive industry.
	Prospect	The usage of hot stamping parts will increase gradually due to further demands for lightweight, energy-saving, and safety for automobiles.
Fukuta Elec. & Mach. Co, Ltd.	Summary	Fukuta is the primary motor core supplier of TESLA, the largest Electric Vehicle (EV) manufacturer in the world. The key material, electric steel sheet, of Fukuta's motor core has been supplied by CSC exclusively from the very beginning of TESLA's trial production.
	Performance	TESLA is a leading company of EV market of the world. In addition to being environmental friendly, its products are also highly acclaimed in both performance and safety perspectives. Its global sales of EV reached 76,243 in 2016.
	Prospect	EV industry has enormous growth potential in the global trend of green energy.
Low temperature waste heat recovery technology	Summary	Thermoelectric Generation (TEG) system technology
	Performance	In 2016, we successfully constructed a 6kW TEG system on slab continuous casting line, which can effectively recover slab sensible heat
	Prospect	Enhancement of long-term operation reliability of the TEG system and development of high value added market applications.
	Summary	Organic Rankine Cycle (ORC) power generation technology
	Performance	A 200kW ORC system was integrated into the heat recovery system of the billet reheating furnace. The power generation is up to 231kW. The annual benefit is higher than 2 million NTD.
	Prospect	Improve the stability of the system cooling water and utilization rate to increase efficiency and power generation.
Biomass energy	Summary	Bio-coal production
	Performance	Actively develop the second generation of low-temperature carbonization system of bio-coal. The produced EFB (empty fruit bunch) bio-coal in the laboratory has passed the self-heating tests.
	Prospect	Continuous to develop the low-temperature carbonization process.
	Summary	Fast pyrolysis of woody biomass to produce pyrolysis oil
	Performance	The technology of co-pyrolysis of wood biomass and EFB has been developed. The bio-crude specifications meet the ASTM standard.
	Prospect	Long term tests
Application of Hydrogen Energy	Summary	Solid Oxide Fuel Cell, SOFC
	Performance	CSC had developed operation technology and smart control invertor for SOFC power system in 2016.
	Prospect	CSC will establish a 50kW SOFC-CHP demonstration system in 2017.

Items		
CSC Solar Corp.	Summary	CSC Solar Corp., established in Oct. 2016, targets to set up an 80MW photovoltaic (PV) system from 2017 to 2019. After completion, power generation of the system is expected to reach 102 million kWh per year.
	Performance	CSC has set up a 1MW demonstrating solar photovoltaic system. The total power generation of 2016 is 761,185 kWh and the total reduction of CO_2 emissions is 665 tons.
	Prospect	CSC Solar Corp. will be the largest roof PV power company in Taiwan. In addition to increasing the share of using green power in CSC Group's energy consumption it will expand its business outward in the future, by utilizing the construction experience and performance of PV system in CSC Group so as to achieve its social responsibility via further reduction of carbon emission.


Technologies for Hydrogen Applications


Thermoelectric Generation


Organic Rankine Cycle


Photovoltaics Systems


Biomass Fast Pyrolysis

4.2.3 Connection to Global Trend

The value elevation for steel plants can be assessed by three indicators: development of new applications, improvement of application technology, and connection to advanced steelmaking technology. CSC practices these three by participating in international auto steel affairs. CSC participates in WorldAutoSteel (WAS), which has several big plans that focus on:

1. Maintaining the attention to steel materials in application,
2. Showcasing application value of next-generation steel materials,
3. Building positive links of steel materials to clean environmental protection,
4. Assisting boost of product competitiveness for steel plants, and
5. Participating in international automotive market development.

AHSS Application Guidelines

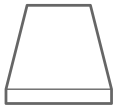
Working in 2016	Content	Benefits
Revision of AHSS Application Guidlines V6.0	WAS revised AHSS Application Guidelines V6.0 in 2016, which included more technical achievements and training information and provided as the guideline of high strength steel property and its application for WAS members.	This helps to promote AHSS as the best material for car bodies by providing consistent information and communication.
Future Trends and Impacts on Steel, 2030+	fka's research in Germany indicated that the efficiency of CO_2 reduction and the change of future vehicle application mode will be two major challenges towards the amount of steel used for car manufacturing in the future. It predicted that the amount for one car will decrease by 145~214 kg by 2030 but increase by 25~87 kg by 2050.	If LCA effect is brought into consideration, the decrease of the amount will be eased up. The regulation of CO_2 reduction directly influence the amount of steel used for car manufacturing. The future vehicle application mode might change the demographic structure of the car, fleet component and Taxi industry. Currently CSC participates WSA to think over together how the future driving concept to be linked with demand and will draw up a large-scale research project of next stage.
Life cycle GHG emissions assessment of automotive and promotion of legislation	The LCA concept was used to account for the whole life cycle emission from materials mining, manufacturing, use, and end-of-life recycling to represent and reflect the true impact of various materials on environment.	WAS collaborated with Technical Univ. of Berlin to promote the legislation of using LCA to replace tailpipe emission regulations. Considering the difficulty of developing mandatory regulations the promotion will be oriented to the policies of volunteer and encouragement. In 2016 communication and promotion with US, Europe, Japan, and China OEM plants was undertaken continuously.
Liquid Metal Embrittlement (LME) project	WAS initiated a new joint project in 2016, which was undertaken by LWF Lab of Paderborn University of Germany. The project aims at the research regarding the issue of LME occurred at spot welding for high strength (>1000 MPa) galvanized steel. The fracture behavior and characteristics of LME, dangerous combination, best parameter of spot welding, new substitute joint method, CAE analysis, NDT detection, etc., were included in the research.	LWF and WAS planned an overall research of three years and will launch gradually step by step.

5.1 Products and Applications

5.1.1 Major Products

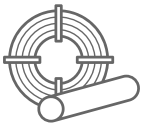
The major products of CSC are steel plates, steel bars, wire rods, hot-rolled coils and sheets, cold-rolled coils, electro-galvanized coils, hot-dip galvanized coils, electrical steel coils. CSC follows the quality policy, "based on customer orientation to keep the innovation of R&D, provide excellent and eco-friendly products and consequently fulfill responsibility to society. " In order to win the appreciation and trust of customers and to assist customers to succeed, CSC adopts two policies, "R&D the advanced products to speed up the development of new products and strategic steel products, and upgrade to increase the value", and "Try best to save energy, reduce GHG emission, improve the value of by-product gas, inhibit the hazardous substance, and fulfill corporate social responsibilities" to develop all kinds of operational activities.

The production of crude steel in 2016 was 9,620,735 tons, an increase of 399,881 tons compared with 9,220,854 tons in 2015, and the growth rate is about 4.33%. The productivity of employees is 932.06 tCS/per person per year.



Steel plates

Shipbuilding, bridge, steel structure, oil country tubular good (OCTG), storage tank, boiler, pressure vessel, truck chassis, general structure part.

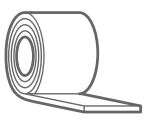


Steel bars

Bolt, nut, hand tool, loudspeaker part, automobile and motor cycle part, machinery part.

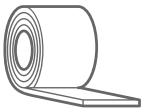
Wire rods

Bolt, nut, steel wire, steel rope, hand tool, welding electrode, tire core, umbrella rib, roller chain.



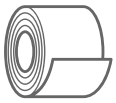
Hot-rolled coils and sheet

Steel pipe and tube, vehicle part, container, pressure vessel, hydraulic jack, cold rolled and galvanized substrate, light shape, general formed part.



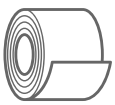
Cold-rolled coil and sheet

Steel pipe and tube, steel furniture, home appliance, oil barrel, automobile panel, substrate for galvanized and coasted steel sheets, general hardware part.



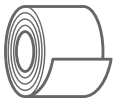
Electro-galvanized coil

Computer cases/part and accessory, home appliance panel/part and accessory, construction material, furniture hardware and components.



Hot-dip galvanized coil

Automobile and home appliance part and accessory, computer case part and accessory, PPGI construction material.



Magnetic coil

Motor, transformer, stabilizer.

Production

(10,000 ton)

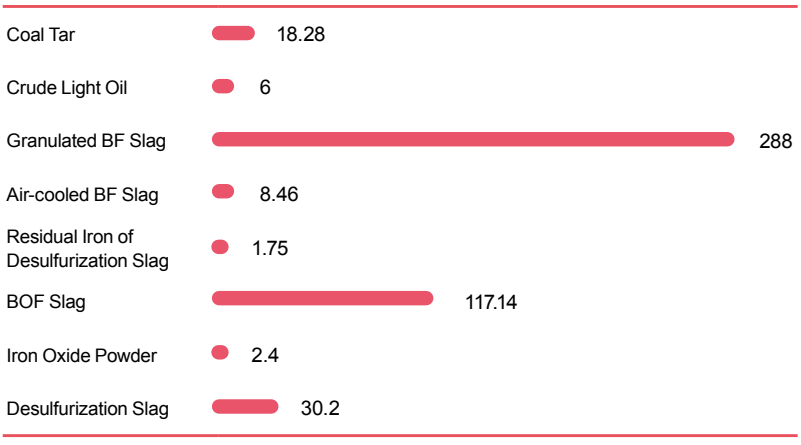
	2011	2012	2013	2014	2015	2016
Steel Plate	105.7	98.4	94.2	96.4	92.1	95.4
Steel bar	70.1	56.4	59.9	62.1	55.3	57.2
Steel wire rod	128.3	109.7	132.8	131.7	118.4	129.4
Hot rolled	256.4	227.3	216.2	237.6	202.4	230.2
Cold rolled	304.3	320.6	358.5	365.9	310.5	329.1
Slab	10.1	25	21.3	9.8	34.8	72.9
Cast iron	0.6	0.9	0.5	0.5	0.7	0.9
Summary	**875.6**	**838.3**	**883.4**	**904**	**814.2**	**915.3**

5.1.2 Byproducts

Byproducts from CSC productions include coal tar, crude light oil, BF slag, BOF slag, iron oxide powder, and residual iron of desulfurization slag. Residual iron of desulfurization slag and part of granulated BF slag are sold to domestic businesses, and others are processed through related industries to be provided to chemical, construction, civil engineering, electrical, commodity, and other industries.

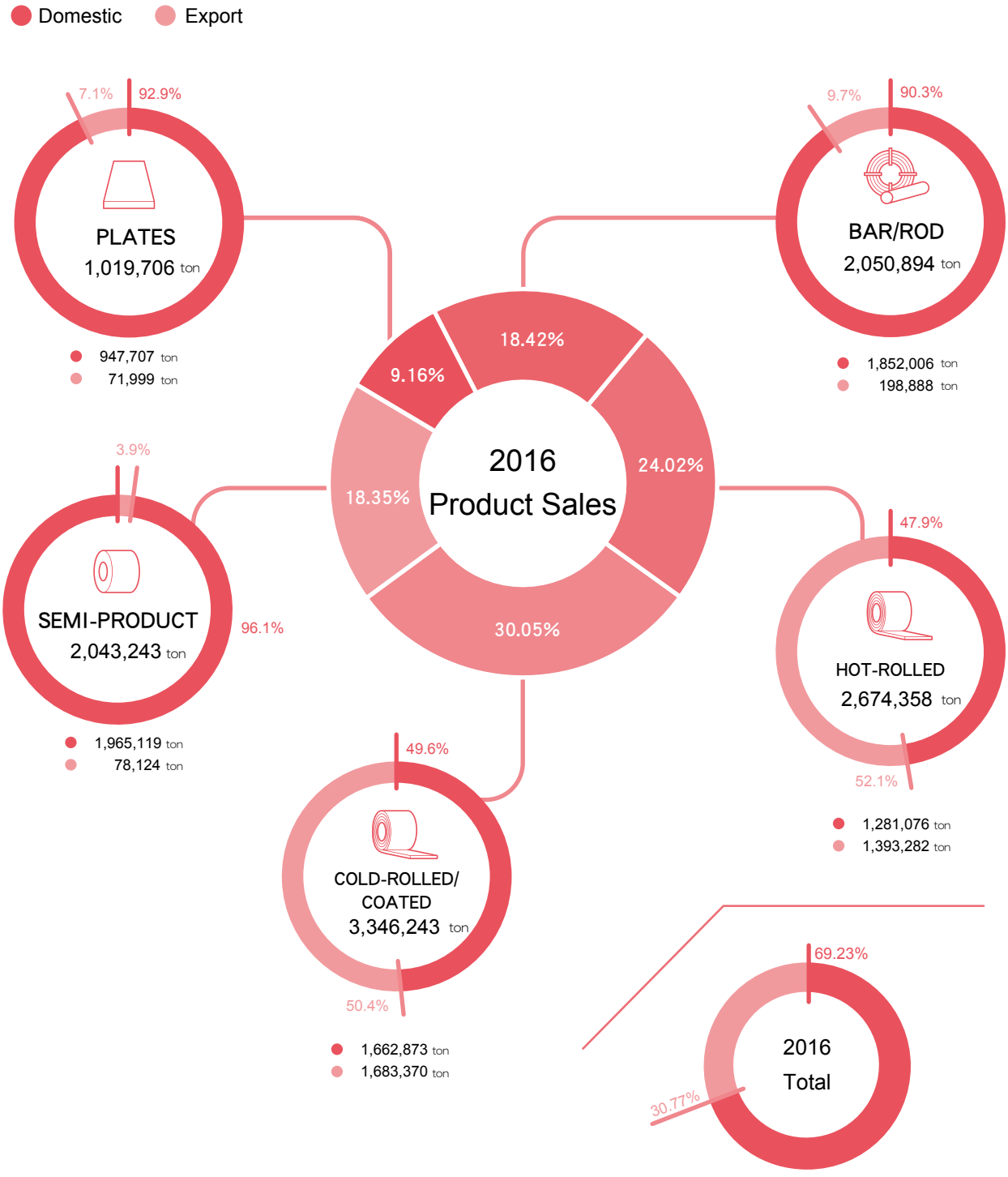
Annual Production

(10,000 ton)



5.1.3 Product Sales

In 2016, the total sales of steel products was 11.134 Mt, an increase of 1.606 Mt (14.4%) compared with 2015. Domestic sales accounted for 69.23% (7.709 Mt), with the main items of cold-rolled/coated steel products 30.05% and hot-rolled products 24.02%. Export sales accounted for 30.77% (3.426 Mt), with the major exporting markets of China, Japan, and Southeast Asia.



Export Sales by Country in 2016

5.2 Quality Control

The principles of CSC's quality control system are as follows.

- Under the instruction of quality policy that focuses on customers, the mandatory processes for identifying the quality management system include 11 customer oriented processes, 9 supporting processes, and 13 management processes. Moreover, the quality policy is promoted through the process approach to demonstrate the efficiency and effectiveness of systematic operation.
- Carefully evaluating the company's context and visions, CSC set operating policy and sufficiently provided resources to each procedure and management activity.
- Customer satisfaction is the target for all the processes, and CSC actively operates to provide high-quality products with no hazardous substances.
- CSC monitors, measures, and analyzes on all kinds of products and processes, and keeps improving the system and makes the company sustainable through internal and external audit, corrective action, preventive action, improving projects of the quality and processes of products, management and reviews, and other activities.

Under the above principles, the various business activities follow the quality policy and business strategies. In 2016, the ratio of high-grade steel was 56.04%, which achieved the company's business objectives, and other aspects such as new product development, process improvement and quality management system also had good performances.

5.2.1 Quality Management System Certification

Special alloy products quality management system obtained certificates of ISO 13485 and AS 9100 to achieve the stage goal to enter medical-device and aerospace industries. Steel products quality management system passed the annual surveillance audit to maintain the effectiveness of quality management system. In addition, CSC obtained product certifications of the EU, Japan, Thailand, Malaysia, and India.

5.2.2 Product Development and Process Technology Enhancement

In 2016, 55 development projects were completed, and selected highlights are as follows.

Achievements of new product development

Category	Benefits/Highlight
Plate	For the goal of localization production, the research and development of offshore wind turbine usage has achieved for EN10025-4 S460ML in thickness 115mm and it could be applied for mono-pile type construction made in Taiwan.
Bar and rod	With the new technique of slab cutting into bloom and rolling into bar & rod, the T-yoke with high permeability and high tough fastener steel were developed. The innovation brings about the advantages of asset activation.
Hot rolled sheet	JSH440B high expandability automotive steel and its fundamental technology were developed, which is helpful to expand automotive materials market.
Cold-rolled sheet	DC04-C490, a work hardening type high strength steel, was developed to meet the demand of markets of automotive and precision deep drawn components.
Hot-dip galvanized sheet	CR5 galvanized automotive outer steel sheet was developed and passed the mold testing evaluation and succeed certified by General Motors.

Enhancements of process technology

Category	Benefits/Highlight
Steelmaking process	Convex roller heavy reduction technology for steelmaking process is established. This technology is helpful for enhancing the quality of slab center and carrying off-shore wind power plate forward higher thickness (95~120mm) and lower temperature toughness (-50°C).
Plate	The cooling uniformity and the straightness of SM570 sliced plate is improved by directed quench equipment and consequently cold-leveling treatment, respectively. The customer complaints also reduce. It saves production cost 13.3 million per year.
Bar and rod	With low temperature rolling technology, the discharge temperature of bloom could be reduced. The energy consumption for furnace decreased about 4.5%, and saved cost of 8.62 million per year.
Hot rolled sheet	The innovation technology of electrical steel was established by processes optimization of the continuous casting cooling and heating furnace temperature control and the RJ was greatly reduced.
Cold rolled sheet	With improvements of edge wave of thick CQSF cold-rolled products of No.2CAL and the rolled-in objects of No.3CAL, we successfully reduced the downgrade rate and client claims.

Achievements of new product development	
Category	Benefits/Highlight
Electrical steel	A low-cost type 65CS470C was developed by adopting thin hot band gage to make it possible to roll at No.3PLCM. The capacity saved can be shifted to cope with the rapidly rising demand of high-level electrical steel products.
Special alloy products	ASTM F136 plate used for medical devices was developed. Customers processed to make bone plates; AMS 4911N for aerospace was also developed. Customers processed to make missile tail wings and helicopter slide rails.

Enhancements of process technology	
Category	Benefits/Highlight
Hot-dip galvanized sheet	Optimizing the process with low roughness work rolls, we managed to enhance the quality of anti-finger-print galvanized products of No.2CGL. They have similar appearance and physical and mechanical properties as the products of No.1CGL, which means an outstanding quality improvement of No.2CGL on the computer case products.
Electrical steel	The process enhancement of 35CS230 was completed, which includes optimizing the settings of secondary cooling during continuous casting, adapting smooth heating and reducing strip thickness in hot-rolling process, reducing the reversing passes of cold-rolling at No.3RCM, and standardizing the annealing pattern at No.3ACL.
Special alloy cold-rolled sheet	By double-side embossing instead of one-side, adjusting oil scraper pressure, pouring tension, suspension system, we successfully produced embossed titanium sheet coils with good surface quality and no vibration roller marks.

5.3 Green Products

5.3.1 Types and Benefits

CSC is the upstream supplier of steel-using industries and is dedicated to the development and supply of more green steel products to help in establishing an efficient and profitable green steel supply chain. As CSC has received more orders for high-grade products, the percentage has increased to 56.04% in 2016. The 3.727 million tons high-grade steel can make 6.939 million tons of external carbons reduction. The major roles of them in green supply chains are as follows.

Product	Green Benefits	Applications
Wind power steel	The use of 75~115 mm thick plates reduces materials used in construction and meets environment protection policy in energy saving and carbon reduction.	Plate of S355ML/S460ML offshore wind turbine generator
High performance steel plate for bridges	Enhances the safety and weather resistance of bridge structures, reduce maintenance costs and prolongs life of bridges .	Buildings
High-strength automotive steel	Improves safety of passengers and allows reduction of automobile weight.	Automobiles
Non-chromate, anti-finger-print or dull-surface coating, hot-dip and electro-galvanizing steel (GI/EG)	All products apply hexavalent-chromium-free coating which is non-hazardous to health. The product life cycle is extended.	3C products, home appliances, furniture, and structural parts

High-level and ultra-thin electro-magnetic steel	The motor temperature can be reduced, the motor can be made lighter, and therefore can be more efficient.	Motors of compressors, electric automobiles
Heat-resistant nickel-based alloy plate	It can effectively extend the update cycle of annealing furnace inner cover, save energy, and reduce carbon emission.	Annealing furnace

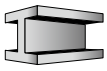
Studies have shown that once 1% of all motor efficiencies in Taiwan were promoted, about 1 billion degrees of power supply can be saved per year. CSC is able to supply 0.35mm thickness of the full range of electro-magnetic steel, and gradually developed 0.25, 0.20, 0.15mm and other ultra-thin products, which can be of great help for energy-saving motor products.

5.3.2 Carbon Footprint and Life Cycle Assessment

According to PAS 2050, CSC has completed the carbon footprint analysis of 20 types of steel products in 2012 and passed the verification by third party. In 2017, CSC will process carbon footprint analysis again to update all activity data and emission factors in accordance with ISO/TS 14067 which was declared in 2013. CSC provides certificated carbon footprint information to customers.

CSC worked with National Taiwan University in 2015-2016 to build the carbon footprint methodologies of earthquake resistance steel construction and process-saving steel's application. For the methodology of earthquake resistance steel construction, Taiwan Earthquake Loss Estimation System (TELES) was implemented to evaluate the GHGs reduction benefits via rebuilding scenarios in an earthquake event of class 6 Richter magnitude scale. For the methodology of process-saving steel's application, the fuels consuming for individual heat treatment patent was analyzed to identify the benefits from process-saving steel.

Earthquake resistance steel



The methodology is based on the rebuilding activities' GHGs emission integrated the database of cities' building investigation for reinforced concrete (RC), steel construction (SC), and steel reinforced concrete (SRC), and then evaluated the GHGs reduction benefits via rebuilding scenarios in an earthquake event of class 6 Richter magnitude scale by TELES. In Kaohsiung city scenario, the earthquake event is 6 Richter magnitude scale and 10 km depth in Chishan Earthquake Fault. The result of net GHG reduction for rebuilding by RC replace by SC is 367 tonne CO_2e that reduces 25% compared to rebuilding via RC replace by RC. The rebuilding scenario of RC replace by SRC shows the net GHG reduction is 3.91 tonne CO_2e. The summarized results are as follows for city of Kaohsiung, Taipei, and Taichung.

Net GHG reduction for rebuilding (tonne CO_2e)

Scenario	RC replaced by SC	RC replaced by SRC
Kaohsiung	367	3.91
Taipei	44,600	2,840
Taichung	10,600	245

Process-saving steel

The methodology of process-saving steel's application is focused on free heat quenched and tempered steel's application. The benefit of GHG reduction is from the energy saving for quenching and tempering. The result shows that the net GHG reduction is 38.1 kg CO_2e per tonne process-saving steel for using nature gas as heating fuel. If the heating energy is electricity from coal-fired power plant, the net GHG reduction is 65.1 kg CO_2e per tonne process-saving steel.

5.3.3 Hazardous Substance Control

CSC includes the index "the qualifying rate of hazardous substance in steel products and special alloy products (including outsourcing process products) meeting the regulations" into the directives of division operation and lists it into management and tracks. The qualifying rate of the execution in 2016 was kept at 100%, same as that from 2013. CSC does not add any hazardous substances in the processing of all products, and all products meet the requirements of national and international regulations. CSC also observes and complies with the bans imposed by the EU on RoHS restriction requirements regarding cadmium, mercury, lead, hexavalent chromium, PBB, PBDE and 169 items of REACH (Registration, Evaluation and Authorization of Chemical Substances) SVHC (Substances of Very High Concern) list.

5.3.4 Light Rail Transit

"Rail transport" is the best transport solution for energy saving and carbon reduction. It not only increases the domestic output of rail industry but also promotes the quality of life and urban development through the land joint development at stations, and hence benefits the tourism industry. "Light rail transit" is an efficient way for public transport. By combining the exquisite tram design with local characteristics, it creates a marvelous mobile city landmark. A successful light rail transit represents the image of a city. Its affinity and convenience always attract people to take it worldwide.

With the values of "teamwork, entrepreneurial approach, down-to-earthness, pursuit of innovation", CSC will integrate all the resources in its group to develop the rail business. We are aiming and dedicated to providing the public with safe, comfortable, and environment-friendly light rail transit.

The First Tram of Danhai Light Rail

Groundbreaking Ceremony for the Second Phase of Kaohsinug Light Rail

Chronicle of Events	The Turnkey Project First Phase of Danhai Light Rail Transit
2014.11.07	CSC is announced as the most advantageous tender company in procurement evaluation committee meeting.
2014.12.05	Signing up the contract.
2014.11.23	Notice To Proceed (NTP)
2016.11.09	Deliver the first tram for test as per contract milestone.
	The Circle Line Turnkey Project Second Phase of Kaohsinug Light Rail Transit
2016.08.10	CSC is announced as the most advantageous tender company in procurement evaluation committee meeting.
2016.09.09	Signing up the contract.
2016.10.11	Notice To Proceed (NTP)
2017.02.09	Groundbreaking ceremony.
	The Mechatronics Engineering Turnkey Project of Ankeng Light Rail Transit
2016.06.01	CSC is examined and rated as a qualified company for this bid.
2016.09.27	Finish price negotiation with owner. CSC is awarded the contract.
2016.11.11	Signing up the contract.

5.4 Optimization of Customer Service

CSC provides multi-phase services for before, during, and after sale and supplies steel products in the right quality & quantity and at the right time. CSC makes proper use of outward service workforce, in-plant technical support, and R&D experts to assist customers in fulfilling requirements and solving product use and technical problems.

5.4.1 Service Performances

With the visions of winning customers' trust and helping them succeed, the Technical Service Section of Metallurgical Department aims to assist customers in technical advancement and to promote steel industry upgrade. Customer service engineers are the representatives of customers to request for developing and supplying products satisfying customer requirements; they also can be the representatives of CSC to provide application knowledge and problem solving in product use. To strengthen and implement customer service, the Technical Service Section sets clear targets for relative technical services, and reviews performances every month. 2016 technical service achievements:

2016 technical service performance	Market quality feedbacks for in-plant quality improvement: 38 cases. Customers' process improvements: 198 cases.
	Industrial material usage trend surveys: 14 cases. New products development: 8 items. New auto material certification: 31 items.
	Technical seminars and workshops: 12 sessions (domestic and international). Visits to key customers: 111 times. Overseas technical missions: 328 man-days (Malaysia, Indonesia, Thailand, Vietnam, Spain, Italy, Japan, South Korea, and China)

5.4.2 Customer Satisfaction

CSC commissions academic institutions to conduct customer satisfaction survey every year. Domestic and foreign customers are surveyed, and issues of concern are reviewed as an important reference for developing operational guidelines. In 2016 the satisfactions are 74.76 for domestic customers and 74.46 for export customers comparing to 73.00 and 71.72 in 2015.

Item	2012	2013	2014	2015	2016
Score (Domestic)	70.67	70.88	73.00	73.00	74.76
Score (Export)	70.70	67.24	71.20	71.72	74.46
Target	60+	60+	60+	60+	60+
Coverage (Domestic) (%)	51.3	50.7	54.9	52.7	61.23
Coverage (Export) (%)	17.5	13.3	11.3	57.8	32.97

By the regulations governing customer satisfaction measurement, the overall satisfaction score should fall in the "good" grade (60< score <=80) or above. Coverage (domestic sale) = number of questionnaires reclaimed / number of questionnaires sent (not all customers of domestic sale). Coverage (export sale) = number of questionnaires reclaimed / number of questionnaires sent (all the customers of export sale).

	Domestic	Export
Customer satisfaction	**74.76**	**74.46**
Best items	The customer service	The quality
	The quality	The customer service
	The e-Commerce services	The quantity and account

The top 3 items for domestic customers are customer service, quality, and e-Commerce services. The top 3 items for export customers are quality, customer service, and quantity and account. The lowest-scored item of domestic and export customer is price of products. For issues, responsible Units are required to establish and implement corrective action plans, specify the status of implementation in the improvement report, submit results for discussion at Steel Product System Management Review Meeting, and follow-up the effectiveness of implementation. Customer suggestions in the survey, results of plan implementation by Units, and relevant policy documents are published on the e-Commerce system. For the next year, these are delivered to customers together with the new survey questionnaire. CSC aims to strengthen mutual understanding and trust by showing respect and address doubts for customers.

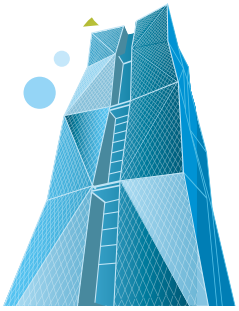
5.4.3 Customer Privacy

At CSC, we are committed to providing customers with the best service and the best protection for the information provided by customers. In 2016, no complaint regarding compromising customer privacy or customer information was recorded.

- All CSC IT equipment is protected by antivirus software to prevent computer virus spread through e-Commerce.
- e-Commerce inquiries and operation are account- and password-protected to ensure only corresponding customers, suppliers, and transporters access data.
- The Regulations on Management of Digital Certificates for Use on e-Commerce Systems is established to ensure access to the e-Commerce system only with valid digital certificates.

6.1 Visions and Principles of Energy and Environment

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 (key performance indicator) 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 BAT (Best Available Techniques) and renewable energy applications.

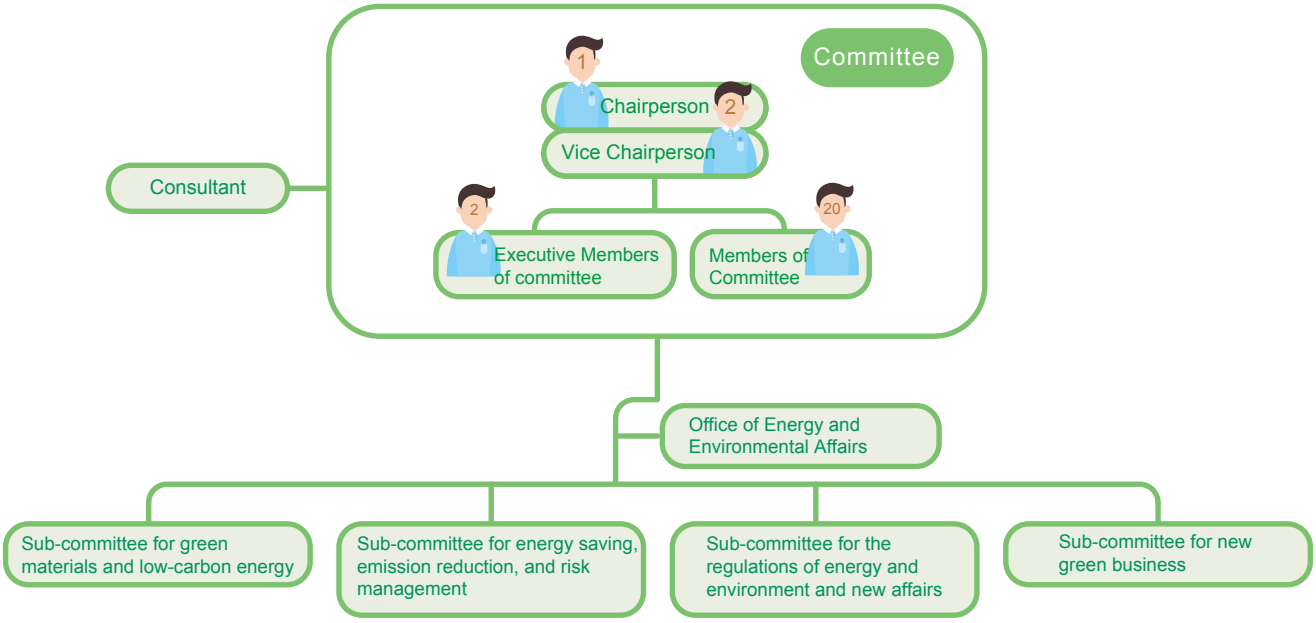
To support the governmental low-carbon economy policy by developing energy-efficient and emission-reducing products and engaging in new green businesses.

6.2 Framework of Environmental Management Organization

The Environmental Protection Department and Utilities Department under the Production Division is responsible for tasks related to environmental protection, energy conservation, and emission reduction, and the Iron and Steel Research and Development Department is responsible for developing and promoting relevant technologies. In addition, the cross-department Committee for Energy Conservation and Committee for Environmental, Safety and Health Management teams up with CSC Group Committee for Energy and Environmental Promotion to reinforce communication and coordination within the Group.

6.2.1 CSC Group Committee for Energy and Environmental Promotion

The Office of Energy and Environmental Affairs (EA) was established in Mar. 2011. In Apr. 2011, CSC Group Committee for Energy and Environmental Promotion was formed and chaired by the CSC Chairperson. The Committee aims to improve the group's energy and environmental performances by strategic planning, risk management, and collaboration with international and domestic industries. EA serves to assist in implementation and PDCA continual improvement.



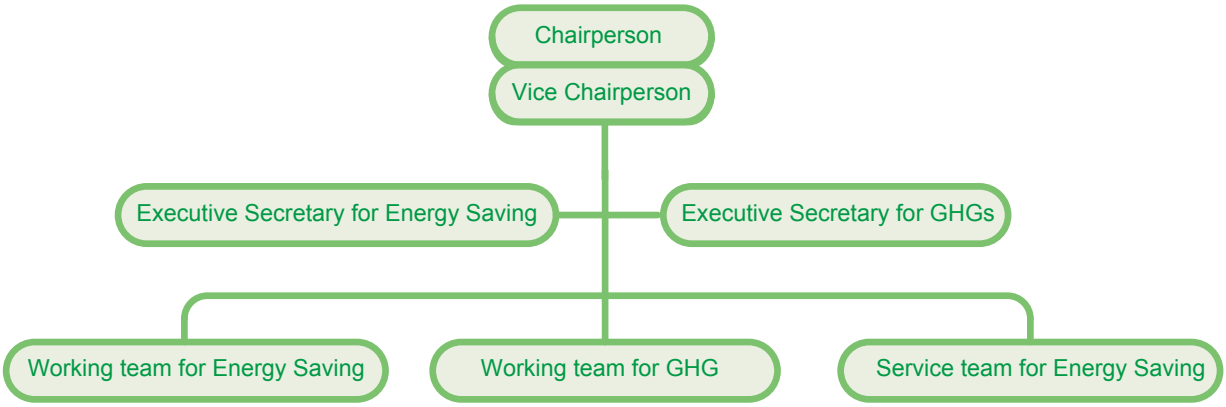
6.2.2 Environmental, Safety and Health (ESH) Management System

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 ESH Management System, launched in 2005. Strategic decisions are made by Committee for ESH Management, chaired by the Executive VP. ESH policies are approved by the Chairperson before implementation and subject to annual external audit. ISO 14001: 2015 was announced on Sep. 15, 2015. CSC expects to complete the revision and obtain the certificate in June 2018.

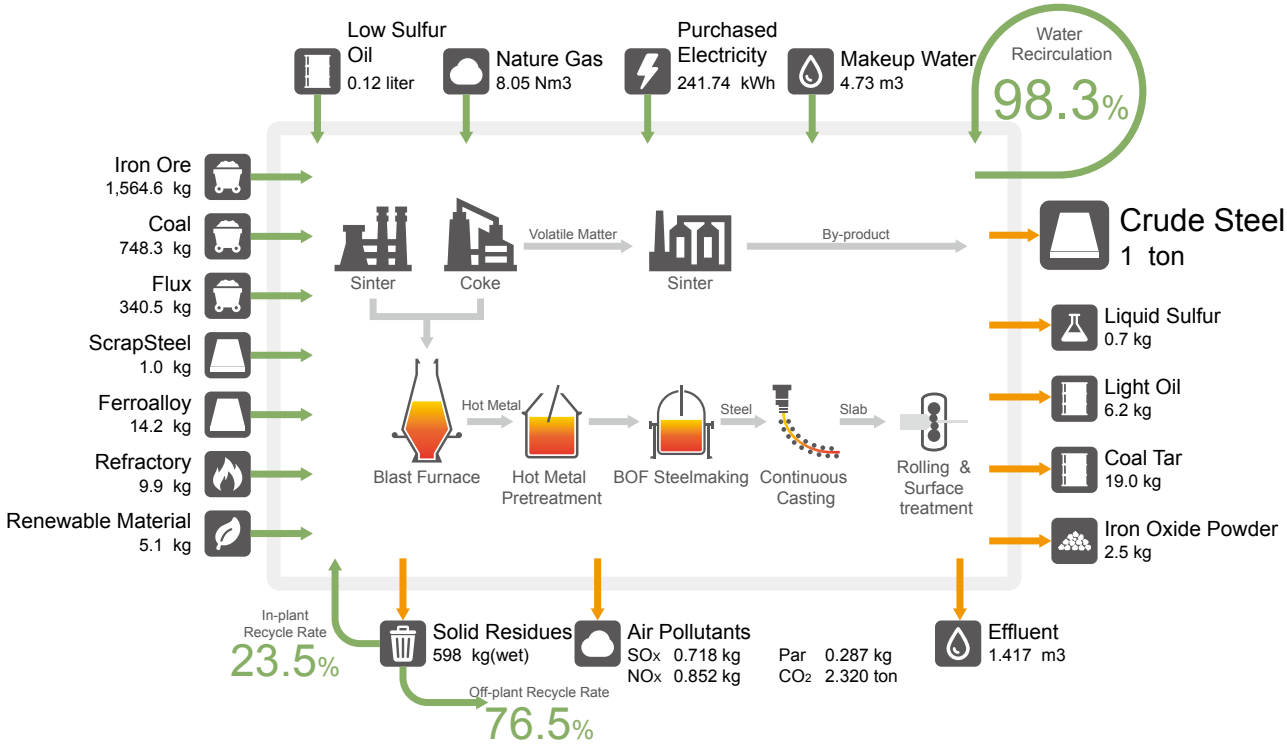
6.2.3 Committee for Energy Conservation

For effective reduction of energy expenditure, the Committee for Energy Conservation was formed and chaired by Production Division VP. The three Teams of the Committee are responsible for energy saving and emission reduction work in CSC plants. For performance improvement, ISO 50001 Energy Management System (EnMS)

was implemented in 2011 and incorporated into ESH Management System with third-party verification. The Management Systems and the Committee serve the purpose of energy conservation and continual improvement.



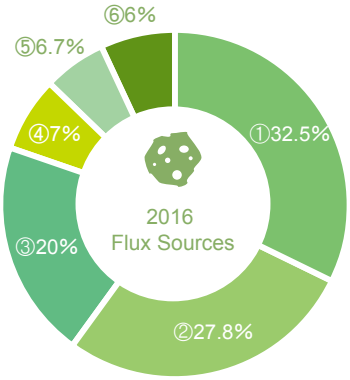
6.3 Energy and Resources Usage



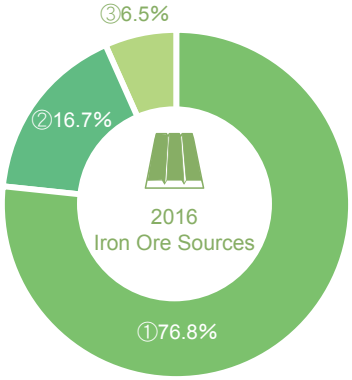
6.3.1 Material Input

In 2016, a total of 3.0 Mt flux, 8.3 Mt coal, and 16.7 Mt iron ore were used. The marble and serpentine from Hualien meet 27.8% of the demand, and the remaining demand is met with imports. For coal and iron core, supply is imported as they are not domestically available.

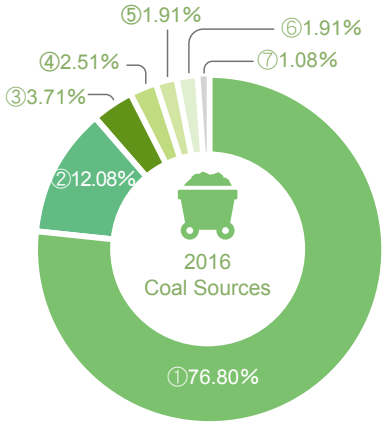
In 2016, CSC utilized 59,103 t regenerated raw materials, which account for 0.229% of total input materials. These include scrap, iron recovered from De-S slag, marine waste oil, waste acid, etc. 1.35 Mt solid residues were recycled in-plant, which account for 5.2% of total input materials.



① Japan	④ Vietnam
② Taiwan	⑤ China
③ Philippines	⑥ Thailand



① Australia
② Brazil
③ Canada



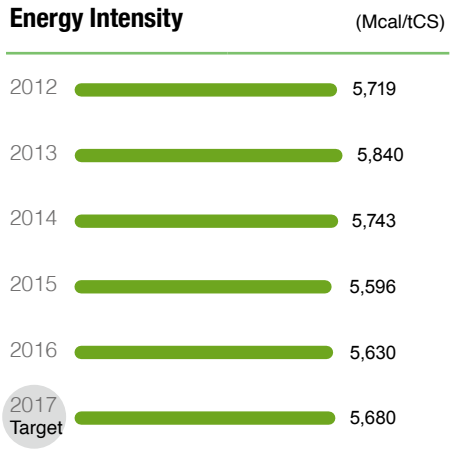
① Australia	⑤ Mozambique
② Canada	⑥ Russia
③ Indonesia	⑦ Others
④ China	

6.3.2 Energy Consumption

The coking coal in the steelmaking process transforms to byproduct gases which can be used as fuel in process 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 will be met by purchsed electricity from Taipower.

2016 Primary/Secondary Energy Consumption			
Primary	Coal	230,436,825	GJ
	NG	3,019,721	GJ
	Diesel Oil	115,099	GJ
	Gasoline	6,467	GJ
	LS Oil	46,692	GJ
Secondary	Purchased Electricity	21,772,241	GJ
Self-Produced Secondary Energy	Steam	3.62	million ton
	COG	20.01	100 million m^3
	BFG	146.51	100 million m^3
	LDG	9.76	100 million m^3
	Cold Blast Air	97.96	100 million m^3
	Oxygen	9.38	100 million m^3
	Nitrogen	11.76	100 million m^3
	Argon	17.84	Mm^3

Note: Purchased electricity is converted to input energy by efficiency



Due to the achievement in energy saving and more back-up steel produced, the energy intensity for 2016 is 5,630 Mcal/tCS (ton Crude Steel). The energy intensity target for 2017 is lower than 5,680 Mcal/tCS.

The total GHG emission for the 6 energy related categories in scope 3 data is 3,326,559 tCO_2e. With an adequate GHG intensity of fuel as 66,420 kg/TJ, the estimated scope 3 energy consumption is 50,083,690 GJ.

6.4 Climate Change and CDP

CSC conducts GHG inventory and carbon reduction projects every year and discloses GHG management information to stakeholders. Inventory results are registered on the national GHG platform and disclosed in CSR reports. In addition, CSC participates in the Climate Action of World Steel Association and CDP's climate change and water programs every year to continuously improve in carbon reduction and climate change mitigation and to achieve corporate sustainability.

In response to climate change and elevated awareness of energy and environmental conservation, the industry needs to take its responsibility to survive. For CSC, potential, substantial impacts include

01: External constraints of ESH issues and related policies and regulations (GHG Reduction Act, energy taxes, carbon taxes, etc.), if excessive, will affect the fairness of international competition.

02: Low-carbon energy, low-carbon electricity, and carbon footprint are gradually becoming important items for the steel industry and more influential on competitiveness.

For these impacts, CSC not only adjusts its organization and develops strategies inside CSC Group but also reinforces collaboration with international and domestic peers, green energy industries, suppliers, and the academia, to create advantageous operating conditions.

CSC has identified potential legal, physical, and reputational risks from climate change and their corresponding opportunities. Strategies are developed respectively in three aspects: management and development of water resource, response and adaptation to disasters, and reinforcement of city and value-chain cooperation.

	Item	Potential Risk	Impact Level	Opportunity	Positive Impact	Impact Level	Countermeasure
Legal Risk	Carbon tax	Increasing operating costs		Fuel/Energy tax	Stimulating investment in local new and renewal energy; reducing dependency on import petrochemical fuel		· Environmental protection · Administrative justice · Assisting the government in drawing up policies and regulations that can correctly connect with the world
	Cap & trade	Increasing operating costs		Cap & trade	Reducing new plant quantity; moderating local competition		
	Product emission standards	Increasing operating costs		Product emission standards	Increasing demand and market for high energy-performance green steel products		
	Air pollution limitation and control (power plant emission standards)	Increasing operating costs		Product labels and standards	Increasing demand for and sales of highly efficient products		
	Mandatory declaration	Increasing operating costs		Voluntary agreements	Reducing operating costs through voluntary reduction programs and carbon credit acquirement		
Physical Risk	Changes in extreme rainfall and drought frequency	Reducing/ interrupting production Capacity		Increasing product demand	Increasing steel demand for infrastructures damaged by floods and typhoons		· Harvesting rainwater for reuse · Increasing seawater desalination and domestic wastewater recycling and improving water supply pipelines · Preparedness for extreme torrential rain · Building facilities for collecting and processing wastewater runoff
				Reducing operational risk	Producing biomass fuels with bio-waste (e.g. driftwood) caused by increasing typhoons		
	Changes in extreme temperature frequency	Increasing operating costs		Increasing product demand	Increasing steel demand for repair and maintenance due to accelerated corrosion by high temperature		
Reputational Risk	Information and communication of climate change	Causing one-sided or incorrect information		Increasing product demand	Improving reputation by devoting to emission reduction and adaptation		· Establishing carbon reduction roadmap and strategies · International and domestic collaboration · Promoting low-carbon living in CSC Group

SJP for Carbon Credit Trading and Management

CSC was granted 8.76 million tons of carbon credits in 2014 from the Early Action and Offset projects. To better manage carbon credits and to illustrate the procedures and responsibilities, adopting advices from experts meetings of Taiwan EPA, CSC set up "SJP for Carbon Credit Trading and Management" in Aug. 2015. The SJP is included into CSC's ISO 14001 environmental management system. CSC Group company Dragon Steel has purchased 4 million carbon credits from CSC according to this SJP in 2017.

Climate Action Member

Since 2008, CSC has participated in CO_2 collection action and conferences of BAT technologies in carbon reduction of World Steel Association every year to help construct the database of GHG data and reduction technologies of global steel industries. Through this, CSC gains experiences and advances in energy saving and carbon reduction by following the international trend.

Climate Action Member

6.5 Green Process

6.5.1 GHG Inventory

CSC established GHG Inventory System and constructed GHG Management Regulations by ISO standards, referencing Taiwan EPA GHG inventory and registration guidelines, ISO 14064, and inventory guidelines of IPCC, World Steel Association, and WBCSD. Inventory data is subject to internal audits and third-party verification every year. According to EPA policy, verified data shall be submitted to the website established by EPA year by year as well.

In 2016, the audited inventory result GHG emission in total is 22,316,567 tCO_2e with scope 1 as 21,042,990 tCO_2e and scope 2 as 1,273,577 tCO_2e (with 2015 electricity intensity). The total scope 3 emission is 3,729,2337 tCO_2e (not audited and without investment items).

2016 Scope 3 GHG Emissions (tCO_2e)	
Purchased Goods and Services	223,023
Capital goods	709
Fuel and energy related activities	2,093,163
Upstream transportation and distribution	1,029,512
Waste generated in operations	1,013
Business travels	1,755
Employee Commuting	5,200
Upstream leased assets	136
Downstream transportation and distribution	195,917
Processing of sold products	170,616
Use of sold products	6,989
End-of-Life Treatment of Sold Products	5
Downstream leased assets	653
Franchises	647
Total	3,729,337

6.5.2 Energy Saving

Energy Saving Projects

Adopting BATs of the steel industry in the world, CSC has accomplished 109 energy saving projects in 2016, which saved 472,776 Gcal (1,979,419 GJ or 52.5 million liter oil equivalent), reduced 160,000 tCO_2e emission, and saved 646 million of energy cost. Key projects include #1 blast furnace reducing 5 kg/tHM of fuel rate.

Category	Items	Energy Saved	Unit
Electricity	84	47,572,234	kWh
Fuel Gas	4	4,289,440	NM^3
Industrial Gas	8	3,646,964	NM^3
Steam	6	121,561	t
Water Systems	3	706,010	M^3
Others	4	25,243	KLOE
Total	109	52,531	KLOE

Leading Model in Electricity Saving, 2015

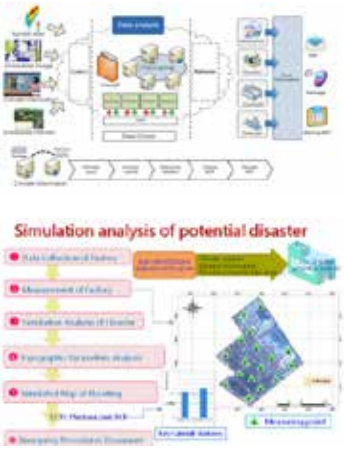
Outstanding Energy-saving Achievements Award, 2016

Taipower Demand Bidding Special Award, 2016

Enterprise Vision Award for green power procurement, 2016

Climate Change Adaptation System

To control the risk of climate change and to respond in time, CSC cooperated with Cheng-Kung University to develop Climate Change Adaptation System. This system may provide trigging signals for decision making after analyzing the real time data from the Central Weather Bureau together with the historic database. The database of disaster potential analysis of flooding, earthquake, tsunami for the factory and access roads have been set up while the emergency responses system has been developed. The system will be completed and in service in 2017 to help CSC stabilizing production, reducing loss, and increasing capability to respond when emergency happens.



Carbon Reduction Roadmap and Strategies

From 2016 CSC changed its carbon reduction target and strategies to the total carbon reduction amount of all its carbon reduction projects. The reason is the Greenhouse Gas Reduction and Management Act, promulgated in July 2015. To fulfill the 2030 Intended Nationally Determined Contribution (INDC) and the 2050 target, the government will set up a total amount control target for each 5-year stage. Therefore, the roadmap of carbon intensity will not be suitable.

CSC set up 330,000 tCO_2e by 2020 for the first 5-year stage (2016-2020). The major strategies are to promote 2020 energy saving action plans, to adopt low carbon energies, and to R&D and apply breakthrough technologies continuously.

6.5.3 Environmental Loading Reduction and 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 CSC 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 variation. In 2016, no investment over 0.2 billion was proposed.

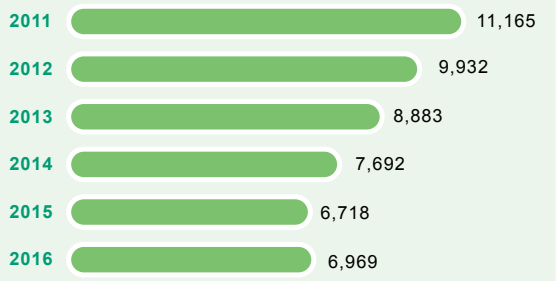
6.5.4 Air Pollution Control

Environmental Monitoring and Measurement

CSC Environmental Monitoring Center oversees six air quality monitoring stations and has two digital boards that display air quality data for the reference of citizens. In case of abnormality, citizens can call CSC at 886-7-802-1111#5592 in office hour or #3702 in off time. For stationary pollution sources, 29 continuous emission monitoring systems serve to the control of traditional pollutants emission intensity and quantity, and 25 are connected to Kaohsiung City Environmental Protection Bureau (KSEPB) for government supervision.

SOx

(t/year)

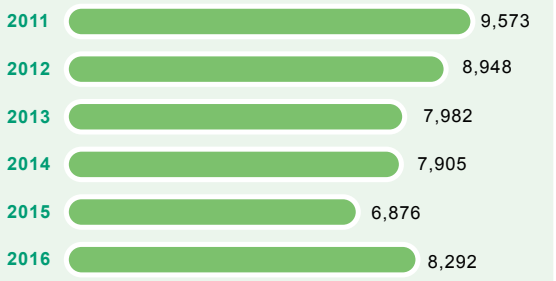


Countermeasures EIA Commitment 34,900 kg/day

Adding alkaline desulfurization equipment to #4 coke oven plant and desulfurization equipment to the sinter plant and power plant boilers to reduce SOx emissions by 5,039.6 t/year in 2018.

NOx

(t/year)

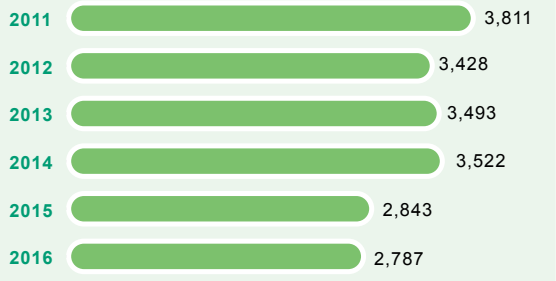


Countermeasures EIA Commitment 34,600 kg/day

Adding denitrification equipment to power plant boilers and #2 sinter plant to reduce NOx by 1,311.4 t/year in 2018. Even though using environmental coal, the coal firing boilers of #2 power plant installed SNCR in 1999. With the newly revamped denitrification project from 2014, it is possible to reduce NOx concentration from 230 ppm to 120 ppm by low NOx burners. When together with SNCR and the newly installed SCR, it is possible to further reduce it to 50 ppm, lower than 80 ppm, the tightened standard of Kaohsiung.

PM

(t/year)

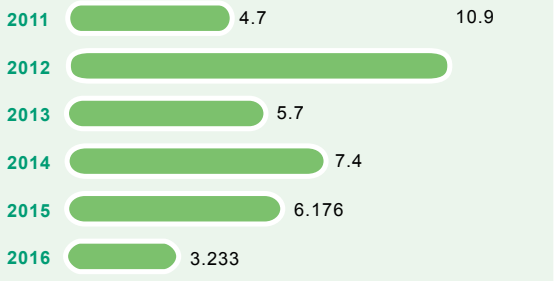


Countermeasures EIA Commitment 19,500 kg/day

Enhancing efficiency of electrostatic precipitators in sinter plants to reduce PM by 724.2 t/year in 2018.

Dioxin

(g-TEQ/year)



Countermeasures

Installing activated carbon injection equipment, replacing with denitrification/ dedioxination selective catalysts for sinter plants, improving electrostatic preceptors, and building a rotary hearth furnace to reduce recycling quantity of solid materials of sinter plants.

PM2.5/Odor/Ozone Countermeasures

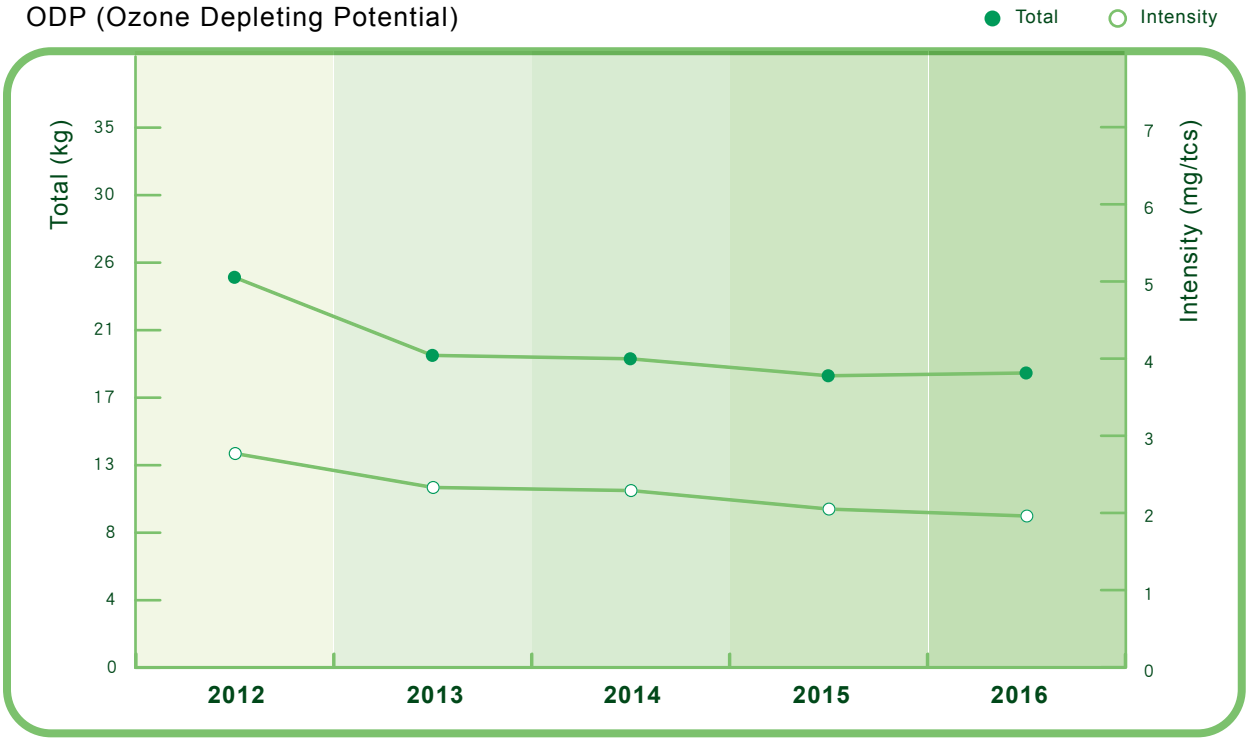
PM2.5 Reduction

Pollutant		Reduction Project	Estimated Performance	Time of Completion
Native PM2.5		Anti-dust net for ore piles	1,592 kg/day	Dec. 2013
		Anthracite coal shelf	-	Mar. 2013
		PM2.5 test and measurement for main stacks	-	Nov. 2013
		De-SOx equipment at sinter plants for particulate removal	162 kg/day	Dec. 2017
PM2.5 precursors	**SOx**	De-SOx equipment at sinter plants	-12,640 kg/day	Dec. 2017
		De-SOx on coal-fired boilers	-882 kg/day	Mar. 2017
	NOx	De-NOx equipment at sinter plants	-2,534 kg/day	Dec. 2017
		De-NOx on coal-fired boilers	-1,059 kg/day	Jan. 2014
	VOCs	To adopt low-VOCs coating materials on coating processes to reduce VOCs emission	-532 kg/day	Dec. 2016

Odor reduction: Stationary odor monitoring stations, meteorological stations, and three automatically triggered sampling systems stand at the border with CSBC. In case of an odor incident, the direction of source can be traced with the meteorological information, and the sampling systems are triggered automatically to gather samples for more accurate analysis.

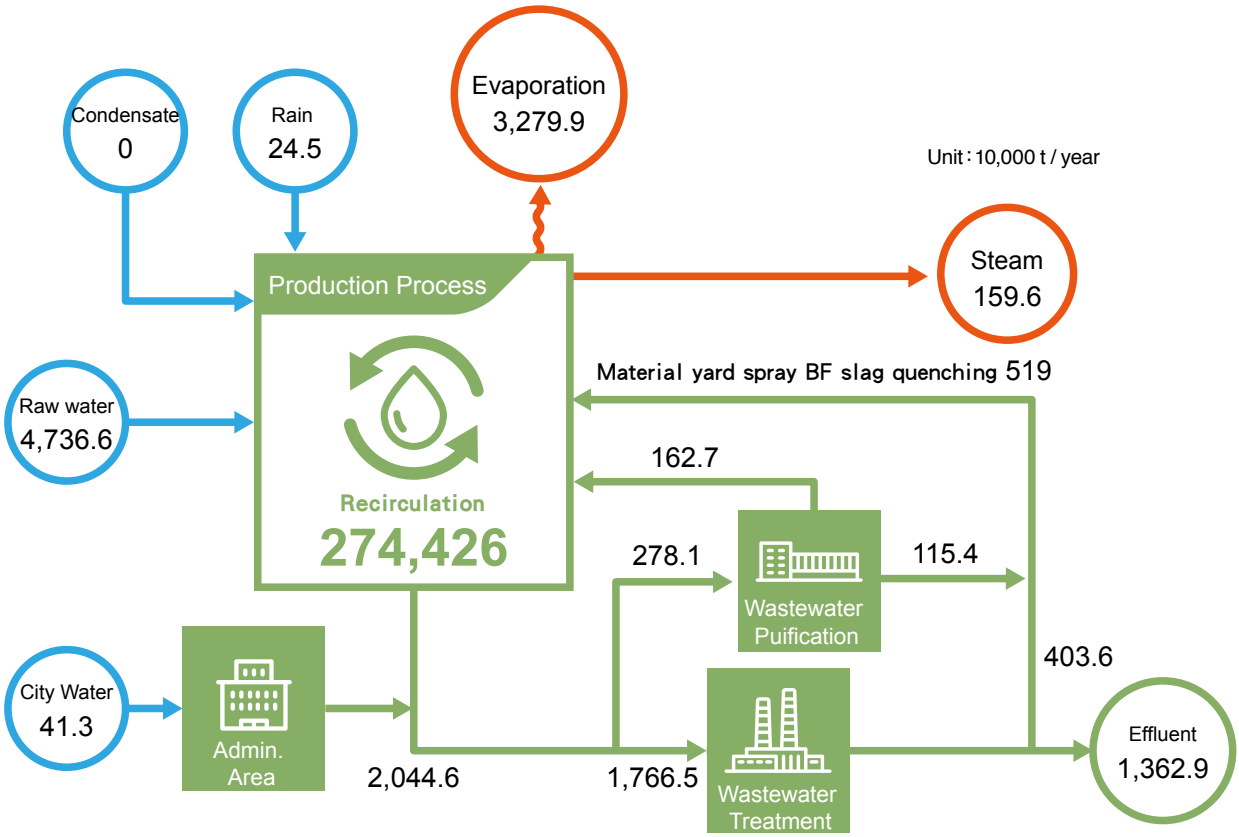
Control of ozone depleting substances: CSC integrates air conditions, improves equipment maintenance, develops high-efficiency models, uses eco-friendly coolants, and reuses recycled coolants.

ODP (Ozone Depleting Potential)



6.5.5 Water Conservation and Pollution Prevention

Water Balance 2016



Water Conservation

Integrated steel production needs raw water for cooling, de-rust, lubrication, dust washing, and environmental protection. For CSC plants, the source of raw water is Kaohsiung Fengshan Reservoir (FSR, current effective capacity 3.4 Mt), which provides 0.3 Mt of industrial water daily. With effective water management, recycling and reuse, and energy integration in Linhai Industrial Park, daily average raw water consumption for production has reduced to 130,500 t in 2016, which is less than half of the supply of FSR. Process water recycling rate has reached 98.3%, and the water intensity was reduced to 4.73 t/tCS, 1.3% lower than that of 2015. It is expected that CSC can import 24,000 tons of recycled water per day from September 2018, and the capacity of recycled water plant will increase to 45,000 tons per day in September 2019. CSC will import 44,000 tons of recycled water daily. The fresh water usage per ton of crude steel will be reduced to 4.2 tons in 2018 and finally to 3.4 tons in 2019. For China Steel Building, the water usage for 2016 was 48,199 tons of city water.

Raw Water Consumption (10,000 t)

Process Recycling Rate

Process Recirculation (10,000 t)

Water Intensity (t/tCS)

Water Conservation Projects

- BOF soft water conservation through heat load reducing by OG boiler project. 409,200 tons of water is saved every year.
- Roof rain collection facilities collected 245,000 tons of rain in 2016.
- Wastewater purification plant with ultra-filtration (UF), reverse osmosis (RO), and ion exchange system for to ensure output water quality meets the standard for high-pressure boilers.
- Recycled 3,000-5,000 t/day RO brine of wastewater purification plant for BF slag quenching.
- Municipal wastewater reclamation project: CSC signed a water purchase contract with Industry Bureau, Ministry of Economic Affairs and the Kaohsiung City Water Conservancy Bureau has planned to build the third stage processing facility in the Fengshan Sewage Treatment Plant. The construction is in progress. CSC expects to reduce water consumption by obtaining 24,000 t recycled water per day as the first phase of the project completes in 2018 and 44,000 t as the second phase completes in 2019.
- Installed partial filter for sealing water of LDG holder in #2 BOF plant to recycle it to indirect cooling water systems. It saves 432,000 tons of water every year.
- Pure water two G/H systems updated for high efficiency water extraction process in #2 power plant.
- The blower is updated to a high efficiency rotor to reduce cooling water consumption.
- Shortened the bypass filter backwash time.

Water Pollution Control

Main tasks of water pollution control are managing existing equipment and building backup facilities to improve water quality, and improving rainwater drainage by monitoring and managing.

The CSC wastewater processing facility with 79,600 t/day capacity processes wastewater to effluent standards and discharges to the ocean through a 60-meter channel. In addition, a 40,000 m^3 runoff wastewater collecting pool with 36,000 t/day processing plant for the raw material yard processes runoff wastewater from heavy rain to the effluent standards and discharge into the ocean through the 60-meter channel.

In 2016, the total discharge was 13,700,000 m^3, with 2,290,000 m^3 increase from 2015. The Chemical Oxygen Demand (COD) was 55.2 mg/L and Suspended Solids (S.S.) was 5.8 mg/L, decreased from 56.4 mg/L and 6.1 mg/L in 2015 and further below statutory effluent standards of 100 mg/L and 30 mg/L.

EPA announced Industrial Effluent Standard in 2014 with additional ammonia control standard of 20 mg/L for chemical industry including coking and coal chemical processes. By the regulations, CSC filed a reduction plan to KSEPB and was approved on Nov. 6, 2014, allowing project to be completed by the end of 2017. The construction of coking wastewater de-nitrogen system started in May 2015 and is expected to be completed by Oct. 2017, which will ensure legal compliance.

Wastewater Purification Plant

Rainwater Harversting

6.5.6 Water Footprint

With assistance of Cheng-Kung University (NCKU), CSC obtained the certification of the water footprint for hot rolled coils in 2011, the first steel product water footprint in Taiwan. Though there was no client request for water footprint disclosure, CSC cooperated with NCKU to restart water footprint project for cold rolled products in Mar. 2016 and was certified by SGS through the water footprint verification on Sep. 29, 2016, showing our willingness for cherishing water resource and readiness for the potential non-tariff obstacle.

6.5.7 Soil and Groundwater

To control soil and groundwater quality and to prevent pollution, CSC has 15 groundwater monitoring wells for periodic examination. Analysis results have been normal. When leasing, buying, or selling lands, CSC conducts investigation for underground environment to ensure there are no pollution disputes.

- By Soil and Groundwater Pollution Remediation Act, in 2016 CSC reported and paid NTD 58,092,980 for soil and groundwater remediation, reported monitoring records for underground oil storage tanks and for oil input/output balance sheets of gas stations.
- CSC conducted soil and groundwater pollution investigation for the land purchased from World Best Co., Ltd.

6.5.8 Control of Toxic Substances

CSC obtains permits, registrations, and approvals by law prior to operation and reports amount of use and release to EPA regularly. For venues where operating amounts are large by the mass operation standard, safety drills are performed annually. CSC also joined the Kaohsiung City joint prevention system and participates in relevant courses and activities for prevention and emergency response in toxic substance disasters. In 2016, there was no accidental release of toxic substances.

Of the 14 toxic substances used in CSC operations in 2016, benzene and chromium trioxide were most used. Their amount of usage and handling are as follows.

Control Code	Toxic Substance	Operation	Amount	Handling
052-01	**Benzene**	From light oil (more than 76 % benzene content), a residual of the coking process	Approx. 60,000 t/ year	Sold to China Steel Chemical for refinement into high-purity benzene, toluene, and xylene for sales
055-01	**Chromium trioxide (Chromic acid)**	Purchased for steel sheet surface coating	Approx. 1,100 t/ year	-

6.5.9 Handling of Hazardous Waste

Waste chemicals, which are produced in laboratories and in trivial amounts, are handled by certified vendors in Taiwan. Lead slag, produced from the rolling mill process, is appointed to legal waste recycling vendors for recycling and utilization. No hazardous waste is shipped overseas.

Hazardous waste outsourced handling and amount

	Handler	Waste	Weight (t)
2010	Super Max Engineering Enterprise	Chloric solvent	0.859
2011	Super Max Engineering Enterprise	Chloric solvent	0.950
	Thye Ming Industrial	Lead slag	13.07
2012	Super Max Engineering Enterprise	Chloric solvent	0.840
2013	Logos Technology Development	Lead slag	7.74
	RSEA Engineering	Corrosive waste	1.586
		Flammable waste	0.090
2014*	-	-	0
2015*	-	-	0
2016	Thye Ming Industrial	Lead slag	6.60

*No outsourced handling was necessary in 2014 and 2015 as almost all hazardous waste were recycled and reused.

6.6 Byproduct Utilization

CSC demonstrates effective reduction, on-plant recycling, and off-plant utilizing of by-products. In 2011, "zero landfill" was achieved after years of effort in collaboration with the academia and other industries. In 2016, zero landfill was also achieved; 5.753 Mt process by-products (wet base) were produced, with 23.5% recycled on-plant and 76.5% processed off-plant.

BOF slag is a good engineering material but has restrictions. The CSC Group has set a BOF slag self-management plan to avoid product misuse. CSC will adopt a complete inspection process that can effectively track the flow of products and ensure products application will not impact the environment, including product sales pre-shipment survey and audit, shipping inspection, and post-shipment tracking.

BOF slag applications: http://www.chc.com.tw/ars.html

Type	Characteristics	Annual Output (10,000 t)	%	On-plant Recycling (%)	Off-plant Recycling (%)	Utilization
BF slag	Produced in BF smelting of raw materials into liquid iron	296.5	51.5	2.9	97.1	Used to produce slag powder after granulating or engineering materials after cooling
BOF slag	Produced in BOF refining of liquid iron into liquid steel	117.1	20.4	12.7	87.3	Used (after steel recovery) as raw materials for the sinter plant or as asphalt concrete and concrete agent materials
De-S slag	Produced after desulfurization of liquid iron	30.2	5.3	0	100	Used (after iron recovery) as material for land grading, temporary roads, soil improvement, low strength concrete, and concrete materials
Dust	Collected by dust precipitator (including fly ash)	33.1	5.8	98.3	1.7	Fly ash: used as cement materials after mixture with sludge; zinc oxide powder: sold to refineries in Japan; others: used as iron making materials
Sludge	Produced after treatment, concentration, and dehydration of wastewater containing mineral dust	41.1	7.1	88.1	11.9	High-Zn sludge: sold to refineries in Japan; others: recycled for iron making on-plant or sold to cement plants as materials if not recyclable
Mill scale	Rust on steel surface during production	32.4	5.6	99.8	0.2	Recycled for iron making
Spent refractory	Scrap spent refractory from high temperature facilities	8.2	1.4	19.9	80.1	Recycled (after steel recovery) as steelmaking flux and protective base layer for slag pots or reversely recycled by suppliers for refractory

Type	Characteristics	Annual Output (10,000 t)	%	On-plant Recycling (%)	Off-plant Recycling (%)	Utilization
Construction residues	Waste earth from construction projects	4	0.7	0	100	Used for soil material plants in 2013 as the South Star Project was shut down in 2012
Limestone cake	Cakes of limestone after rinsing and dehydration	0.2	0	0	100	Sold to cement plants as materials
Others	Slag steel, condensed steel, de-S cinder, fly ash, rubber pads, waste grease, cold rolling fluids, fluid barrels, and zinc dross	12.5	2.2	71	29	Mostly recycled on-plant and others reversely recycled by suppliers, sold, recycled by relevant agencies, or processed by vendors
Total		575.3	100.0	23.5	76.5	

6.7 Environmental Accounting

The ESH Accounting Systerm is conducted by Financial Section. The system is established simply and effectively, and collected by existing accounting system. The Office of Energy and Environmental Affairs (EA) assisted in building the computer system. Environmental items are set by the Environmental Protection Department and EA. Cost is classified by capital expenditure and recurrent expenses.

Energy and Environmental Investments (Capital Expenditure)

(unit: NTD 100 million)

Item	2012	2013	2014	2015	2016
Amount of energy and environmental investments	39.6	41.0	25.8	21.0	34.1

Energy and Environmental Investments (Recurrent Expenses) and Utilization

(unit: NTD 100 million)

Item	2012	2013	2014	2015	2016
Government Charges and Fees	2.0	1.9	1.7	1.7	1.8
R&D	1.7	0.8	0.8	0.5	0.5
Depreciation	11.1	12.5	10.2	12.6	12.3
Operation and Maintenance	46.5	49.7	36.3	37.6	35.3

6.8 Legal Compliance

In 2016, CSC received three violation notices for pollution. The number of violation notices has reduced significantly in recent years, achieving the target of under five tickets a year and showing the effective implementation of self-control and improvement.

Item	2012	2013	2014	2015	2016
Pollution	Air pollution	Air pollution	Air pollution and waste	Water pollution	Air pollution
Issuer	KSEPB	KSEPB	KSEPB	KSEPB	KSEPB
Counts/ Fines	1 count/ NTD 0.1 mi.	2 counts/ NTD 0.55 mi.	2 counts/ NTD 0.106 mi.	1 count/ NTD 0.01 mi.	3 count/ NTD 0.4 mi.

6.9 Environmental Grievances

The one grievance on record from formal channel is to improve the fugitive particulate emission of material storage yards. CSC's response is as follows:

To reduce fugitive particulate emission from material storage yards, CSC had set automatic water spray system to solidify the surface of piles. In addition, CSC had spent 522 million NTD to build windbreak net which is 20 meters high 3,150 meters long in eastern, western, and northern sides of the #3/#4 phases material storage yard. By these control mechanisms, the recombination efficiency of fugitive particulate control is about 96%. To complete the windbreak net, CSC decided to spend 170 million NTD to build a 20 meters high 656 meters long windbreak net in southern side. The construction began in Dec. 2016 and is expected to complete by May 2018.

7.1 Fair Trade

As the crude steel production in Taiwan is lower than demand, a considerable amount of semi-finished and finished steel products is imported every year. After import tariff was reduced to zero in 2004, market competition became fierce, and monopolization no longer exists. In compliance with Taiwan Fair Trade Act, CSC and affiliates do not engage in price fixing. In addition, CSC offers consistent pricing to affiliates as to other customers in accordance with accounting regulations. Overseas subsidiaries and trading partners are treated fairly and equally in terms of commission and service charges, and all transactions with related parties are subject to accounting audits.

7.2 Upgrading Steel-using Industries

To enhance competitiveness of steel-using industries, CSC works closely with strategic partners on R&D alliances and industrial upgrade projects. The approach is increasing the value of downstream steel products through R&D, innovation collaboration, strategic investments, channel establishment, and brand development. CSC formed 16 R&D alliances and launched 13 projects with 8 research/academic institutes and 66 companies during 2006-2013 and initiated the 5-year Industry and Academia Alliance Plan in 2013. 8 Engineering Research Centers and 5 Joint Research Laboratories were established in 2008-2016. Furthermore, from 2013 CSC worked together with Corporate Synergy Development Center to promote Alliances for Steel-using Industries to optimize industry chain, supply chain, and value chain. In view of the rapid change of industrial environment, CSC started the second stage of industrial upgrading in 2017. Major tasks are as follows.

7.2.1 Second Stage of Industrial Upgrading

The industrial upgrading started from 2006 is defined as the first stage. It facilitated the necessary technologies for the development of high value industry over ten years of hard work, which not only developed numerous steels that replaced expensive and hard-to-import steel but also brought about new added value by linking innovative application technology and supply chain. In response to the change in time and space, the next stage industrial upgrading should be advanced. Considering the influence of new technology on the industry, CSC follows four strategies, (1) deep plowing of basic technology (2) opening up of product channels (3) establishing industry cloud (4) facilitating Industry 4.0. According to the status of each industry, CSC links the previous established multiple platform to set out development goals and projects with the anticipation that the effort will infuse new energy, induce invisible champion for individual industry, let local industry see the opportunity of transformation by implementing industry cloud and Industry 4.0, find the future direction of development, enable the local steel-using industry to possess an indispensable role in global supply chain, and make CSC the Number One and Only One strategic partner in market.

7.2.2 Engineering Research Center (ERC)

To focus academic energy on the needs of industrial development, CSC gradually switched from individual projects to strategic, long-term partnerships. The ERCs, established by CSC and academic partners, integrate professional

workforce and implement systemic, profound, and comprehensive fundamental research. By the end of 2016, 8 ERCs were established with another 3 of auto forming, smelting, and rolling under planning.

ERC	Partner	Established time
Electric Motor Technology ERC	National Cheng Kung University	2008.05.08
Physical Properties and Microstructure of ERC	National Sun Yat-Sen University	2010.12.08
Steel Structure ERC	National Taiwan University of Science and Technology	2011.03.10
Advanced Steel Microstructure Control ERC	National Taiwan University	2011.11.16
High-value Metal Industry ERC	Metal Industries Research & Development Centre	2012.04.10
Next-Generation Hand tool ERC	National Yunlin University of Science and Technology	2014.10.02
Advanced Specially Alloy ERC	National Tsing Hua University	2015.06.10
Forging Roll Forming ERC	National Kaohsiung University of Applied Sciences	2015.08.06

7.2.3 Joint Research Laboratory (JRL)

To provide differentiated technical services, CSC established JRLs with customers. By troubleshooting at plants and enhancing the suitability of CSC materials with customers' processes, JRL helps winning customer trust and increasing business opportunities. Moreover, long-term plans for strategic technical cooperation are tailored for mutual needs.

JRL	Partner	Established time
Compress and Motor JRL	Rechi Precision, ITRI	2011.09.13
Auto Steel JRL	HAITEC, MIRDC	2012.11.29
Motor JRL	TECO Electric and Machiner	2013.06.26
Auto Application JRL	GSK, Fine Blanking & Tool	2014.03.28
Auto Steel JRL	Changchun Engley, Honley Auto Parts	2015.12.28

7.2.4 Alliance for Steel Industries

Taiwan Elite Hand-tool Organization was established with BBI Proferred as trademark and began selling on e-commerce platform of Ta Chen International in July 2015. Up to now more than 1,100 clients were developed. The total order amount is USD 1.157 million until Jan. 2017. The sales per day have grown to USD 4,100. The organization of legal body has been established with the name of Taiwan High Quality Hand Tools Developing Association to assure smooth operation.

7.2.5 Industry and Academia Alliance

Industry and Academia Alliance is a prospective industry-university cooperation program proposed by the Ministry of Science and Technology (MOST) to enhance the value and competitiveness of industry. The "Next generation steel with green processes and product innovative application" program of CSC and National Cheng Kung University, granted by the MOST in 2013, aims to help the domestic steel industry to develop opportunities with the concept of "Material development before industry upgrade." With the theme and topics of "Advanced energy saving automobile" and "Marine structure for offshore wind power", the program covers 3 areas of Next generation steel, Clean metallurgy and precise and agile rolling, and Advanced 2-3 processing and high value products. CSC planned 15 subject programs, which guided the academia to unfold 21 sub-projects. It is expected to achieve the target of developing next generation steel products and applications.

7.3 Green Living

CSC Group voluntarily launched the Employee Green-Living Program to ensure sustainable development and fulfillment of corporate social responsibility. The Program has entered the second phase. The five LOHAS categories are: Dieting, Clothing, Housing, Transportation and Education, Recreation and others. In addition to total employee involvement, annual evaluation and assessment is held. To help employees understand personal carbon footprints, CSC in 2016 developed a CSC Group Low-Carbon Life Recorder for Group employees to record diet and traffic carbon emissions during their work hours.

Green Procurement

To echo the governmental promotion of civic green consumption, CSC started procuring products with green marks since 2007. Those procured were initially green products in the employee grocery store and office papers, later expanded to lighting, computer equipment, leasing equipment (including official vehicles and printers), printed matters, slag and cement, and green building materials. CSC also posts green consumption information online to increase employees' knowledge and willingness for green purchasing in daily lives. In 2015, the CSC green procurement was NTD 127,322,820, and CSC was awarded Commendable Green Procurement Units of Private Corporate and Groups by Taiwan EPA and KSEPB. In 2016 the amount is NTD 145,683,105, increased by 14% from 2015, exceeding the benchmark of 30 million for awarding.

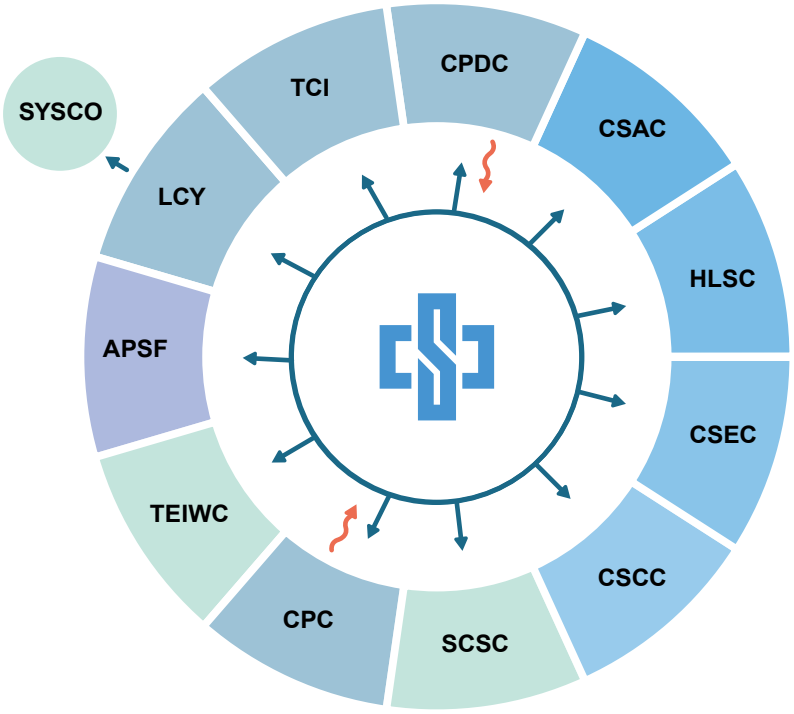
	2012	2013	2014	2015	2016
Green Procurement (NTD)	157,245,978	187,189,478	125,092,886	127,322,820	145,683,105

7.4 Green Partners

7.4.1 District Energy Integration

CSC 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. The Energy Integration Plan not only increases energy efficiency but also reduces resource consumption and pollutant emissions in the region. As the environmental quality is improved, the Plan brings substantial benefits to the economy, the environment, and the society.

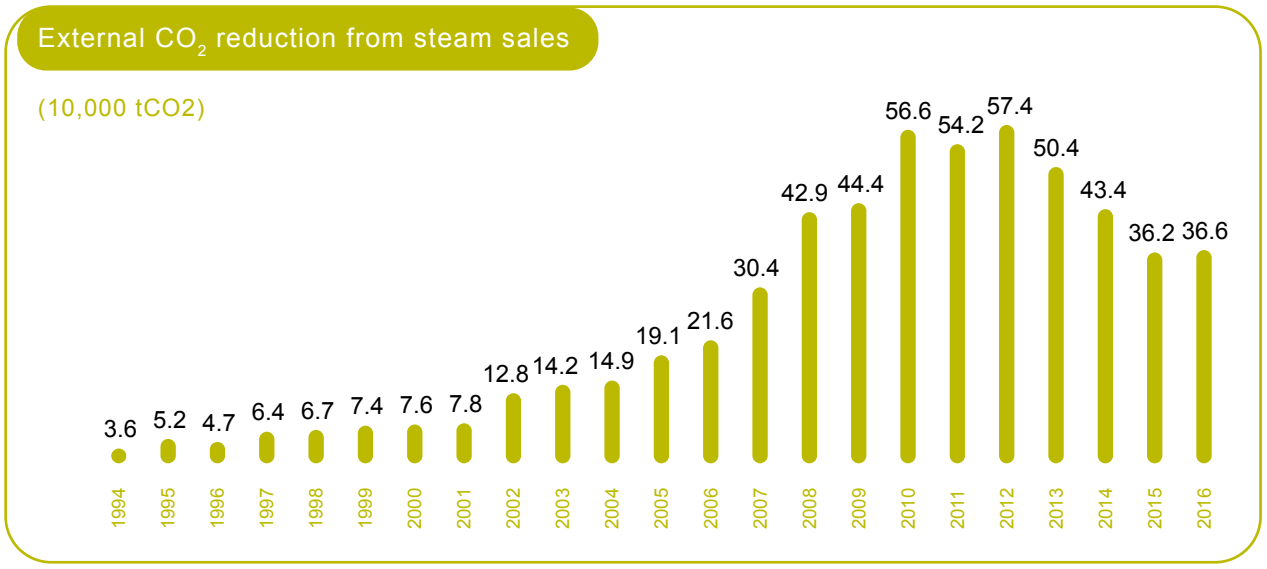
In 2016, the 1.596 million tons steam sales saved 123,000 kL low-sulphur fuel oil. In terms of emission reduction, it is equivalent to annual reduction of 366,000 tons CO_2, 1,166 tons SOx, 809 tons NOx, and 115 tons particulates. External CO_2 emission reduction by steam sales over the years is shown below. The decrease in 2016 was due to the dropped sales.



input Output

INPUT	
China Petrochemical Development Corporation (CPDC)	Condensated water Waste Fuel Gas,H_2
CPC Corporation, Taiwan (CPC)	H_2, Fuel Oil

OUTPUT	
C.S. Aluminum Corporation (CSAC)	Steam, N_2, Ar
Hung-Li Steel Corporation (HLSC)	Steam
China Steel Express Corporation (CSEC)	Electricity
Shang Chen Steel Company (SCSC)	Steam
Taiwan Chlorine Industries Ltd. (TCI)	Steam
China Steel Chemical Corporation (CSCC)	Steam, Air, COG, N_2, Electricity
CPC Corporation, Taiwan (CPC)	Steam, N_2
Tang Eng Iron Work Co., Ltd. (TEIWC)	Steam, O_2, N_2, Ar
BOC Lien Hwa Industrial Co., Ltd. (BOCLH) / Air Products San Fu Co., Ltd. (APSF)	N_2
China Petrochemical Development Corporation (CPDC)	Steam, N_2
LCY Chemical Corporation (LCY)	Steam, N_2
↓	output
Sheng Yu Steel Co., Ltd. (SYSCO)	Steam

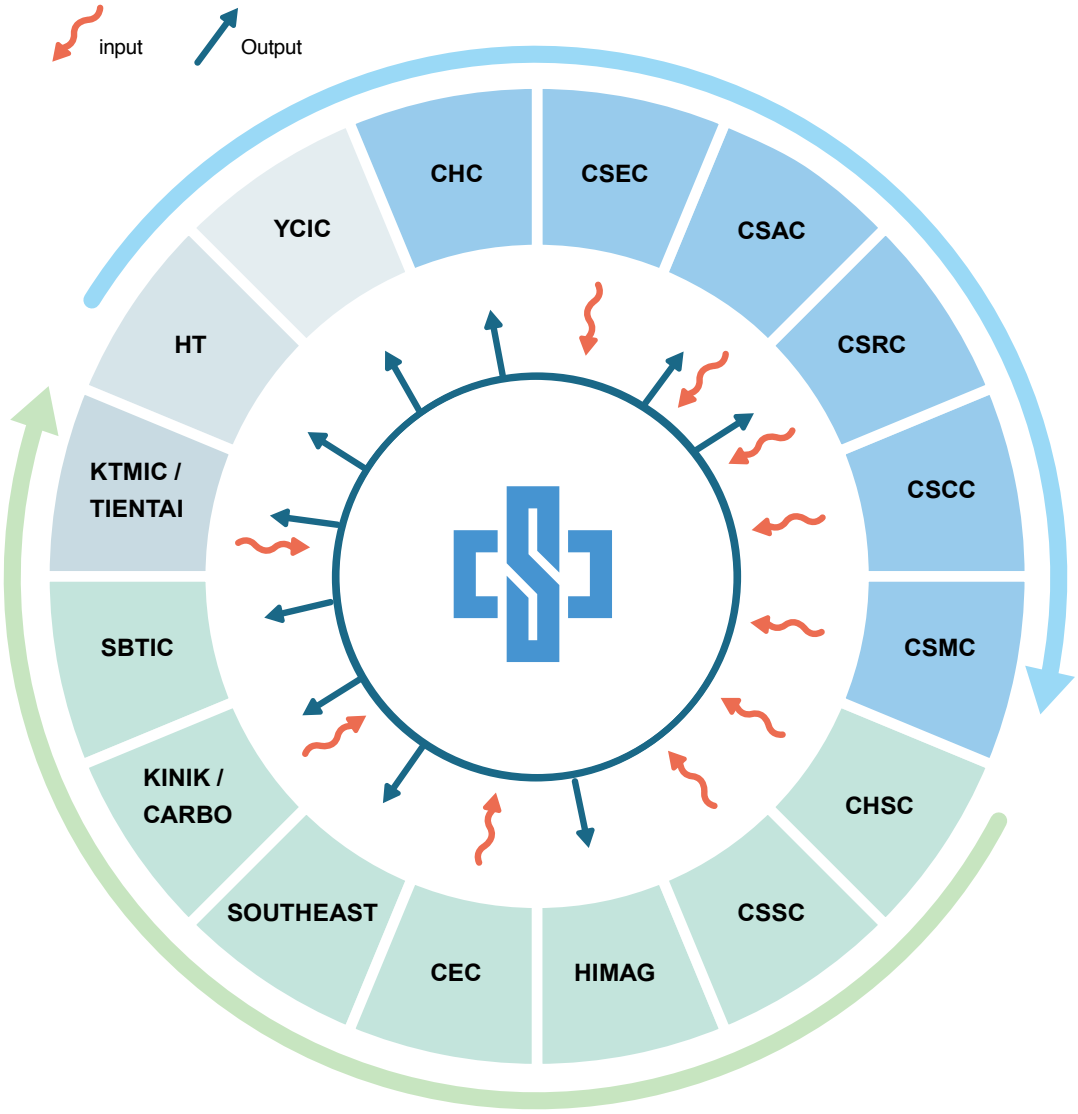


7.4.2 Energy Saving Service

CSC Energy Saving Service Team was formed in 2007 upon the call of the Bureau of Energy. Through vertical integration and horizontal coordination, the Team enhances energy conservation of the CSC Group and provides services for customers. In 2016, CSC assisted the Kaohsiung Energy Saving Conservation Group to provide energy-saving technology counseling services in Hung-Li Steel Corp, RSEA Engineering Corp, Taita Chemical Corp, Sigma Brothers, Inc., and Ming Dih Chemical Corp.

7.4.3 Construction of an Eco-society

Upon the call of EPA and Industrial Development Bureau, CSC expanded the industry ecological network inside and outside of Linhai Industrial Park to ensure effective recycling and reusing of industrial byproducts. In 2016, the CSC-centered industry ecological network included 21 enterprises, including recycling industries for BF slag, BOF slag, sludge, waste oil, zinc dross, waste acid, and refractory. CSC will continue promoting industry ecological network to reutilize waste from Linhai Industrial Park so as to improve operating condition and competiveness and to follow the global trend of sustainable development.



INPUT

China Steel Express Corporation (CSEC)	Vessel Waste Oil
China Steel Resources Corporation (CSRC)	Magnetized De-S Slag
C.S. Aluminum Corporation (CSAC)	Scrap Iron
China Steel Structure Co., Ltd. (CSSC)	Scrap Iron
China Steel Chemical Corporation (CSCC)	Tar, Scrap Iron
China Steel Machinery Corporation (CSMC)	Waste Acid, Scrap Iron
Chung Hung Steel Corporation (CHSC)	Waste Acid, Sludge
China Ecotech Corporation (CEC)	Calcium Carbonate Crystal
Kinik Company (KINIK)/ Carbo Tzujan Industrial Co., Ltd. (CARBO)	Grinding Wheel
Kuang Tai Metal Industrial Co., Ltd. (KTMIC)/ Tientai Electrode Co., Ltd. (TIENTAI)	Welding Flux

OUTPUT

CHC Resources Corporation (CHC)	Granulated Slag, Sludge, Coal Ash, Spent Refractory, Granulated Slag, Coarse ZnO, Air Cooling BF/BOF Slag
C.S. Aluminum Corporation (CSAC)	Scrap, Aluminum, Copper, Zinc
China Steel Chemical Corporation (CSCC)	Coal Tar
HIMAG Magnetic Corporation (HIMAG)	Iron Oxide Powder
Southeast Cement Corporation (SOUTHEAST)	Sludge, Granulated slag
Klnlk Company (KINIK)/ Carbo Tzujan Industrial Co., Ltd (CARBO)	Scrap Grinding Wheel
Kuang Tai Metal Industrial Co., Ltd. (KTMIC)/ Tientai Electrode Co. , Ltd. (TIENTAI)	Welding Slags
Sun Beam Tech Industrial Co., Ltd (SBTIC)	Zinc Dross
China Steel Resources Corporation (CSRC)	De-S Slag
Ho Tung Cement Co., Ltd (HT)	Granulated Slag
Young Ching Industry Co., Ltd (YCIC)	Granulated Slag

7.5 External Communication and Cooperation

7.5.1.Domestic Associations

As the supplier of products and byproducts for domestic industries, CSC participates in various activities organized by domestic industry unions, institutes, and associations to reinforce communication and cooperation.

Steel Industry	Taiwan Steel and Iron Industries Association • CSC Director Lin as the president	For collaboration and development of the steel and iron industry, government economic construction, striving for national foreign exchange, coordinating the relationship between the industry, and further enhancing common interests
	Chinese Institute of Engineers • CSC Chairman Wong as the managing director	For helping develop national construction, promote engineering expertise, aim for the targets of a socially responsible, sustainable and prosperous future
	Taiwan Institute of Steel Construction • CSC VP of Production Division Kuo as director	For steel construction technology development, promoting the development of steel construction industry and infrastructure safety improvement
	Chinese Institute of Mining Metallurgical Engineers • CSC Director Lin as the president	For mining and metallurgy research and industry development
Corporate Sustainability	Business Council for Sustainable Development of Taiwan	For promoting corporate sustainability and environmental protection
	Taiwan Association of Environmental and Resource Economics	
	Formosa Association of Resource Recycling	
	Taiwan Resource Recycling Industries Association	
	Taiwan Carbon Capture Storage and Utilization Association	
	Taiwan Institute for Climate Change and Energy	
	Taiwan Association of Soil and Groundwater Environmental Protection	

7.5.2 International Associations

Organization	Participation	Benefits
World Steel Association (worldsteel) 	Member ○ Participates in committees of technology, safety, environment, raw materials, economy, product sustainability ○ Participates in CO_2 data collection and expert groups on sustainability reporting, LCA, etc. ○ Dr. Yu-Chen Li, Professional Engineer, was seconded from CSC to worldsteel (Mar. to Sep. 2016)	CSC shares experiences via exchanges, cooperation, and services, thereby connects and updates the latest development of global steel industry.

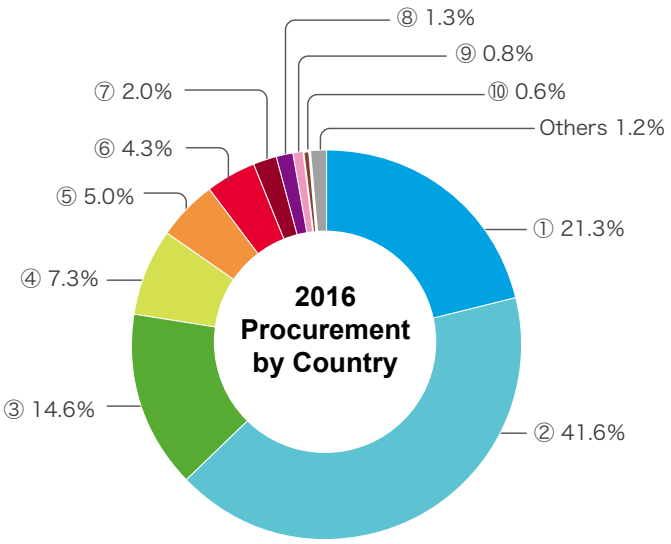
Organization	Participation	Benefits
South East Asia Iron and Steel Institute, SEAISI	Member ○ Serves as the chairman of its EHS committee assisting in the development of technology and implementation of EHS affairs. ○ Supports the arrangement of steel technology and EHS conferences, as well as visiting plants and sharing national reports.	Through maintaining good interactive and cooperative relationships with members, CSC obtains information on the development of regional industries and technologies as well as relevant policies, which provides a good basis for business development and strategic cooperation.
OECD	Participates in the meetings of the steel committee on a regular basis under the instruction of the Ministry of Economic Affairs.	As an excellent international platform, it is not only a channel to obtain new and important information on the steel industry and environmental protection but also an opportunity for Taiwan to increase its visibility and participation in international activities.

7.6 Supply Chain Management

CSC's supply chain management can be categorized in equipment and material procurement, transportation, security, and contractors, as follows.

7.6.1 Equipment and Material Procurement

Conflict Minerals Declaration	CSC has committed to use no 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. Regarding material source investment, any mines that is suspected to involve in conflict minerals would be disregarded in investment evaluations.
Human Rights Management	Other than conflict minerals declaration, CSC also pays attention to human rights conditions in the countries providing equipment and materials in procurement process, and adjusts procurement decisions accordingly. The following table shows the global distribution of CSC's suppliers in 2016.



Country	Number of Suppliers
① Taiwan	1859
② Australia	24
③ Japan	181
④ North America	79
⑤ Europe	227
⑥ Central & South America	4
⑦ China	69
⑧ Singapore	29
⑨ Russia	4
⑩ Indonesia	3
Others	38
TOTAL	2517

7.6.2 Transportation

CSC commissions China Steel Express (CSE) to import raw materials and export steel products via CSE's own fleet or by chartering. CSE is an AEO certificated corporation that meets CSC supply chain safety regulations. Most of CSE's vessels received environmental related certifications. Furthermore, CSE highly values the eco design on newly built ships and adopts eco speed during sailing in order to reduce carbon emission. They also recycle their waste oil and waste water from fleet in CSC's Coal Handling Plant to reduce diesel consumption and air pollution.

For transportation of flux from Hualien, CSE's MV Hwa Lien Express has an auto-unload design that operates faster than the shore crane and therefore lessens air pollution. In addition, CSC uses railway to reduce air pollution from flux transportation compared to common road transportation.

For domestic transportation, CSC demands transportation suppliers to join and pass the certification of OHSAS 18001 in order to reduce the risk of occupational hazards. In addition, in 1999 CSC stipulated that the vehicle age for product carrying do not exceed 13 years and now further stipulated the newly joined vehicles must meet EPA stage 4 vehicular air pollutant emission standards to eliminate existing obsolete vehicles. CSC estimates all the product carrying vehicles will meet the fourth or fifth stage air pollutant emission standards in the end of 2019.

7.6.3 Security Management

The access control and security of CSC factory is assigned to China Steel Security (CSS), with 150 personnel on-site. According to 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 serving security guards, it shall provide them with in-service training at least four hours every month." All CSS employees comply with the law and received comprehensive training of human rights and policy.

7.6.4 Contractor Management

CSC has never outsourced its tasks to freelance workers and has always demanded its contractors to hire Taiwan nationals for works in CSC. Workers sent by contractors to work in CSC must have insurance mandated by the government, wear uniforms and use safety equipment regulated by CSC, 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. CSC is responsible for monitoring and supervising the working conditions of contractor employees to ensure contractors' compliance with national labor laws. There was no reported incident related to child labor or forced labor in 2016.

Due to the nature of the outsourced works, disaster prevention is of the highest priority and the most crucial issue. Apart from enhancing facility safety by way of inherent safety, CSC has also improved interactions with contractor employees and their working conditions through partnership and has enhanced their basic professional skills through training.

According to CSC's local maintenance job management regulations, monthly evaluations are conducted for assigning bonus to encourage contractors to improve management and work quality. Safety, health and environment related issues take up 35% in the monthly evaluation, and there was no case of bonus being affected by substandard performance in such areas in 2016. CSC has always been devoted in the nurturing, training, and

management of contractors. The practices of frequent inspection and comprehensive reward and punishment program have already rooted in CSC over the years. Immediate action must be taken and a penalty will be imposed for any breach of safety, health, and environment related regulations. The fine is collected and exclusively designated for the monitoring, training, and improvement of contractors.

During on-site contractor evaluation process, Plant Engineering and Maintenance Department personnel is required to fill out an evaluation form with 4 major criteria: quality management system, business management, manufacturing and equipment capacity, and technical capabilities. Contractors are selected based on total performance and are requested to provide documents such as business entity registration, memorandum of association, tax receipts for the previous 6 months, credit report, proof of labor insurance, proof of certifications, etc., to prove that they are legally registered with healthy financial status. Furthermore, contractors must be verified that they comply with Taiwan's Labor Standards Act in human rights and working conditions. Employers must be insured with employer's liability insurance and provide employees with labor insurance and health insurance. Plant Engineering and Maintenance Department personnel are responsible for confirming all documents are up-to-date during contractor re-evaluation conducted every 3 years.

All contracts between Plant Engineering and Maintenance Department and service providers are signed according to law. As an ISO 9000 certified company, CSC conducts contractor evaluations as a part of its supply chain management and re-evaluations are done every 3 years to ensure that all contractors abide by the national regulations with no violation against human rights, use of child labor, freedom of association, right to organize, and right to collective bargaining. CSC also dedicates in the supervision of contractors to enhance the working conditions of their employees and to ensure the compliance with the Labor Standards Act.

Contract Management

In order to pursuit the goal of extensive contract management, CSC started drafting its Contractor Management Regulations in 1980. It specifies work contents, types, associated managing units and their responsibilities. There are also additional guidelines such as Contractor Safety and Health Management Regulations, and Contractor Environment Protection Management Regulations. All regulations, including penalties, are incorporated in all contracts. Key rules regarding human rights, company governance, job safety, and energy and environment, are summarized as follows.

Human Rights	⊕ Prevention of sexual harassment in the workplace should be in place.
	⊕ Violation of child labor is subjected to a fine of 30,000 for each case.
	⊕ Must provide insurance for employees as regulated by law, and present proof of insurance to Plant Engineering and Maintenance Department before monthly payment process, as an incomplete process would result in delayed payment.
Company Governance	⊕ CSC is allowed to terminate all contracts signed with a particular contractor if one of the following conditions is present.
	1.Contractors fail to provide a written notice when owner(s) of the contractor or personnel related to the contract are also appointed managers, employees, part-time employees or their spouses, immediate family members or consultants of CSC.
	2.Give any form of bribery, gifts, commission, rewards or other illegal benefits to appointed managers, employees, part-time employees or their spouses, immediate family members or consultants of CSC.
	3.Obtain an annual evaluation score below 70 would be prohibited to continue the contract for another term.

Safety and Health	⊕	Must comply with Contractor Safety and Health Management Regulations, Work Permit Management Rules, and Safety and Health Work Rules.
	⊕	Contractors disqualified for any work in CSC or had contracts terminated due to occupational hazards must provide full job safety improvement plans for approval before resuming their qualifications.
	⊕	Must have and implement incentive programs designed for good performance in job safety, and provide program details to CSC.
	⊕	Participate in trainings and job safety-related activities organized by CSC and get reimbursed for 160/hour per person once certified.
Energy and Environment	⊕	Comply with Contractor Environmental Protection Management Regulations.
	⊕	Contractors' use of electricity would be billed by CSC based on electric meter readings.
	⊕	Use of air conditioner must follow these instructions:
		Filters must be cleaned every week.
		Windows must be closed when air conditioner is on.
		Air conditioners must be turned off when rooms are to be emptied for more than half an hour.
		The temperature of air conditioners must be set between 26 to 28 degree Celsius.

Establish Solid Partnerships

Under the notion of partnerships, CSC actively helps contractors improve human resource structure and working conditions, including increasing safety and health management fees, establishing vacation policies and compensation for working on holidays, and adjusting contracting fees for contractors to lower turnover rate. This also helps lower the risks of occupational hazards, in order to foster true partnerships between CSC and contractors.

Nurture and Establish Mutual Trust	Guidance and Training	Evaluation and Implementation
1. Provide contractors with stable workload. 2. Reasonably assure contractors with good evaluation score with priority in contract signing. 3. Promote sensible bidding process for contracts. 4. Support reasonable pay for contractor employees. 5. Implement vacation policies for contractor employees.	1. Coach contractors to abide by national regulations. 2. Assist contractors in safety trainings. 3. Create communication platforms.	1. Revise CSC's Production, Maintenance, and Cleaning Contractor Management Regulations. 2. Update contract-related articles. 3. Conduct audits on contractor working conditions.

Contractor Safety and Health Management Measures

Contractor Safety and Health Propaganda	Gather contractors every month to announce new safety and health related information and demands by CSC.
New Contractor ID Issuing Assessment	New contractors must attend mandatory safety trainings and have interviews with managers of ID issuing organization. (Listed in Safety and Health Department's system)
Safety Care	Conducted every month (Listed in Safety and Health Department's system)
Report of Near Misses	Report of near misses is encouraged with rewards.
Implement and Promote Inherent Safety	Continuously introduce system scaffolds and elevating work platforms to increase scaffold safety and decrease related hazards.
Safety Inspections	All levels of management personnel regularly conduct safety inspections in workplace and keeps records. (Listed in Safety and Health Department's system)

Based on the management concepts of collaborating and building mutual trust with contractors, and to build a relationship of coexistence and mutual prosperity, CSC started to actively promote creating a safety culture in contractors in 2015, and has proposed numerous measures in the aspects of regulations, management, and education.

Regulations	Management	Education
⊕ Minimize subcontracting. ⊕ Stabilize contractor employees pay and lower turnover rate. ⊕ Reinforce reward programs for contractors. ⊕ Urge contractors to establish incentives for job safety. ⊕ Implement contractor performance evaluation to identify contractors with established safety culture as recommended contractors.	⊕ Reinforce new contractor employee assessment. ⊕ Self-management and audits of contractor's job safety. ⊕ Arrange contractors to study and emulate the management models of CSC Group companies.	⊕ Operation leaders receive Safety and health education and training for class-3 manager of Occupational safety and health affairs. ⊕ Reimbursement for contractor participation in trainings ⊕ Increase the percentage of job safety trainings organized by contractors

Inspections and Audits

Industrial Safety and Hygiene Department, Plant Engineering and Maintenance Department, Electrical and Control Department, and all maintenance units in production lines frequently conduct inspections and audits on contractors. On top of job safety, inspection items also include energy conservation and environment protection. Inspection frequency in 2016 is as follows.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	SUM
Plant Engineering and Maintenance Dept.	221	135	262	181	249	187	196	226	159	162	232	205	2415
Electrical & Control Dept.	23	36	37	36	39	41	33	39	35	36	18	34	407
Industrial Safety & Hygiene Dept.	80	46	108	170	106	88	86	86	65	66	74	127	1102
Summary	324	217	407	387	394	316	315	351	259	324	324	366	3924

Numbers above do not include inspections conducted by maintenance units in production lines.

Trainings for Contractor Employees

CSC maintenance units are responsible for arranging training courses and certifications in accordance with the needs of safety and health as well as professional techniques required for workers to perform their work at CSC. Over the years, the trainings have been proven to be effective. In 2016, contractor employees received a total of 31,438 hours of training in CSC.

Item	Training Course/ Purpose	Training 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	5,012	6	3 / week	30,072

Item	Training Course/ Purpose	Training Contents	Persons	Hours/ Course	Frequency	Total Hours
Technical training	Scaffolding: Designed to prevent occupational hazards.	Scaffolding machinery operation, equipment, tools, operating environment and operation safety introduction	221	3	2 / year	663
	Corrugated roofing: Designed to prevent safety hazards such as falling through.	Hazard identification, falling prevention, and personal protective gear introduction	166	1	2 / month	166
Skill certification	Metalworking: To ensure metalworking tasks are carried out up to the standard demanded.	Bench work and fitting, welding, and all types of metalworking	61	3	1 / year	183
	Scaffolding certification: To ensure scaffolding procedure could be proceeded properly according to requirement.	Technical drawing reading, construction layout, structure transportation and assembly skills assessment	118	3	2 / year	354

Contractor Electricity Management

Contractor electricity management is included in CSC's Contractor Environment Protection Management Regulations and is also an item for on-site audit.

Objectives	Advocate "Beneficiary Pays Principle" to encourage contractors in electricity conservation to avoid inefficient management.
Methods	Contractors are billed according to the monthly meter readings.
Outcomes	CSC's contractors were charged with 3.292 million NTD for electricity consumption of 1003.4 MWh in 2016.

7.6.5 Localization

CSC has increased investments in high value-added downstream production lines, environmental protection and energy saving facilities, and replacement of outdated equipment, and has also requested suppliers to maximize the percentage of domestic supply, aiming to reduce costs and foster domestic industries. Large quantities of hardware equipment, refractory materials, parts and components for repairing and maintenance are required. In addition to requesting its suppliers to increase local portions, CSC also contributes to the upgrade of related domestic industries and lessens the dependency on foreign suppliers, to ensure on-time delivery, exceptional service, and lower cost. Moreover, CSC actively promotes all kinds of domestic manufacturing activities and signs long-term contracts with domestic refractory material manufacturers to effectively cut down inventory level. The goal for domestic manufacturing in 2016 was set to be 277 million NTD, and the result is 277.5 million NTD.

Item	2016 Performance of Localization
Refractory	3010 million (66.9%), 95,000 tons (84.9%)
Spare Parts & Equipment	Mechanical: 103 works, 170.5 million
	Electrical & Control: 113 works, 107.0 million
Production Lines & Projects	86 items, 1242 million

8.1 Recruitment and Retention

CSC strictly follows the Labor Standards Act of Taiwan and never hires child labor. To ensure the basic human rights of employment equality, employees are hired only by expertise and by experience, eliminating discriminations upon ethnic origin, thought, religion, political affiliation, place of origin, place of birth, gender, sexual orientation, marital status, appearance, disability, or past labor union membership. In 2016, no incident involving human rights abuse or discrimination was reported.

8.1.1 Industry-Academy Cooperation

To reduce the gap between school education and industrial practices, address the demands for specific skills, and increase the percentage of aboriginal 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 72 students as employees.

Hydraulic components assembly training

Welding training

Flame cutting training

Safety training

8.1.2 Workforce

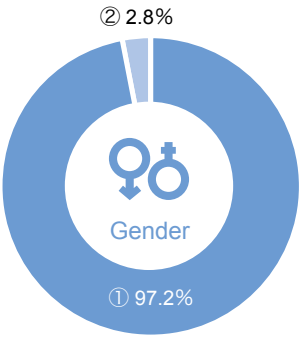
By the end of 2016, the CSC workforce totaled at 18,457 people, of whom 10,280 were official employees, 8,163 were contractors (6,743 male and 1,420 female, mainly work contractors and engineering contractors), and 42 were dispatched workers (2 male and 40 female, mainly for paperwork and general affairs). All official employees are locals from Taiwan. The average age of employees was 48.22 and the average service year was 21.86. The male-female ratio is due to the characteristics of the integrated steel mill. In 2016, 10 employees newly applied for maternity leave without pay (3 male, 7 female) and 2 female reapplied. In the same year, there were 12 employees (3 male and 9 female) reinstated. For disability employment, 145 employees by the end of 2016 account for 1.41% of all employees, exceeding the 1% requirement of the People with Disabilities Rights Protection Act.

Application for Unpaid Parental Leave For Raising Children

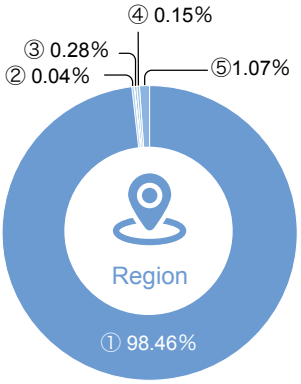
	2015		2016	
	Male	Female	Male	Female
Newly applied	3	6	8	11
Reapplied	0	1	0	3
Reinstated	2	6	8	10
Reinstated rate	89%		95%	
Retained	1	2	2	1
Retained rate	100%		100%	

2016 Employee Distribution

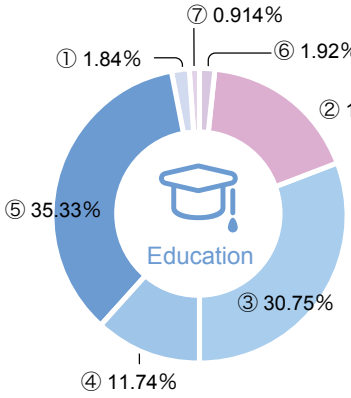
(Persons)



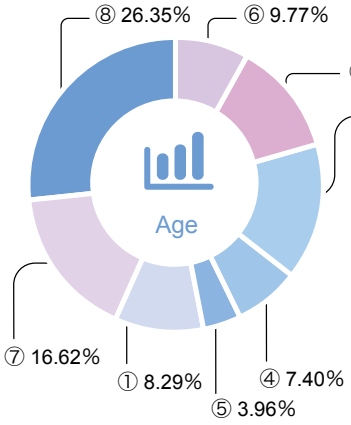
① Male	9,981
② Female	299



① Kaohsiung	10,122
② Taipei	4
③ New Taipei	29
④ Hualien	15
⑤ Overseas	110

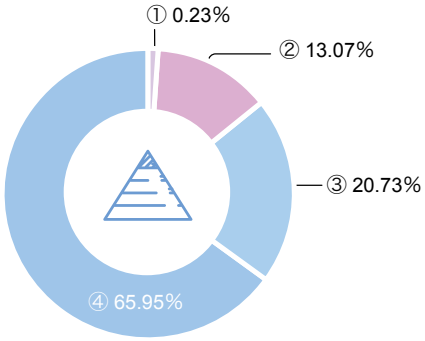


① Doctorate	190
② Master	1,798
③ Bachelor	3,161
④ Junior college	1,207
⑤ Senior High / Vocational	3,632
⑥ Junior high	198
⑦ Primary School	94



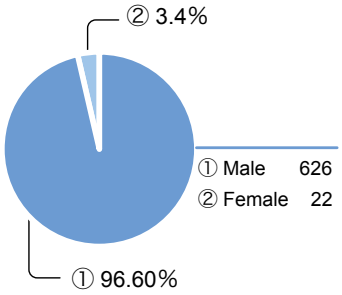
① 18-29	852
② 30-34	1,270
③ 35-39	1,538
④ 40-44	761
⑤ 45-49	407
⑥ 50-54	1,004
⑥ 55-59	1,708
⑧ 60+	2,740

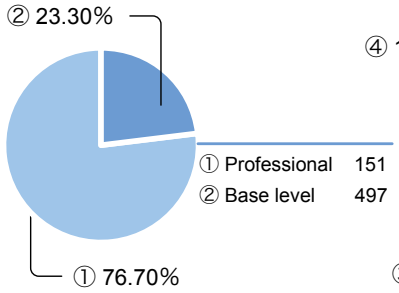
2016 Employee Position Distribution

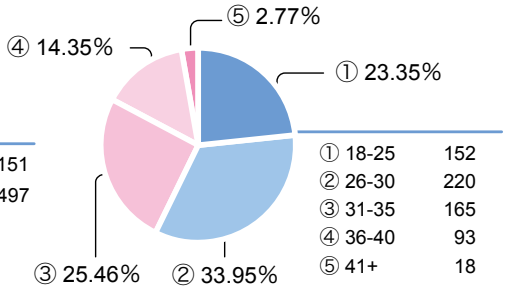


	① Top Management	② Management	③ Professionals	④ Base Level	Total
Female	0	7	187	104	299
Male	24	1,337	1,944	6,676	9,981
Total	24	1,344	2,131	6,780	10,280
%	0.23%	13.07%	20.73%	65.95%	100%

For the one external recruitment in 2016, the number of job vacancies, test subjects, and job contents were open to public. Applicants were asked to take the written test on common and professional subjects. Based on test results, at least twice the number of vacancies was selected for interviews. The final decision for employment was made based on both written test and interview scores, and 648 new employees were hired.







8.1.3 Retention

The retention policies of CSC are as follows.

Salary adjustment based on performance and position	• Midyear Salary Adjustment: Those qualified will receive respectively 1-8% of raise according to their midyear performance grade. • Annual Salary Adjustment: 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%. • Promotion Raise: Those qualified can get a raise within 0-4%.
Production/sale profit bonus and other incentives	• Production/Sale Profit Bonus: With revenue at the end of the month, production/ sale profit bonus is distributed to employees.
	• Key Bonus: Those qualified will be given a key bonus based on their contribution duri ng the past year, with the amount of 3-months of salary as maximum.
	• Incentive Bonus: With revenue at the end of the year, those qualified will get an incentive bonus based on their yearend performance grade and basic salary, with ratios differencing from 0.5 to 1.25.
Promotion for technical positions	With the qualifications approved, 28 entry level technicians were promoted as foremen and 2 to professional level during 2016.
Domestic and overseas training	With the needs of diversified and international operation strategies, respectively 15 and 63 employees were chosen in 2016 for medium/long-term and short-term courses and technical learning overseas while 4 were selected to receive educational courses in domestic universities.
Welfare	CSC provides well-planned welfare policies and facilities.

8.1.4 Employee Turnover

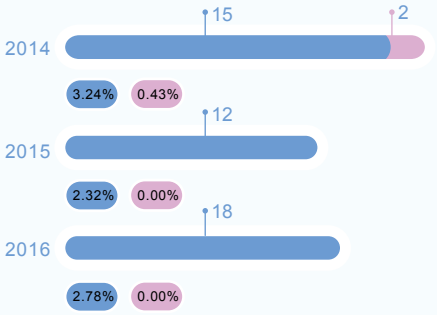
The personnel change, resignation, and retirement of employees are handled according to relevant CSC regulations. Official employees can apply for retirement at the age 65 or for voluntary retirement at an earlier age with reference to the Labor Standards Act. Regulations governing personnel change and voluntary resignation or retirement are as follows.

⊕ **Personnel change:** 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 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 rejection.

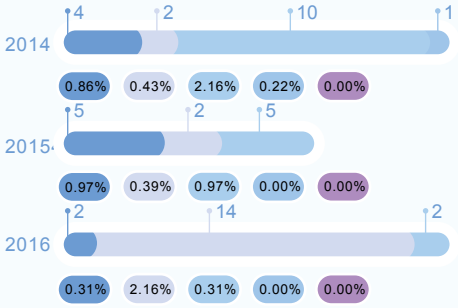
- **Voluntary resignation/retirement:** Directions for Handling Employee Voluntary Resignation and Retirement and Directions for Handling Compensations for Retirement, Relief, Occupational Accidents, and Layoffs institutionalize the application for voluntary resignation and retirement.
- **Attrition:** In 2016, a total of 587 employees left, with an attrition rate (number of personnel left/active employees at the end of year) of 5.71%. 493 were aged 60 or over, and retirement was the main reason for attrition.

Newcomer Attrition

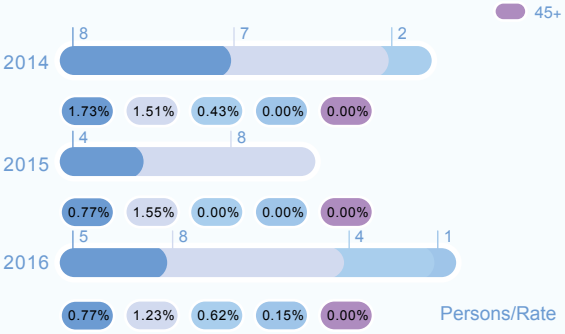
Gender



Region

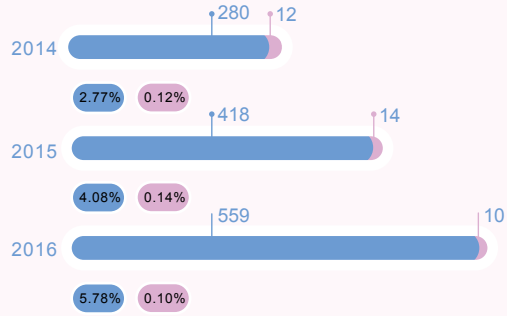


Age



General Employees Attriton

Gender



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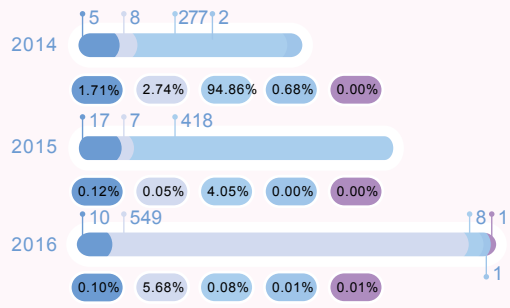

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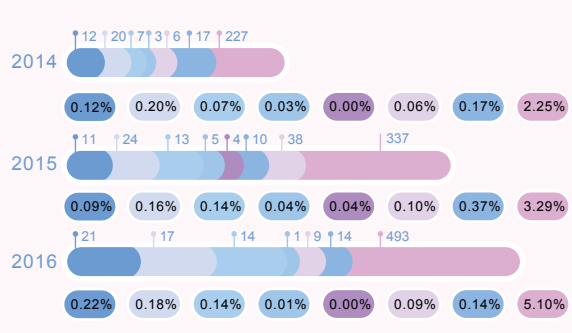


8.2 Human Rights and Benefits

8.2.1 Human Rights Management

CSC sets humanity management as its foundation of management and enthusiastically protects and improves human rights. CSC ensures the citizenship and labor rights of employees, signing the collective agreement and conducting safety and health programs.

CSC considers human to be an important resource and provides a friendly working environment with human rights protection. Besides following labor laws and providing equal opportunity to all jobseekers, CSC sets up regulations and complains channels to protect human rights of employees. In 2016, there was no discrimination or complains and no violation of human rights laws and regulations.

CSC adheres to domestic and international codes on labor and human rights to treat and respect all employees equally. Practices include:

- Establish labor conditions with reference to relevant laws and regulations.
- Ensure diversity and equal opportunities for all jobseekers with reference to the Employment Services Act.
- Establish grievance mechanisms for employees to appeal infringement of legal rights to work or improper treatment.
- Establish the Employee Reward and Punishment Review Committee to review major rewards and punishments of employees.
- Establish the Workplace Sexual Harassment Prevention, Grievance, and Disciplinary Action Regulations to provide employees and jobseekers with a work environment free of sexual harassment.

8.2.2 Wages, Benefits, and Promotion and Transfer

Remunerations

Employee remunerations include 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. Remunerations for male and female employees are equal, and the basic salary of male and female employees of the same position and grade is the same. However, the pay grade of the same position may vary due to difference in seniority. For employees at the same position and with the same length of service, remunerations are the same regardless of gender.

Remuneration by Position	Female	Male
Basic Management	1	1.40
Professional	1	1.25
Base Level	1	1.18

New Employees Remunerations

Pay standard of new employee is determined with reference to workforce supply and demand and remuneration standards on the market. The pay is to be superior to the basic wage specified in Labor Standards Act of Taiwan, with reference to the duty, education background, length of service in related fields, market workforce demand, and the pay of current CSC employees of the same position and with similar length of service. The starting point for base-level employees and engineer employees is NTD 27,100 and NTD 36,600 per month respectively. After the three-month trial, the wage is adjusted with reference to the employee's past work experience and current work performance.

Appraisal

Employees are evaluated by performance given a grade between A and E. The performance grade and remuneration structure of employees affect the amount of rewards, bonus, and salary adjustment. Employees receiving an E in the evaluation will be dismissed. Employees receiving a C will receive no salary raise. In addition, the supervisor must interview these employees and submit a performance improvement plan.

	2013	2014	2015	2016
Employees receiving an "A"	647	701	708	720
Employees receiving an "E"	0	0	0	0

Welfare

CSC provides decent working conditions for employees and commits to meeting their welfare needs. CSC Employee Welfare Committee with 27 members from the employer and employees sets welfare facilities, and CSC Employee Welfare Section handles welfare services and conducts satisfaction surveys. In 2016 the average score for satisfaction is 84. CSC subsidizes employee family activities every year through departments. In 2016, 10,147 people (including employees and family) participated in these activities. Employees are also encouraged to join clubs as a channel for work-life balance and social involvement. In 2016, there were 43 clubs and 488 activities with 18,260 participants of employees and family.

Welfare Facilities	
Employees' Welfare Store	23 shuttle bus routes
Employee Cafeteria & Mingbong Restaurant	Self-service laundry center
Single employee dormitory	Reading room
Gymnasium	Recreation center (1-4F)

Welfare Services	
Credit loans	Union member activities
Benefits for four Chinese holiday festivals and birthday cash gift	Subsidy for year-end dinner and year-end lucky lottery
Subsidy for marriage, childbirth cash gift, and scholarships and loans for children	Flexible subsidies for welfare points of Union members
Emergency care and assistance	Contract stores

Employee Residence

As a result of the CSC Group taking care of its employees, especially newcomers who are not homeowners, and the group policy for land resource activation, the CSC Group company, CPDC, started a development project of 4 residential buildings by China Steel Building. Contracts were signed for 211 units. The buildings are expected to get use permits by the end of 2018.

Employee Residential Buildings

8.2.3 Communication

Human Resources Department arranges forums every week for top management to communicate with employees from selected departments. Issues raised by employees are followed up. Besides, every department holds communication meetings with employees and representatives of the Union. Subjects discussed are also followed up.

In 2010, the Chairman Suggestion Mailbox was set up on the CSC EIP homepage for direct communication with employees. All employees are able to express opinions and give suggestions directly to the Chairman. In 2016, the topic was Cost Reduction and Care for Employees. 21 mails were received and answered, while 2 previous mails are under follow-up.

Since Jan. 28th, 1976, CSC has continuously published "CSC Biweekly" to promote its corporate culture, codes of ethics, and corporate values—teamwork, entrepreneurial approach, down-to-earthness, and pursuit of innovation. This helps to build probity and integrity of employees, including refusing improper gifts from vendors and never taking advantage of the job for personal benefits, and to form a good corporate culture and core values.

8.2.4 CSC Labor Union

http://www.cscunion.org.tw/

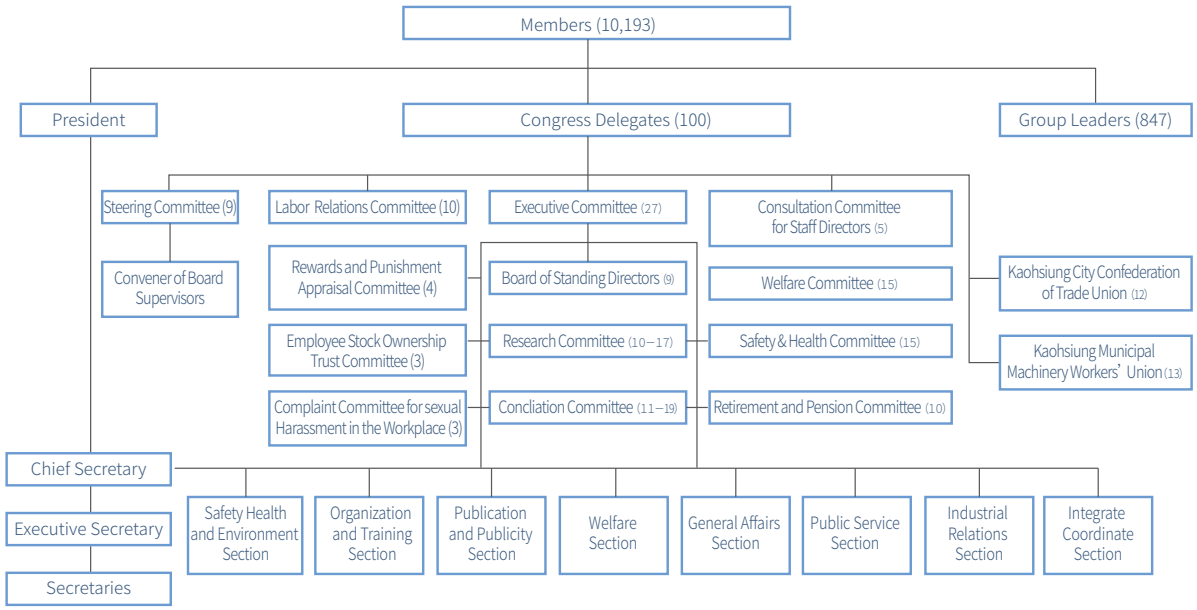
A healthy labor union can speak for employees and make suggestions for the company, so as to strive for a decent work environment, benefits, and career development for employees. The labor union helps to promote balanced development of business operations and extend social involvement of the company.

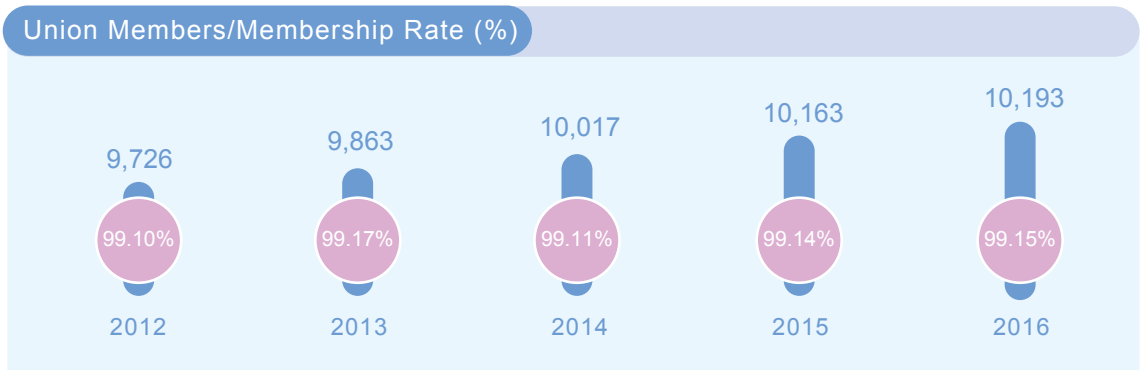
Members and Aims

CSC Labor Union was established on 30 Dec. 1980 with members from each department, except for top managements. The Union aims to promote business development from the labors' 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.

Union Organization Framework

The Delegate Congress is the highest authority of the Union, with 100 delegates elected by members from departments in each plant site. The Board of Directors with 27 directors elected by delegates is the highest authority during the adjournment. The Steering Board with 9 members elected by delegates is set to supervise the Board of Directors. The president for the Steering Board is elected from and by members of the Steering Board. The chairperson is directly elected by all members to represent the Union and to administer routine union affairs. The Secretariat and 8 functional groups implement union affairs. Membership is compulsory for all qualified employees; excluding managers of certain sections.





Collective Agreement

CSC values employer-employee relationship. To maintain unobstructed communication channels, to ensure fair and decent labor conditions, to provide a dependable reference, and to develop a stable and harmonious relationship, CSC signed the 1st Collective Agreement with CSC Labor Union on 4 Feb. 1997. This set a milestone for employer-employee harmony and settlement of affairs. With articles and concept superior than relevant legal requirements, CSC's Collective Agreement has since become a benchmark for other labor unions. In 2014, the 4th Collective Agreement was signed on 5 Dec. to further protect the rights and benefits of both parties, enhance work efficiency, and improve employer-employee harmony. Protection for the health and safety of employees was also specified.

Involvement in Corporate Governance

CSC holds periodic employer-employee meetings and helped the Union to get a directorship on the CSC Board of Directors. Since 31 May 2001, industrial democracy is realized as an employee representative has been on the Board to participate in company decision-making and to provide labor perspective. The Union also participates in the Human Resources Development Committee and in the Employee Reward and Punishment Review Committee.

Pursuit of Labor Rights and Benefits

The Union pursues labor rights and benefits with rational and peaceful means, including employer-employee meetings, seminars with directors, supervisors, and management, and collective bargaining. Protests or litigations were only used in rare situations. In 2016, no major employer-employee dispute was reported.

External Exchange and Cooperation

The draft of the Kaohsiung City Self-government Ordinance of Environment Management Article 16 passed the first reading in the City Council on 24 May 2016. On 30 May, Union faxed a statement to councilors and arranged for meetings with the council speaker, councilors, and political party conveners to seek support. On 3 June, Union held a public hearing with environmental groups to express opposition.

The draft Article 16 was to interiorize the stacking area in order to prevent dust splash. The cost of building interior stacking area is estimated around 20 bi. NTD, which would delay and reduce steel production. Referring to the steel plants in developed countries like Europe, US, Japan, and Korea, the stacking areas were not yet interiorized, thus CSC has not only built 20 m-tall wall but also a water sprinkler system and a hardener format. The result of current methods applied to preventing dust splash is almost equal to building interior stacking area. Union's position was that the Government should hold more public hearings from entrepreneurs, trade unions, and environmental groups while making any relevant act.

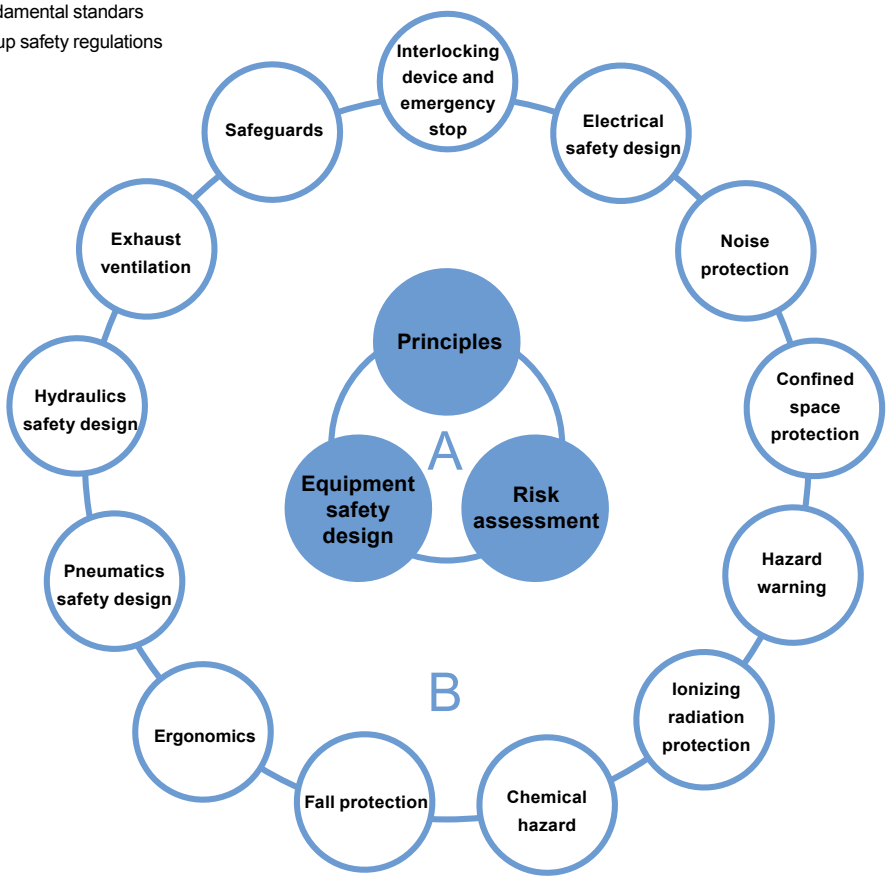
8.3 Occupational Safety and Health

8.3.1 Occupational Safety and Health

Intrinsic Safety

Workplace safety is essential to ensure worker safety. To implement and improve equipment intrinsic safety, CSC established facility safety guidelines with reference to domestic and international standards, including ISO standards for machinery safety, IEC specifications, European standards (EN), and Chinese National Standards (CNS). These facility safety guidelines aim to identify hazards and assess risks. For equipment planning and design, basic safety design principles, relevant safety conditions, and safety devices serve as references for CSC to discuss equipment safety with equipment suppliers.

● A Standard : Fundamental standars
○ B Standard : Group safety regulations



CSC Safety Culture

Safety culture is a multi-oriented concept. CSC's safety culture is composed of the following three aspects.

Policy	Safety policy statement, management organization, and resource provision.
Management	Building the corporate system framework with responsibility, control of safe practices, licenses and training, rewards and punishments, audits, improvement, and promotion of safety concerns plans.
Individuals	Changing employee safety concept and improving personal safety culture education and trainings, employee involvement, safety concerns, health concerns, and two-way communication.

ESH Policy

Given that environmental management is crucial to safety and health management, CSC combined Environmental Management System (EMS) with OHSAS 18001 into the CSC ESH Management System.

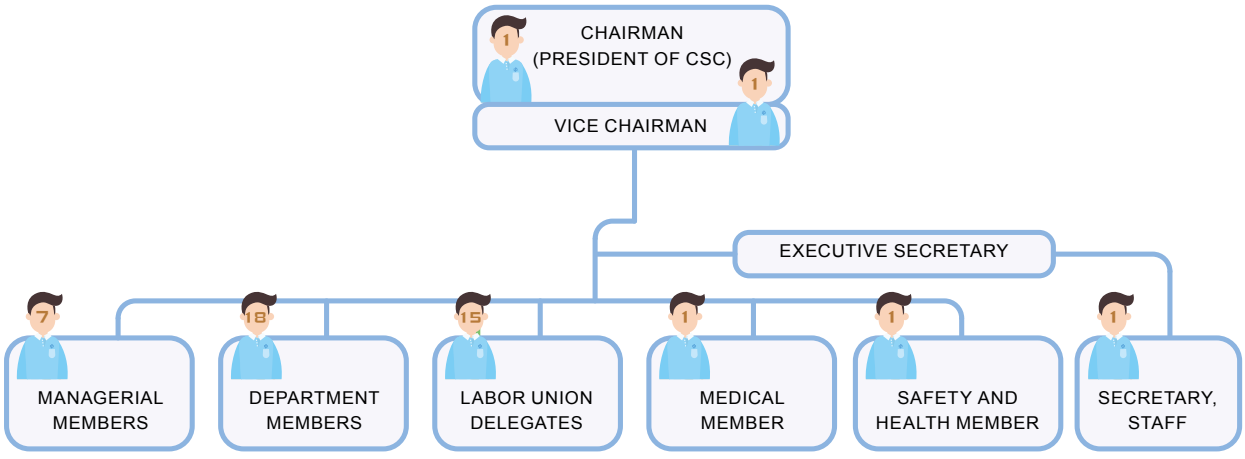
Care for Life	Respect life and practice environmental protection, safety, and health management to prevent occupational injury and illness and promote employee health.
Risk Management	Asses risks and environmental aspects and reinforce risk control and pollution prevention.
Training and Communication	Educate employees with ESH concepts, establish a self-motivated culture, encourage involvement of employees and contractors, and strengthen communication with stakeholders.
Legal Compliance	Enforce the identification and execution of legal requirements and strengthen correction and prevention functions.
Continual Improvement	Promote zero disaster, energy conservation, and emission reduction; improve ESH performance; and pursue sustainable operations.

Safety and Health Management System

For continual improvement regarding system certification requirements, the occupational safety and health management system (OSHMS) was introduced in 2000, OHSAS 18001 certification was obtained in 2002, and TOSHMS certification was obtained in 2008. In 2016, the internal audit of the TOSHMS/OHSAS 18001 system was completed in Mar. with 1 nonconformity and 70 recommendations. Audited Units took corrective and preventive actions. The external audit by the British Standards Institution was completed in July with continual certification.

Occupational Safety and Health Committee

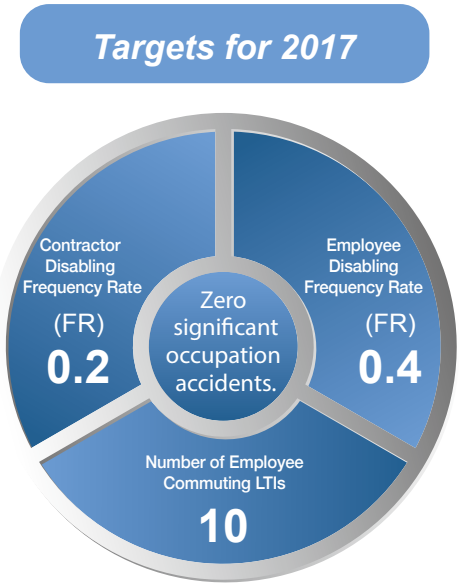
CSC Occupational Safety and Health (OSH) Committee is set for effective discussion and solution. CSC President serves as the concurrent Chairperson, Executive VP serves as the concurrent Vice Chairperson, and 15 representatives of the CSC Labor Union account for 34% of all committee members. The Committee holds bi-monthly meetings and reports OSH management performances in Annual Reports for public review.



In 2016, Occupational Safety and Health Administration, Ministry of Labor, hosted National Workplace Safety and Health Week with 217 participants from public and private sectors submitting activity plans. CSC's executive results was recognized and CSC was awarded with Certificate for National Workplace Safety and Health Week.

Countermeasures

- Promote safety Creative Development Activities (CDA)
- Request every department to interview with employees who violated transportation regulation or had accidents. Propagate transportation safety monthly and enforce clampdown on transportation regulation violations.
- Plan on-site safety diagnoses for sections with priority for those having 3 or more accidents within half a year and 1 of them is disabling.
- Check zero-accident activities every week to make sure all Units practice health caring and accident prevention before work starts. Participate in SJP reviews every month and amend SJP by discussion on feedback from employees and contractors. Edit safety briefings and training materials to enhance training for emergency scenarios.



Management of Change (MOC)

Accidents often occur when there are significant changes in personnel and working conditions; therefore, it is crucial to establish a Change Management System to ensure that every change goes through a hazard identification and risk assessment process. Appropriate measures are implemented at CSC according to the results of the assessment to ensure the safety of all manufacturing processes, activities, and services.

Certificate For National Workplance Safety And Health Week

8.3.2 Education and Trainings

Since most accidents occur out of human negligence, how to train employees to avoid negligence at work has become the focus of the CSC training and education. The computerized safety and health training management system allows instant updates of data and online enquiries, thus making safety and health training control and audit more effective. In addition, bottom-up Safety SOP Revision activities are held for employees and contractors. Discussions for revisions combined with zero-disaster danger recognition training are to elevate capability of hazard identification and for the ultimate goal of occupational accident prevention.

Industrial Safety Trainings in 2016

Description of classes	Classes	Persons
Occupational Safety and Health Act	78 (13 types)	2,293
Radiation Protection and Detection	4	403
Contractor Personnel Training for Pass Application	26	1,679

Industrial Safety Trainings in 2016

Description of classes	Classes	Persons
Physical Safety Training	152 (8 types)	2,370
Transportation Safety Training	4	305
TOSHMS/OHSAS 18001 Lead Auditor Training	1	25
Personal Protective Equipment Training	2	83
Hydraulic Aerial Cage Operating Training	5	147
CSC Group Accident Investigation Training	1	30
Occupational Safety Training by Discussion	8	159

8.3.3 Environment Inspection and Accident Prevention

Work Environment Inspection

By the Regulations for Implementing Work Environment Monitoring, every unit identifies health hazards in the work environment and assesses risks. High risks are high priorities of environmental monitoring. For hazards exceeding control thresholds, improvement and follow-up measures should be submitted to ensure the acceptable risk of personnel exposure. In 2016, work environment inspection was completed on 2,544 testing points (including areas and personnel), as in the inspection plan. Subjects for inspection include noise, wet bulb globe temperature (WBGT) index, carbon dioxide, chemical substances, and dust.

Emergency Drills

To improve emergence response and to prevent personnel injury, property loss, and environmental impact, each plant organizes emergency drills designed for their specific needs. In 2016, 5 enterprise-wide emergency drills were held.

Description of Emergency Drill	Date
Emergency drill for COG holder leak	2016.03.08
Utilities failure emergency drill	2016.07.27
Emergency drill for #1 LDG holder leak	2016.10.21
Emergency drill for liquid ammonia leak of sinter plants	2016.11.17
Emergency drill for #2 LDG holder leak	2016.12.01

8.3.4 Abnormality Control and Prevention

Overtime Work Control

For health reasons, employees should not work over 12 hours a day, including regular and overtime work. Overtime should not exceed 46 hours each month, except for special needs such as authorized emergency repair. Nonetheless, sufficient rest should be arranged afterwards.

Disaster Prevention Plan

Meeting the TOSHMS requirements of the Ministry of Labor, CSC sets safety targets and adopts PDCA steps to achieve comprehensive safety and health management and zero-disaster work environment.

Safety Observation and Audit

For early discovery 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 of "decide, stop, observe, act, and report" and subject to timely correction and encouragement. For safety violations, employees and contractors are requested of communication and immediate correction without affecting operation safety. In 2016, safety observation and audit of site managers (including site inspection) totaled 35,712 times.

Safety Concerns

To raise the awareness and ability for safety and health awareness and ability, CSC encourages all employees and contractors to communicate with and help others. Care for the mental health of workers is also an important element in CSC safety concerns. For employees or contractors who seem anxious, slow in response, or drunk, the site manager is responsible for taking care by suspending their work or sending them to medical attention according to relevant regulations.

Near Misses

After a near miss occurs, the responsible unit, personnel, or contractor should register the near miss at Near Miss Report Registration on the CSC EIP website. After the approval of section or plant manager, the case is referred to the Occupational Safety and Health Department for confirmation, documentation, publication, or announcement on the EIP. In 2016, a total of 1,019 near misses were reported. Potential hazards were reviewed and improved for prevention.

Item	2013	2014	2015	2016
Fall near misses	425	497	411	374
Crash near misses	261	271	234	181
Falling objects and collapse near misses	163	154	116	109
Commute (traffic) near misses	150	158	208	159
Other near misses	282	328	293	100
Total near misses	1,281	1,408	1,262	1,019

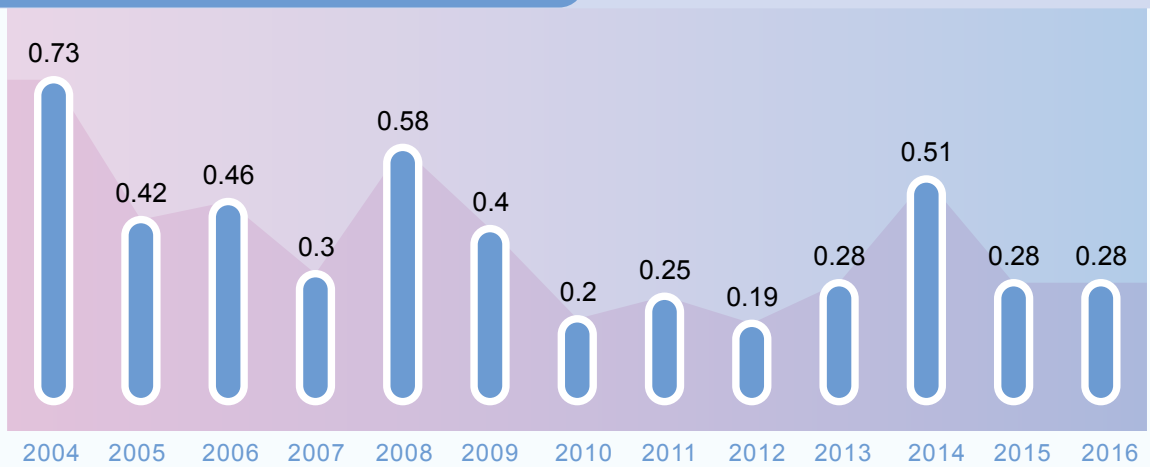
8.3.5 Absence and Disabling Injury

In 2016, 21 minor workplace injuries, 6 disabling injuries (no deaths), 16 minor commutation injuries, and 15 traffic-disabling injuries were reported. For employees and contractors of incident units, continual improvement measures include reinforced physical training, management by walking around, occupational safety diagnosis, near miss reporting management, 5S self-management, self-protection, mutual protection, and mutual supervision. Bottom-up occupational safety activities are arranged with basic-level employees or in collaboration with labor union team leaders. In addition, good management practices have significantly reduced personnel from exposure to health hazards. The implementation of work environment monitoring, special health examination and management, hazard training/education, use of personal protective equipment, and audit have minimized the rate of occupational illness. No occupational illness case was reported in the past five years.

Employee Disabling Injury Statistics & Absent Rate

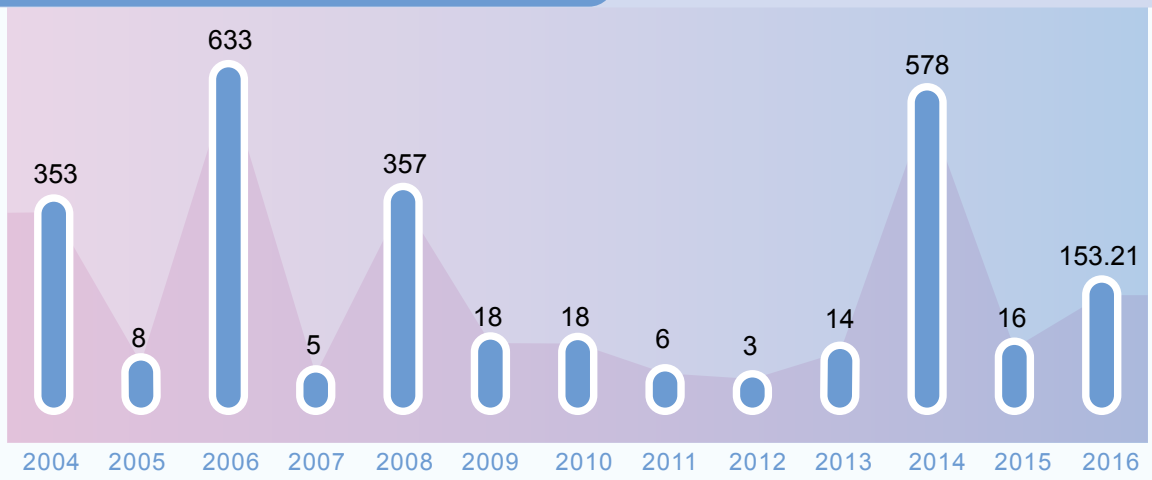
	Work-related Injuries		Sick Leave	
	Female	**Male**	**Female**	**Male**
Absent Hours	26,728	0	94,660	6,591
Absent Days	3,341	0	11,833	824
Absent Rate (AR)	0.12%	0%	0.43%	4.8%
Total Absent Rate (AR)	0.58%			
Count of Disability	6	0	-	-
Disabling Frequency Rate	0.28	0	-	-
Number of Working Hours	21,790,064		16,935	
Number of Working Days	2,723,758		2,117	
Total Working Hours	21,806,999			
Total Working Days	2,725,875			

Employee Disabling Frequency Rate



Note: Disabling Frequency Rate (F.R.) is the times of disabling per million work hours, and its formula is disabling times x 1,000,000÷ total work hours during the year.

Employee Disabling Severity Rate



Note: Employee Disabling Severity Rate (S.R.) is the times of disabling per million work hours, and its formula is number of disabling days X 1,00,000 / total work hours during the year.

Contractor Disabling Frequency Rate

Note: Disabling Frequency Rate (F.R.) is the times of disabling per million work hours, and its formula is disabling times x 1,000,000÷ total work hours during the time.

Disabling injury statistics by category in 2016

	Drop and falling	Inhalation / poisoning / anoxic	Compressed and pinched	Burning	Caught-in	Electrified
Employee	1	0	1	0	2	0
Contractor	4	0	3	0	1	0

Disabling injury statistics by category in 2016							
	Cuts and abrasions	Noise	Sprained	Collision	Fire and explosion	Commuting LTIs	Objects drop and falling
Employee	1	0	0	0	0	15	1
Contractor	1	0	0	3	0	0	0

Employee Commutation Traffic Accidents

To prevent traffic accidents during employee commute, CSC advocates traffic safety by promoting preventive driving, recommending public transport, and offering company shuttle buses. Employees who ride motorcycle to work are subject to conversation with their supervisor for traffic safety awareness. To eliminate traffic blind spots in the plant, it is requested that at least 5 traffic improvement plans are submitted each year.

8.3.6 Legal Compliance

The OHSAS 18001 and ISO 14001 management systems request company commitment to legal compliances and identification of relevant laws and regulations. CSC distributes relevant ESH legal requirements to relevant Units for identification of those applicable and for precautionary measures. In 2016, the Kaohsiung Labor Standards Inspection Office (KLSIO) conducted 89 in-plant inspections and there was no punishment and fine issued.

	2012	2013	2014	2015	2016
Reported Unit	none	LSIO	LSIO	LSIO	none
Cases (Fine, NTD)	0	1 (60,000)	2 (120,000)	2 (120,000)	0

8.3.7 Employee Health Examinations

Health Examination

CSC Infirmary is well-equipped and tended by medical professionals to provide employees with early diagnosis and treatment, and the medical fee is subsidized. CSC takes responsibility for health examination to all employees and medical advice to prevent critical illness, especially as employees age. For employees working in special environments, special health examinations are arranged for high temperature, noise, lead, dust, and organic and special chemicals. In 2016, 2,567 employees working in special environments received these examinations; there are four persons to be included in level 4 health management.

Care for Employees' Health

Based on health examination results, the Health Management Center of CSC Infirmary reminds employees of health improvement targets every year. Experts are hired to conduct research on health examination results and work environment tests to identify hazard factors and make preventive training plans.

Health Management

Health Management Center of CSC Infirmary is designed specifically for employees and contractor employees. Various health activities were organized in 2016, with 5,512 participants. One major health promotion activity was the weight-loss program, for which 294 employees who participated lost a total of 815.1 kg.

Participants of Health Promotion Activities

Item	2013	2014	2015	2016
Physical Fitness	549	606	1382	914
Talks	1610	1246	800	560
Bone Density Test	604	531	506	382
Tele-care Project	–	36	36	-
Female Employee Health Project	395	409	482	490
Precision Body Fat Analyzer	600	515	487	395
Others (health promotion, cardiovascular disease awareness, blood donation, etc)	2035	2057	1507	2771
Total	5793	5400	5200	5512

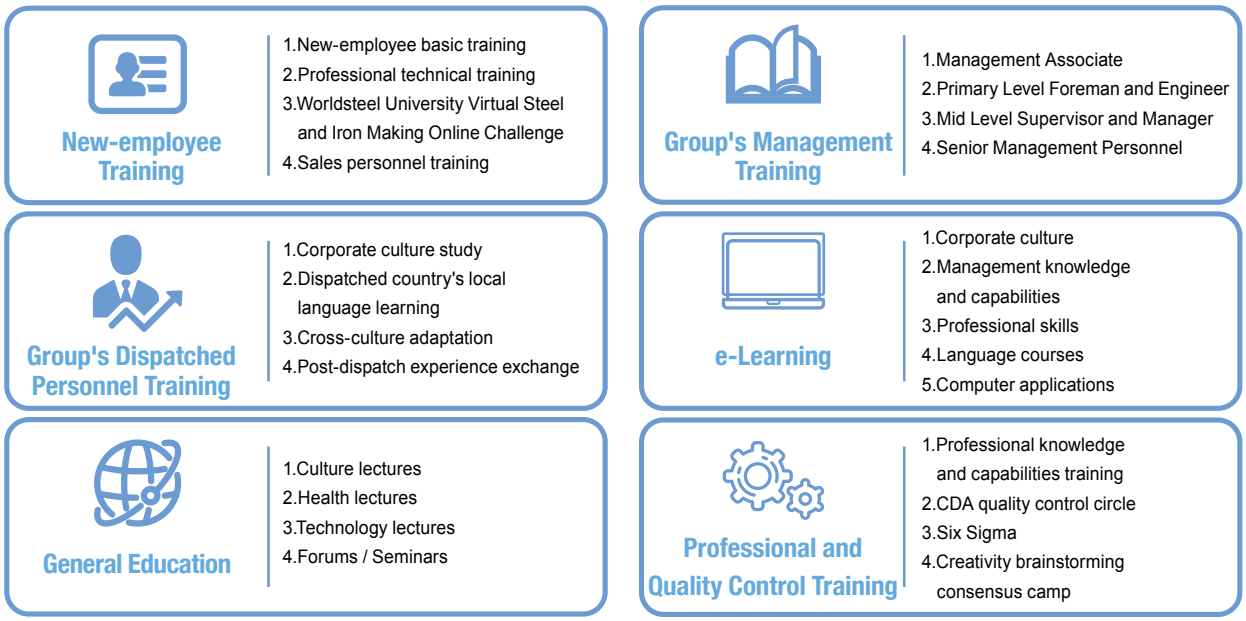
8.4 Competency Development and Career Planning

8.4.1 Training and Development Roadmap

With over 5,200 senior employees to retire in the next 15 years, the CSC manpower development is focused on corporate culture, knowledge management, and training.

Talent Cultivation and Development

CSC Talent Cultivation and Development Roadmap is constructed with 6 frameworks. In the process of developing talents, CSC is looking for the real needs of each organization and individual in order to design complete training and developing system and standards, and hold necessary training programs to upgrade their capability of knowledge and expertise. Performances and duty of all employees are examined in year-end performance evaluations. In 2016, the average class and online training per employee was 26.6 hours and 2.4 hours respectively, totaling 302,399 training hours and with 1,972.5 hours of human rights training.



New Employee Cultivation and Experience Inheritance

The CSC workforce planning is constructed based on the demand of company development strategy, investment plans, and employee retirement/resignation status. Short-, medium-, and long-term plans are made. Succession planning is also constructed based on periodic inventories of higher-level workforce. For new employees, amounting 1,000 in recent years, training include the mentorship program, knowledge management, and various courses. In addition, CSC built the knowledge management system for systematic inventory, inheritance, and innovation of workforce and documents as a precaution for the future retirement peak.

New Employee Training	CSC Corporate Culture Course (Including CSR programs)	602 participants
	Fundamental Training	1-week training on CSC basic systems and policies
	Sales Personnel Training	Introduction to CSC steel product applications at downstream industries
	Professional Skill Training	Training on mechanical and electrical engineering and maintenance for steelmaking practices
	Steel Vitality Camp	Online steelmaking simulation competition organized by the Worldsteel University.120 trainees and 48 instructors participated in 2016 for colleagues selfless sharing and team spirit.
e-Learning	Knowledge Map and Inheritance	Domestic and overseas continuing education and management/ technology best practice knowledge-sharing forum led by high-level managers every April and knowledge-sharing with other enterprises. 5,347 knowledge documents and 142 e-Learning courses were constructed in 2016.
	Knowledge Community	To reinforce knowledge sharing through discussions in various fields, 103 knowledge communities were established in by the end of 2016.
	Successor Training Program and Mentorship System	To maintain organizational core competitiveness, develop sharing culture, stimulate learning enthusiasm, and foster organizational learning. CSC was awarded the National HRD InnoPrize and Outstanding Enterprise Learning Network Award.

Group's Management Training

Trainings for production, R&D, technology, management, and foreign language respond to the needs of diversified and international operation strategies. In 2016, 61 employees were sent for management training at domestic and overseas institutions, enterprises and universities.

High-level managers	Participated the short-term business management training program in overseas universities
	Attending the high-level management training program at domestic institution and/or university
	Humanities Lecture Series
Mid-level managers	CSC Group Mid-level Managers' Management Course (in collaboration with domestic universities)
	Management Training Program for Mid-level managers
	Internal instructors training for teaching the courses of management skills, assessment center and basic-level management training
Base-level managers	Courses on leadership, communication, coordination, systematic thinking, and conflict management
	Practical mechanical and electrical techniques
	Instructed by mid-level managers on operation status and corporate culture

8.4.2 Dispatched Personnel Training

Work Experience and Living Culture Workshops

CSC has established rolling plants in Vietnam and India. For the learning and better understanding of local languages and cultures, CSC organized work experience and living culture workshops to the dispatched personnel from time to time.

Training for Directors and Supervisors for CSC and Subsidiary Companies

In compliance with Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and GTSM Listed Companies, CSC organizes three hours of advanced management training every year. Trainees include CSC directors and Division VPs, reinvested companies directors and supervisors, and relevant personnel in Group affiliates.

Training for Directors of CSC in 2016

Title	Name	Description	Hours
Director	**C.T. Wong**	Common disputes in corporate governance when merging and acquisition	3.0
		The offense and defense for business secret protection	3.0
Director	**J.C. Shen**	The low carbon development trend post Paris agreement	3.0
Director	**F.S. Wu**	Conference for Insider Trading and Corporate Social Responsibility	3.0
Director	**J.G. Liu**	Common disputes in corporate governance when merging and acquisition	3.0
		The offense and defense for business secret protection	3.0

Training for Directors of CSC in 2016

Title	Name	Description	Hours
Director	J.Y. Sung	Common disputes in corporate governance when merging and acquisition	3.0
Director	H.N. Lin	Common disputes in corporate governance when merging and acquisition	3.0
		The 11th Taipei corporate governance forum	3.0
		The offense and defense for business secret protection	3.0
Director	S.C. Wang	Common disputes in corporate governance when merging and acquisition	3.0
		The offense and defense for business secret protection	3.0
Director	C.C. Wei	The offense and defense for business secret protection	3.0
Independent Director	L.F. Kao	The legal responsibility of independent directors	3.0
		Performance of independent directors	3.0
		Practical operation of independent directors and functional committees	3.0
		Public hearing for the legal compliance of the insider trading of the listed company	3.0
		Practice of risk management, internal control and information management	3.0
		Governance for group business	3.0
Independent Director	M.H. Hon	Conference for integrity management and corporate social responsibility	3.0
		The legal responsibility of independent directors	3.0
		Performance of independent directors	3.0
Independent Director	S.B. Chang	The legal responsibility of independent directors	3.0
		The framework of corporate governance and the operation of the board of directors	3.0
		The operation of the board of directors and the effectivity of the resolution	3.0
		The low carbon development trend post Paris agreement	3.0

8.4.3 Employee Self-management

Creative Development Activities (CDA) and Suggest System (SS)

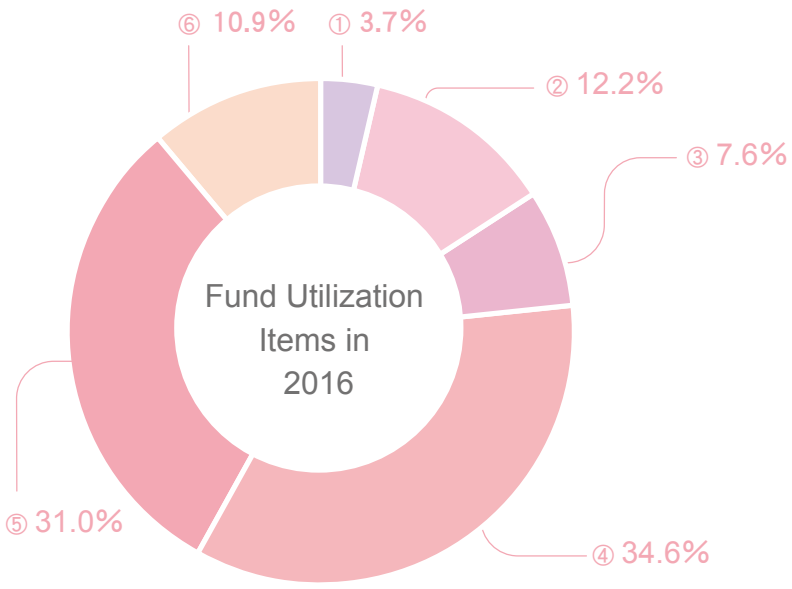
CSC promotes CDA and SS to encourage base-level employees to voluntarily find and solve problems and to inspire suggestions for corporate policy.

Items	Contents	Benefits
CDA	597 activity circles; 5,308 participants (83.0% of base-level employees); 486 completed topics	NTD 45 mi.
SS	Received 22,766 recommendations and accepted suggestions; 22,635 recommendations acceptances (acceptance rate 99.4%)	NTD 60 mi.

9.1 CSC Group Education Foundation

http://www.csc.com.tw/csc/gef

To promote steel-related education and talent cultivation, express concerns about ecology conservation, improve humanity spirit, and pursue sustainable development, the Foundation develops and implements education activities and business upon "holistic social education."



(NTD)

① Administration	658,212
② Steel education activities	2,183,629
③ Research grants	1,365,679
④ Promotion of sustainable environment development	6,196,866
⑤ Cultural, art, and educational activities	5,554,834
⑥ Other philanthropic and educational affairs	1,960,000
Total	17,919,220

Targeted Audience	Activity	Achievements in 2016	
Elementary Schools	**Ecology Education Camp**	3 sessions with over 100 participants (accumulated over 1,500 participants)	Co-organized the 10th ecology education camp with Bao-shan elementary school. Ecology observations, plant searches, and insects observations at nights were arranged.




Targeted Audience	Activity	Achievements in 2016	
Elementary Schools	**Environmental Education Tour Bus**	2 buses with over 80 volunteers; 57 tours with 51 school visits; over 7,000 participants	CSC provides buses and the funding for operation. The Foundation plans and builds portable teaching instruments, including interactive experiments on carbon footprint, greenhouse effect instruction, and solar energy application.
Senior High (Vocational) Schools	**e-week Popular Science Education Activity**	3 sessions with more over 800 participants	Co-organized the 2016 Kaohsiung Session with IBM. With the topic "Hands-on science, Create big difference", this program with games and team competition inspired students to develop programming logic and to raise interest in IT. Three sessions were been conducted on 4,12, and 17 May in Gushan, Fucheng, and Sanmin Senior High Schools.
	Humanistic and Social Talks	4 sessions with over 1,500 participants	Co-organized with United Daily News and invited speakers to senior high schools in Kaohsiung City.
Colleges and Universities	**CSC Camp**	60 out of 180 applicants were accepted	The 9th CSC Camp was organized under the name of "The Jackson of CSC". Visits to Sanyang Motor and CSBC, downstream of CSC, were arranged to attract students to engage in metal-related industries though edutainment.
	Introductory Course of Steelmaking	About 200 enrollments	Courses were offered in National Cheng Kung Univ. and National Tsing Hua Univ. in the first semester and in National Taiwan Univ and National Sun Yat-sen Univ. in the second semester.
	Industrial Talent Training Project	About 60 enrollments	Continued to sponsor Department of Chemical and Materials Engineering, National Univ. of Kaohsiung to offer courses on steel making technologies. Besides professors, the instructors are from CSC and downstream industries.
	Steelmaking Talent Scholarship	15 recipients	Scholarship recipients were named in November.









Targeted Audience	Activity	Achievements in 2016	
General Public	**Seminars and Conferences about Steelmaking and Environmental Technology**	About 1,000 participants	Workshop of Metallography, Steel Industry Engineering and Technology Conference, Technology Exchange Conference for Electromagnetic Steel, Hydraulic and Hot Stamping Technology Exchange Conference, Fastener Technology Conference, Steel Industry Operational Management Conference, and Conference of Steel Technology in high Performance Steel Structure were held in 2016.
	CSC Citizen Lecture	12 lectures with over 3,000 participants	Invited experts from different fields to give lectures.
	Spirit Growth Lectures	4 lectures with over 1,000 participants	Co-organized with Teacher Chang Foundation to host lectures on spiritual growth and parenting.

Other Events in 2016

- CSC Group Education Foundation was awarded Excellent Award for the 5th National Education Award.
- Sponsored Kaohsiung MRT for "2016 hope, love Kaohsiung MRT road running" on Dec. 3 at the Gangshan South Station, to encourage people to take the mass transit system. About 4,000 people attended.
- Sponsored Kaohsiung City Creativity Learning Center for "Creative Sport Games", which includes creative activities in mathematics, language, natural science and technology and other related fields. About 3,500 primary and secondary school teachers and students participated.
- Sponsored 2016 Jade Mountain Forum on Sustainable Environment.
- Sponsored "Wheelchair concert" and "Street artist show." About 500 people attended.
- Entrusted the Sun Yat-sen University to hold "Cross-Generation Social Changers Proposal Competition."
- Co-organized 2016 "Creative Maker 123" series of lectures, received about 40 Kaohsiung City primary and secondary school teachers to visit the CSC Group Headquarters and the Group Exhibition Room.
- Sponsored "My dear, I am old" special exhibition, for the first mature mature-age exhibition in Taiwan, to promote active aging, happy learning, inter-generation communication concept. The exhibition opened in Mar. 2017 in National Science and Technology Museum.
- Composed the image video "Service heart, so that Taiwan is more like a home", to promote the willingness to serve society image of CSC people to the public.
- Sponsored charity fair on Dec. 4 in Camp Wei-Wu.
- Invited Mr. Hi-Fang Wang, the dean of Taiwan Art Institute, to perform calligraphy on the CSC Anniversary Fair to promote art and culture.

Concert performed by cellist Chen-Chieh Chang for wheelchair users

9.2 Corporate Citizen

9.2.1 Principles

v Proactivity and Responsibility

Fulfills corporate responsibility for the safety, health, wages, benefits, human rights, and training of employees and contractors.

v Local First

Emphasizes on local environments and safety, pays Kaohsiung City Government with business income tax and environmental protection fees, and promotes regional development.

v Diversity

Tends to rights and benefits of shareholders, employees, contractors, local communities, and contribute to public policies and international affairs.

v Accountability

Assumes social responsibility through Departments, CSC Labor Union, employee clubs, and CSC Group Education Foundation.

9.2.2 Diverse Social Involvements

CSC broadly engages in the society through diverse channels. Regular social involvements include

Category	Responsible CSC Department	Work
Energy and environmental policies	Office of Energy and Environmental Affairs	Advice on energy and environmental regulation amendments
		Advice on low-carbon economy, carbon credit policy, and industrial development of southern Taiwan
		Advice on carbon emission responsibility for maintaining fairness of international competition
Human rights and workforce development	Human Resources Department	Negotiation for decent work environment policies
		Share of knowledge
Safety and Health	Industrial Safety and Health Department	Prevention of occupational accidents and epidemic diseases
		Domestic and international exchanges
National and local public affairs	Public Affairs Department	Good-neighbor acts, social care, and emergency relief
		Engagement with congresspersons, government agencies, media, and opinion leaders
Social education	CSC Group Education Foundation	Educational activities regarding steelmaking and steel applications
		Cultural, arts, technology, and science educational activities sponsorship
Labor policy	CSC Labor Union	National labor rights, benefits, and welfare policies
		Exchanges, collaboration, and interactions with other union groups
Social concerns and cultural and arts activities	CSC, CSC Group Education Foundation, CSC Labor Union, and employee clubs	Emergency relief and post-disaster reconstruction
		Care for underprivileged groups
		Environmental protection
		Improvement of humanities and art literacy in Kaohsiung

9.2.3 Volunteer Groups

CSC employees actively volunteer for external organizations. The CSC Caring Club is registered at Kaohsiung City Social Welfare Bureau as a legal group under the name of "Kaohsiung City Charity Association" and has participated in various community activities, services, and reliefs.

9.2.4 Feedback to Society and Good-neighbor Acts

CSC commits to corporate responsibility, in decades actively caring for and assisting in community development and sponsoring various public welfare activities in Hsiaokang. CSC upholds the "take from society, give back to society" concept and continues making efforts for the well-being of the society, communities, and vulnerable groups.

Local Culture and Education

- v Sponsors schools in Hsiaokang District for equipment renewal and assists with plantation and landscaping to mitigate global warming. For equipment renewal: Feng-Ming, Guei-Lin, Tai-Ping, Chin-Shan, Ming-Yi, Feng-Lin, Hua-Shan and Ping-Ding Elementary Schools, Siao-Gang Junior High School; For plantation and landscaping: Siao-Gang Senior High School, Chun-Shan Junior High School.
- v Sponsors communities and social clubs in Hsiaokang District for various activities.
- v Assists the district office in distributing aids to low-income families in Hsiaokang District on major festivals and for emergency relief.
- v Offers extra points for candidates from Hsiaokang District in the CSC employee recruitment.
- v Offers scholarships for academic achievements and to underprivileged schoolchildren in Hsiaokang District.
- v Organizes activities for underprivileged groups to foster public care.
- v Hosts movie viewings every Saturday for the local community, opens sports facilities for locals, and invites the locals to join the CSC Anniversary Fair.
- v CSC Kindergarten: Established by CSC Welfare Committee, the kindergarten accepts children of CSC employees and citizens living in Hsiaokang District.
- v Organizes summer camps for elementary schoolchildren with priority acceptance for underprivileged students.

2016 King of Wisdom Summer Camp

- Plans the "Steel Journey" fieldtrip for elementary schools in Hsiaokang District to improve the environmental and science literacy of students. A total of 1,500 6-graders from 13 elementary schools in Hsiaokang participated in 2016.
- To celebrate Mother's Day and promote the virtues of filial piety, CSC invited about 500 children of 17 elementary and junior high school to participate in 2016 awarding ceremony for filial model recognition and scholarship for excellent grades .
- Assists in local cultural and arts activities. In 2016, CSC assisted Kaohsiung City Cultural Affairs Bureau in organizing the "Grassland Concert - Titanic LIVE," "The IMpact Taiwan," and Taiwanese Opera "Witness the Fortress."

Emergency Assistance and Post-disaster Reconstruction

CSC Group donated NTD 10 million and its employees donated NTD 10.19 million for 0206 Tainan earthquake disaster relief.

9.2.5 Services for Retired Employees

CSC Retirees Services Department was established on 25 Jan. 2011 to provide retirees services regarding health, finances, partner, leisure, and friendship. In addition, CSC Retirees LOHAS Society was established on 27 Feb. 2014 by CSC Group retirees for healthy lifestyles and social welfare activities.

Target	Item	Content	Achievements in 2016
Employees near Retirement	Retirees LOHAS Seminar	Assistance for life management after retirement	2 sessions
	Farewell Party		4 sessions
	Retiree Talent Pool	Utilization of specific expertise of retirees for CSC and subsidiaries	108 retirees were newly enlisted after evaluation and made the cumulative total 447
Retired Employees	Health	Discounted health examination	33 retirees participated
	Finances	CSC Stock Ownership Trust Committee for Retired Employees	11 new participants made the cumulative total 131
	Partner, Leisure, and Friendship	Monthly retiree birthday parties Invitations to CSC activities	12 sessions
			Corporate anniversary
			2 health lectures and 6 citizen lectures

9.2.6 Social Responsibility Expenditures

Item	Content	Amount in 2016 (million NTD)
Donations for institutes and associations	Sponsorship for seminars and conferences	2.35
Donations for philanthropy	For good-neighbor acts, local philanthropic activities, emergency relief, and post-disaster reconstruction.	48.18
	Donation of 311 public bikes for the KRT	0.78
Donations to CSC Group Education Foundation	For cultural and arts education, steel education, and steel talent cultivation	10.72
CSC Retirees Services Department	Retiree benefits reserve	15.83
Total amount		**77.86**

CSC joins domestic and international associations and participates in their activities. To build diverse communication channels between CSC and others as well as to elevate the overall competitiveness of the company, CSC sponsors seminars, forums, and conferences held by those organizations. In 2016, the CSC donation for seminars and conference totaled 2.35 million. Among the CSC sponsored institutes and associations, those related to environmental protection, sustainable energy, and safety and health were as follows.

Sponsored Institute and Association	Sponsored Event
Society of Automotive Engineers (SAE)	Sponsorship for 24th SAE Super mileage Competition
Business Council for Sustainable Development of Taiwan	Sponsorship for The Competition of Entrepreneurship for Sustainability
Chinese Environmental Analytical Society	2016 Environmental Analytical Chemistry Conference
Taiwan Safety Council	Safety Culture Academic Forum
Taiwan Association for Aerosol Research	2016 Conference on Fine Particulate Matter (PM2.5) & Healthcare
Taiwan Environmental Law Association	Operating funds for association affairs
Taiwan Association of Environmental and Resource Economics	Conference on Development of Energy S&T and Industrial Transformation for Green Growth
Occupational Hygiene Association of Taiwan	2016 Occupational Hygiene Conference and the Seventh Cross-Straits Occupational Hygiene Academic Conference
National University of Kaohsiung	Post Paris: International Conference on Climate Change Management for Corporations
National Kaohsiung First University of Science and Technology	Conference for Industrial Environmental, Safety, Health and Fire Safety Engineering
National Yunlin University of Science and Technology	2016 Cross-Straits Industrial Safety Forum

9.2.7 Advice for Public Policies

CSC collects the experiences of advanced countries and hosts open forums with the industry, the government, and the academia. Through representative institutes and associations, CSC contributes advice on regulations and policies.

GHG Reduction and Management Act	• Collect information of total emission control and emission policies in the EU, South Korea, and the UK. Invite domestic experts to discuss and to get consensus to provide government as suggestions.
	• Referring to Korean and Japanese policies proposing rational carbon reduction targets for the industry and nationwide.
	• Participated in the communication of regulations and policies. Provided suggestions to encourage early actions for carbon reduction.
Soil Pollution Control Standards	• CSC via the CNFI commissioned the ERM Consultancy to hold three round table forums to build consensus to modify the Soil Pollution Control Standards. The government, the academia, the industries, and NGOs all joined the forum. In April 2016, CNFI informed EPA the consensus as references for standards amendment.
Air Pollution Control	• CSC proposed to the government that air pollution control should also consider cost effectiveness and least cost principles, in order to take into account both environmental protection and economic growth. Therefore, pollution reduction potential and cost should be investigated and considered prior to policy making.
	• The equal responsibility and power should be a considered for the monitoring and tracking committee for total amount control of air pollution. Therefore, more members from the industry should be included in the committee.
	• The collection of monitoring fee for special industrial parks is duplicated from the air pollution fee and the monitoring fee should be paid from the air pollution fee.
The Kaohsiung City Self-government Ordinance of Environment Management	• The KSEPB planned to amend the Ordinance to require CSC to cover stockpile yard to reduce dust emission. However, the cost was too heavy and too risky for CSC. CSC and its labor union communicated with the city council and KSEPB during the amendment process. The councilors and KSEPB officers were convinced and decided to withdraw the amendment bill.
	• The KSEPB also planned to advance a voluntary carbon reduction project. CSC supported the project and proposed some suggestions to better the implementation.
Waste Disposal Act	• CSC provided operational practices of waste reutilization organizations to the MOEA in the public hearing meetings, and suggestions to the Regulation for Industrial Waste Reutilization.
	• In 2015 there was a major amendment to the Act, which includes the definition of waste, liabilities for waste generators in waste illegal dumping cases, and other relevant articles. CSC via the CNFI provided rationalization suggestions to Taiwan EPA and communicated with the authorities, legislators, and NGOs to better the Act and reduce impact on the industry.
Draft of collection for water conservation charge	• It is recommended that water conservation charge should be gradually collected in five years, so that enterprises have time to improve and reduce the impact of the surge in factory costs.
	• For groundwater users, it is recommended that water conservation charge should be increased to conserve groundwater resources.
	• It is recommended to increase the exemption proportion of water conservation charge up to 100%, otherwise it is hard to encourage manufacturers to actively take conservation measures.
Draft of regulations on governing the use of reclaimed water in regions with the likelihood of water undersupply	• It is recommended that the authority should carefully announce regions with the likelihood of water undersupply to reduce the affected area.
	• If the location of the development site cannot provide enough reclaimed water, it is recommended that the authority should assist the development unit in obtaining other sources of water supply.
	• It is recommended that it should be implemented in stages by the supply of reclaimed water and decrease the use ratio from above 50% to 30%, to reduce the water cost of the development unit.

9.3 LOHAS Homeland

9.3.1 Environmental Impact Mitigation

- **Ecology conservation:** CSC complies with EIA commitments in Linhai Industrial Park. In addition, CSC participates in River Watch of the KSPEB to patrol Yanshuigang River three times a day. In Oct. 2016, CSC was awarded with 2016 Outstanding River Watch by KSPEB.
- **Energy conservation and emissions reduction:** For continual improvement and to meet with international standards, CSC reduces environmental impacts through target management and EMS operations. Outstanding performances have been made in air pollutant reduction, waste to resource, river protection, and dioxin prevention and control.
- **Pubic transport sponsorship:** To encourage employees to commute by KRT, CSC launched monthly business card in collaboration with KRT Co., for which CSC sponsors part of the fare, and provides free shuttle bus services to and from KRT R3 Hsiaokang Station. In 2016, 5,125 monthly business cards were used and free shuttle bus services served 76,235 persons. CSC gave out 10,170 KRT gift vouchers, valued 400 each, in the 2016 Anniversary Fair.

9.3.2 Eco-city Development

Eco-city is a global trend and one of the administrative foci of central and local governments in Taiwan. In recent years, the CSC eco-city development efforts include:

- Donation of public bikes for citizens to take the KMRT, so as to reduce emissions from commutation.
- Participation in reuse of waste energy and application of waste energy to processes to conserve energy, reduce emissions, and reduce pollutants.
- Expansion of the treatment, recycle, and reuse of industrial wastewater and municipal sewage.
- Promotion of smart grid applications in Linhai Industrial Park.
- Expansion of the scope of CSC Group green procurement and employee green consumption to assist in the development of green products in Kaohsiung.
- Implementation of low-carbon life calculators for employees to record carbon footprint in daily lives and to promote emissions reduction.

9.3.3 Afforestation and Greenery

CSC enriches the ecosystem with trees, shrubs, and vegetation for multilayer greening, and building roofs and walls are included for total greenery and beautification. Green area on the CSC plant site totals at 44.4 hectares, with a greening rate at 8.42%. These plants can reduce up to 5,170 tCO_2e every year. CSC also sponsors the greening and beautification of Kaohsiung Park near Kaohsiung International Airport, Chungshan 4th Road, Yenhai Road, and Chung-Kang Road of Kaohsiung City.

Afforestation and Greenery

Item	2013	2014	2015	2016
Greening area (m^2)	439,652	443,871	444,236	443,928
Greening rate	8.34%	8.42%	8.43%	8.42%
Trees	16,704	16,831	16,692	16,715
Shrubs	1,510,052	1,596,710	1,655,660	1,669,714
Total of trees and shrubs	1,526,756	1,613,541	1,672,352	1,686,429
Trees and shrubs per hectare	2,897	3,062	3,173	3,200
Lawn (m^2)	173,724	174,161	175,270	180,086
Vegetation (m^2)	258,973	253,188	248,513	242,859
Resident and migratory birds (species)	75	78	80	80
CO_2e reduction (t/year)*	4,711	4,786	5,003	5,170

*Calculated based on "CO_2 Reduction Efficiency of CSC Greening Report" by Pingtung Univ. of Science and Technology, 2008


Chungshan Road


Chungshan Road


Kaohsiung Park


CSC plant


CSC plant


CSC plant

9.3.4 Biodiversity

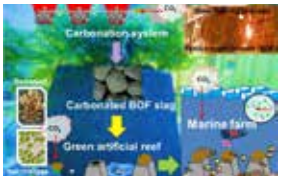
Biodiversity

CSC is not located in or near ecological reserves, yet CSC has built an environment for biodiversity. CSC Bird watching Club has observed 3 mammal species, 5 amphibian reptile species, 1 reptiles species, 34 insect species, 1 annelida species, 3 fish species, and 80 bird species living on the CSC plant site. The efforts on biodiversity help to improve the ecosystem in Hsiaokang District.






Marine Forest & Farm Development



In order to promote the high value added application of BOF slag, referencing the experiences in Japan and South Korea, CSC cooperated with Tainan Hydraulics Laboratory, National Cheng Kung University, to proceed the project of National Energy Program-Phase II (Carbon Reduction and Clean Coal Focus) from 2016 to 2018. The main target of the project is to construct marine forest and farm through developing the technology for designing and building artificial reef with carbonated BOF slag for algal cultivation to realize CO_2 fixation. Because BOF slag contains the nutrients (Fe, Si, Ca) when carbonated by utilizing the CO_2 from flue gas, not only carbon reduction is achieved, it can also be a cherished resource for marine restoration. The first stage of the project to put the algal reef into the sea will be done by the end of 2017.

Appendix 1 GRI Content Index

Indicator	Description	Disclosure and Assurance	Chapter		Page	Remark
G4-1	Provide a statement from the most senior decision-maker of the organization about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	V	1.1	Message from Top Management	2	
G4-2	Provide a description of key impacts, risks, and opportunities.	V	3.1	Sustainable Governance	18	
			3.2	CSR Management	25	
G4-3	Report the name of the organization.	V	1.4	About CSC	10	
G4-4	Report the primary brands, products, and services.	V	1.4	About CSC	12	
			5.1	Products and Applications	47	
G4-5	Report the location of the organization's headquarters.	V	1.4	About CSC	10	
G4-6	Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	V	1.4	About CSC	12	
G4-7	Report the nature of ownership and legal form.	V	1.4	About CSC	12	
G4-8	Report the markets served.	V	1.4	About CSC	12	
G4-9	Report the scale of the organization.	V	1.4	About CSC	12	
G4-10	Report the total number of employees.	V	8.1	Recruitment and Retention	88	
G4-11	Report the percentage of total employees covered by collective bargaining agreements.	V	8.2	Human Rights and Benefits	94	
G4-12	Describe the organization's supply chain.	V	6.3	Energy and Resources Usage	60	
			7.6	Supply Chain Management	82	
G4-13	Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	V	-	-	-	No significant change
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	V	3.1	Sustainable Governance	19	
			3.2	CSR Management	34	
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	V	3.1	Sustainable Governance	18	
			3.2	CSR Management	25	
G4-16	List memberships of associations and national or international advocacy organizations in which the organization.	V	7.5	External Communication and Cooperation	81	
G4-17	a. List all entities included in the organization's consolidated financial statements or equivalent documents.	V	2.2	Data Range	14	
			3.2	CSR Management	25	
	b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	V	2.2	Data Range	14	
			3.2	CSR Management	25	
G4-18	a. Explain the process for defining the report content and the Aspect Boundaries.	V	3.2	CSR Management	30	
	b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.					

Indicator	Description	Disclosure and Assurance		Chapter	Page	Remark
G4-19	List all the material Aspects identified in the process for defining report content.	V	3.2	CSR Management	34	
G4-20	For each material Aspect, report the Aspect Boundary within the organization.	V	3.2	CSR Management	34	
G4-21	For each material Aspect, report the Aspect Boundary outside the organization.	V	3.2	CSR Management	34	
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	V	-	-	-	No restatement
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	V	3.2	CSR Management	30	
G4-24	Provide a list of stakeholder groups engaged by the organization.	V	3.2	CSR Management	26	
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	V	3.2	CSR Management	26	
G4-26	Report the organization's approach to stakeholder engagement.	V	3.2	CSR Management	26	
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns.	V	3.2	CSR Management	26	
G4-28	Reporting period for information provided.	V	2.2	Data Range	14	
G4-29	Date of most recent previous report.	V	2.4	Previous Reports	15	
G4-30	Reporting cycle.	V	2.4	Previous Reports	15	
G4-31	Provide the contact point for questions regarding the report or its contents.	V		Back cover		
G4-32	a. Report the 'in accordance' option the organization has chosen.	V	2.3	Assurance	15	
	b. Report the GRI Content Index for the chosen option.			Appendix 1	118	
	c. Report the reference to the External Assurance Report.			Appendix 5	128	
G4-33	a. Report the organization's policy and current practice with regard to seeking external assurance for the report.	V	2.1	Editing Principles	14	
	b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided					
	c. Report the relationship between the organization and the assurance providers.		2.3	Assurance	15	
	d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.					
G4-34	Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	V	3.1	Sustainable Governance	19	
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	V	3.1	Sustainable Governance	21	

Indicator	Description	Disclosure and Assurance		Chapter	Page	Remark
Economic						
G4-EC1	Direct economic value generated and distributed from the organization.	V	4.1	Operation and Finance	38	
G4-EC2	Financial implications and other risks and opportunities on the organization's activities due to climate change.	V	6.4	Climate Change and CDP	61	
G4-EC3	Coverage of the organization's defined benefit plan obligations.	V	8.2	Human Rights and Benefits	92	
G4-EC4	Financial assistance received from government.	V	4.1	Operation and Finance	41	
G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	V	8.2	Human Rights and Benefits	92	
G4-EC6	Proportion of senior management hired from the local community at significant locations of operation.	V	8.1	Recruitment and Retention	88	
G4-EC7	Development and impact of infrastructure investments and supporting services.	V	9.2	Corporate Citizen	111	
G4-EC8	Significant indirect economic impacts, including the extent of impacts.	V	3.1	Sustainable Governance	18	
G4-EC9	Proportion of spending on local suppliers at significant locations of operation.	V	7.6	Supply Chain Management	82	
Environment						
G4-EN1	The weight or volume of materials used.	V	6.3	Energy and Resources Usage	60	
G4-EN2	Percentage of materials using recycled raw materials.	V	6.3	Energy and Resources Usage	60	
G4-EN3	Energy consumption within the organization.	V	6.3	Energy and Resources Usage	60	
G4-EN4	Energy consumption outside of the organization.	V	6.3	Energy and Resources Usage	60	
G4-EN5	Energy intensity.	V	6.3	Energy and Resources Usage	60	
G4-EN6	Reduction of energy consumption.	V	6.5	Green Process	64	
G4-EN7	Reductions in energy demands of products and services.	V	6.5	Green Process	64	
G4-EN8	Total water withdrawn classified according to sources.	V	6.5	Green Process	68	
G4-EN9	Water sources significantly affected by withdrawal of water.	V	6.5	Green Process	68	
G4-EN10	Percentage and total volume of water recycled and reused.	V	6.5	Green Process	68	
G4-EN11	Operation sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	V	9.3	LOHAS Homeland	116	
G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	V	9.3	LOHAS Homeland	116	
G4-EN13	Protected or restored habitats.	V	9.3	LOHAS Homeland	116	
G4-EN14	Explain the total number of species listed on IUCN Red List and national conservation list in the habitats affected by operations according to the level of extinction risk.	V	-	-	-	None
G4-EN15	Direct greenhouse gas (GHG) emission.	V	6.5	Green Process	63	
G4-EN16	Indirect greenhouse gas emission of energy.	V	6.5	Green Process	63	
G4-EN17	Other indirect greenhouse gas emissions.	V	6.5	Green Process	63	
G4-EN18	Greenhouse gas emissions intensity.	V	1.2	Overview	5	
G4-EN19	Reduction of greenhouse gas emissions.	V	6.5	Green Process	65	
G4-EN20	Emissions of ozone-depleting substances (ODS).	V	6.5	Green Process	65	
G4-EN21	NOx, SOx, and other significant air emissions.	V	6.5	Green Process	65	
G4-EN22	Total water discharge classified according to quality and destination.	V	6.5	Green Process	68	
G4-EN23	Total weight of waste classified according to type and disposal method.	V	6.5	Green Process	71	

Indicator	Description	Disclosure and Assurance		Chapter	Page	Remark
G4-EN24	Total number and volume of significant spills.	V	6.8	Legal Compliance	74	
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	V	-	-	-	None
G4-EN26	Features, area, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff.	V	6.5	Green Process	68	
G4-EN27	Reduce the level of the impacts of products and service on the environment.	V	5.3	Green Products	52	
G4-EN28	Explain the percentage of products sold and their packaging materials recycled according to the category.	V	6.6	Byproduct Utilization	72	
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	V	6.8	Legal Compliance	74	
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce.	V	6.5	Green Process	63	
G4-EN31	Explain the total environmental protection expenditures and investments according to type.	V	6.7	Environmental Accounting	73	
G4-EN32	Percentage of new suppliers that were screened using environmental criteria.	V	3.1	Sustainable Governance	16	
			7.6	Supply Chain Management	82	
G4-EN33	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken.	V	3.1	Sustainable Governance	16	
			7.6	Supply Chain Management	82	
G4-EN34	Number of grievances about environmental impacts filed, addressed, and solved through formal grievance mechanisms.	V	6.9	Environmental Grievances	74	
Socal: Labor Practices and Decent Work						
G4-LA1	Total number and rates of new employee hired and employee resigning by age group, gender, and region.	V	8.1	Recruitment and Retention	88	
G4-LA2	Benefits provided to only full-time employees, classified by significant locations of operation.	V	8.2	Human Rights and Benefits	92	
G4-LA3	The rate of returning to work and retention after parental leave, by gender.	V	8.1	Recruitment and Retention	88	
G4-LA4	Minimum notice periods regarding operational changes, including whether there are specified in collective agreements.	V	8.1	Recruitment and Retention	88	
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	V	8.3	Occupational Safety and Health	96	
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities by region and by gender.	V	8.3	Occupational Safety and Health	101	
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation.	V	8.3	Occupational Safety and Health	101	
G4-LA8	Health and safety topics covered in formal agreements with trade unions.	V	8.2	Human Rights and Benefits	92	
G4-LA9	Average hours of training per year per employee by gender and by employee category.	V	8.4	Competency Development and Career Planning	104	
G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	V	8.4	Competency Development and Career Planning	104	

Indicator	Description	Disclosure and Assurance		Chapter	Page	Remark
G4-LA11	Percentage of employees receiving regular performance and career development reviews by gender and by employee category.	V	8.2	Human Rights and Benefits	93	
G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	V	8.1	Recruitment and Retention	89	
G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	V	8.2	Human Rights and Benefits	92	
G4-LA14	Percentage of new suppliers that were screened using labor practices criteria.	V	7.6	Supply Chain Management	82	
G4-LA15	Significant actual and potential negative impacts on labor practices in the supply chain and actions taken.	V	3.1	Sustainable Governance	16	
			7.6	Supply Chain Management	82	
G4-LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance.	V	8.2	Human Rights and Benefits	92	No greivance
Socal: Human Rights						
G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening.	V	7.6	Supply Chain Management	82	
G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	V	8.4	Competency Development and Career Planning	104	
G4-HR3	Total number of incidents of discrimination and corrective actions taken.	V	8.1	Recruitment and Retention	88	0
G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights.	V	3.1	Sustainable Governance	16	
			7.6	Supply Chain Management	82	
G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition.	V	3.1	Sustainable Governance	16	
			7.6	Supply Chain Management	82	
G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	V	3.1	Sustainable Governance	18	
			7.6	Supply Chain Management	82	
G4-HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations.	V	7.6	Supply Chain Management	83	100%
G4-HR8	Total number of incidents of violations involving rights of aborigines and actions taken.	V	-	-	-	0
G4-HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments.	V	3.1	Sustainable Governance	16	100%
			7.6	Supply Chain Management	82	
G4-HR10	Percentage of new suppliers that were screened using human rights criteria.	V	3.1	Sustainable Governance	16	~100%
			7.6	Supply Chain Management	82	
G4-HR11	Significant actual and potential negative impacts on human rights in the supply chain and actions taken.	V	3.1	Sustainable Governance	16	None
			7.6	Supply Chain Management	82	

Indicator	Description	Disclosure and Assurance		Chapter	Page	Remark
G4-HR12	Number of grievances about human rights filed, addressed, and resolved through formal grievance.	V	8.2	Human Rights and Benefits	92	No greivance
Socal: Society						
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	V	9.2	Corporate Citizen	111	
G4-SO2	Operations with significant actual and potential negative impacts on local communities.	V	9.3	LOHAS Homeland	116	
G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified.	V	3.1	Sustainable Governance	23	
G4-SO4	Communication and training on anti-corruption policies and procedures.	V	3.1	Sustainable Governance	22	
G4-SO5	Confirmed incidents of corruption and actions taken	V	-	-	-	No incident
G4-SO6	Total value of political contributions by country and recipient/ beneficiary.	V	3.1	Sustainable Governance	21	
G4-SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	V	7.1	Fair Trade	75	0
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	V	6.8	Legal Compliance	74	0
G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society.	V	3.1	Sustainable Governance	16	100%
			7.6	Supply Chain Management	82	
G4-SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken.	V	3.1	Sustainable Governance	16	
			7.6	Supply Chain Management	82	
G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms.	V	3.1	Sustainable Governance	23	0
Socal: Product Responsibility						
G4-PR1	Percentage of significant product and service categories of which the impacts are assessed for improving health and safety.	V	5.3	Green Products	52	100%
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.	V	-	-	-	0
G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements.	V	-	-	-	100%
G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	V	-	-	-	0
G4-PR5	Results of surveys measuring customer satisfaction.	V	5.4	Optimization of Customer Service	55	
G4-PR6	Sale of banned or disputed products.	V	-	-	-	None
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications (including advertising, promotion, and sponsorship), by type of outcomes.	V	-	-	-	None
G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	V	5.4	Optimization of Customer Service	56	0
G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	V	-	-	-	0

Mining and Metals Supplement

Indicator	Description	Disclosure and Assurance	Chapter	Page	Remark
MM1	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated.	V	-	-	Not located in protected areas or areas of high biodiversity value outside protected areas
MM2	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place.	V	-	-	Not located in protected areas or areas of high biodiversity value outside protected areas
MM3	Total amounts of overburden, rock, tailings, and sludge and their associated risks.	V	-	-	Not applicable
MM4	Number of strikes and lock-outs exceeding one week's duration, by country.	V	-	-	No strikes or lock-outs
MM5	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities.	V	-	-	Not located in or close to the aboriginal areas
MM6	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples.	V	-	-	Zero dispute
MM7	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes.	V	-	-	Not located in or close to the aboriginal areas, and no problems of land usage and rights invasion
MM8	Number (and percentage) or company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; the associated risks and the actions taken to manage and mitigate these risks.	V	-	-	Zero ASM
MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process.	V	-	-	No resettlement took place
MM10	Number and percentage of operations with closure plans.	V	-	-	No closure plan
MM11	Programs and progress relating to materials stewardship.	V	6.3 Energy and Resources Usage	60	

Appendix 2 ISO 26000

Core Subject	Issue	Chapter	Page
Organizational Governance	Decision-making processes and structures	3.1 Sustainable Governance	16
Human Rights	Due diligence	8.2 Human Rights and Benefits	92
	Human right risk situations	8.2 Human Rights and Benefits	92
	Avoidance of complicity	8.2 Human Rights and Benefits	92
	Resolving grievances	8.2 Human Rights and Benefits	92
	Discrimination and vulnerable groups	8.2 Human Rights and Benefits	92
	Civil and political rights	8.2 Human Rights and Benefits	92
	Economic, social and cultural rights	8.2 Human Rights and Benefits	92
	Fundamental principles and rights at work	8.2 Human Rights and Benefits	92
Labor Practices	Employment and employment relationships	8.2 Human Rights and Benefits	92
	Conditions of work and social protection	8.2 Human Rights and Benefits	92
	Social dialogue	8.2 Human Rights and Benefits	92
	Health and safety at work	8.3 Occupational Safety and Health	96
	Human development and training in the workplace	8.4 Competency Development and Career Planning	104
Environment	Prevention of pollution	6.5 Green Process	63
	Sustainable resource use	6.5 Green Process	63
		6.6 Byproduct Utilization	72
	Climate change mitigation and adaptation	6.4 Climate Change and CDP	61
	Protection of the environment, biodiversity and restoration of natural habitats	9.3 LOHAS Homeland	116
Fair Operating Practices	Anti-corruption	3.1 Sustainable Governance	16
	Responsible political involvement	9.2 Corporate Citizen	111
	Fair competition	7.1 Fair Trade	75
	Promoting social responsibility in the value chain	7.6 Supply Chain Management	82
	Respect for property rights	8.4 Competency Development and Career Planning	104
Consumer Issues	Fair marketing, factual and unbiased information and fair contractual practices	3.1 Sustainable Governance	16
		7.1 Fair Trade	75
	Protecting consumers' health and safety	5.3 Green Products	52
	Sustainable consumption	5.3 Green Products	52
	Consumer service, support, and complaint and dispute resolution	5.4 Optimization of Customer Service	55
	Consumer data protection and privacy	5.4 Optimization of Customer Service	55
	Access to essential services	5.4 Optimization of Customer Service	55
	R&D efforts	5.4 Optimization of Customer Service	55
Community Involvement and Development	Community involvement	9.2 Corporate Citizen	111
	Education and culture	9.2 Corporate Citizen	111
	Employment creation and skills development	9.2 Corporate Citizen	111
	Technology development and access\	9.1 CSC Group Education Foundation	108
	Wealth and income creation	9.3 LOHAS Homeland	116
	Health	9.3 LOHAS Homeland	116
	Social investment	9.2 Corporate Citizen	111

Appendix 3 UN Global Compact

Category	Ten Principles		Chapter	Page
Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights.	3.1	Sustainable Governance	16
		8.2	Human Rights and Benefits	92
	Make sure that they are not complicit in human rights abuses.	3.1	Sustainable Governance	16
		7.6	Supply Chain Management	82
Labor	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	8.2	Human Rights and Benefits	92
	The elimination of all forms of forced and compulsory labour.	8.2	Human Rights and Benefits	92
	The effective abolition of child labour.	8.1	Recruitment and Retention	88
	The elimination of discrimination in respect of employment and occupation.	8.1	Recruitment and Retention	88
		8.2	Human Rights and Benefits	92
Environment	Businesses should support a precautionary approach to environmental challenges.	6.1	Vision and Principles	57
	Undertake initiatives to promote greater environmental responsibility.	6.1	Vision and Principles	57
	Encourage the development and diffusion of environmentally friendly technologies.	5.3	Green Products	52
Anti-Corruption	Businesses should work against corruption in all its forms, including extortion and bribery.	3.1	Sustainable Governance	21

Appendix 4 UN SDGs

SDG		Target	Chapter	Page
SDG 1	End poverty in all its forms everywhere	-	-	-
SDG 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	-	-	-
SDG 3	Ensure healthy lives and promote well-being for all at all ages	3.6	8.3 Occupational Safety and Health	96
SDG 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.4	8.1 Recruitment and Retention	88
		4.7	8.4 Competency Development and Career Planning	104
			9.1 CSC Group Education Foundation	108
SDG 5	Achieve gender equality and empower all women and girls	5.1	8.1 Recruitment and Retention	88
		5.2	8.2 Human Rights and Benefits	92
SDG 6	Ensure availability and sustainable management of water and sanitation for all	6.3~5	6.5 Green Process	63
SDG 7	Ensure access to affordable, reliable, sustainable and modern energy for all	7.2	6.1 Vision and Principles	57
		7.3	6.5 Green Process	63
		7.a	4.2 Industry Upgrade and Innovation	41
SDG 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.2	4.2 Industry Upgrade and Innovation	41
			5.3 Green Products	52
			7.2 Upgrading of Steel-using Industries	75
		8.5~8	8.1 Recruitment and Retention	88
			7.6 Supply Chain Management	82
SDG 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1	5.3 Green Products	52
		9.4	7.4 Green Partners	78
		9.5	4.2 Industry Upgrade and Innovation	41
SDG 10	Reduce inequality within and among countries	-	-	-
SDG 11	Make cities and human settlements inclusive, safe, resilient and sustainable	11.2~3	5.3 Green Products	52
			9.3 LOHAS Homeland	116
SDG 12	Ensure sustainable consumption and production patterns	12.2	6.3 Energy and Resources Usage	60
		12.4~5	6.5 Green Process	63
			6.6 Byproduct Utilization	72
		12.6	2. About this Report	14
		12.8	9.1 CSC Group Education Foundation	108
SDG 13	Take urgent action to combat climate change and its impacts	13.1	6.4 Climate Change and CDP	61
		13.3	9.1 CSC Group Education Foundation	108
SDG 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	-	-	-
SDG 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.a	9.3 LOHAS Homeland	116
SDG 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.5	3.1 Sustainable Governance	21
SDG 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	17.6	4.2 Industry Upgrade and Innovation	41
			7.2 Upgrading Steel-using Industries	75
			7.5 External Communication and Cooperation	81

INDEPENDENT ASSURANCE OPINION STATEMENT

China Steel Corporation 2016 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 assurance of this report.

This independent assurance opinion statement has been prepared for 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.

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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 2016 Corporate Social Responsibility Report.
2. The evaluation of the nature and extent of the CSC's adherence to all three AA1000 AccountAbility Principles in this report as conducted in accordance with type 1 of AA1000AS (2008) assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

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

Opinion Statement

We conclude that the CSC 2016 Corporate Social Responsibility Report provides a fair view of the CSC CSR programmes and performances during 2016. The CSR report subject to assurance is free from material misstatement 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 2016 economic, social and environmental performance indicators are fairly represented. The CSR performance indicators 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 AA1000 Assurance Standard (2008). 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 AA1000 Assurance Standard and their self-declaration of 'in accordance' with the GRI G4 guidelines: the Core option were fairly stated.

Methodology

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

- 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.
- 14 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.
- review of the findings of internal audits.
- review of supporting evidence 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 and Responsiveness as described in the AA1000 AccountAbility Principles Standard (2008).

Conclusions

A detailed review against the AA1000 AccountAbility Principles of Inclusivity, Materiality and Responsiveness and the GRI G4 guidelines is set out below:

Inclusivity

This report has reflected a fact that CSC has continually made a commitment to its stakeholders, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. The reporting systems are being developed to deliver the required information. 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 publishes sustainability information that enables its stakeholders to make informed judgements 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 provides the opportunity to further enhance CSC's responsiveness to stakeholder concerns. Issues that stakeholder concern about have been responded timely. In our professional opinion the report covers the CSC's responsiveness issues. However, the future report should be further enhanced by the following areas:

- Encouraging to work towards a type 2 of AA1000AS (2008) engagement with a view to providing the reliability of sustainablity performance information that stakeholder concerns.

GRI-reporting

CSC provided us with their self-declaration of 'in accordance' with the G4 sustainability reporting guidelines: the Core option (at least one Indicator related to each identified material Aspect). Based on our review, we confirm that social responsibility and sustainable development indicators with reference to the GRI Index are reported, partially reported or omitted. In our professional opinion the self-declaration covers the CSC's social responsibility and sustainability issues.

Assurance level

The moderate level assurance provided is in accordance with AA1000 Assurance Standard (2008) in our review, as defined by the scope and methodology described in this statement.

Responsibility

This 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 and Carbon Footprint Verifiers experienced in industrial sector, and trained in a range of sustainability, environmental and social standards including AA1000 AS, ISO14001, OHSAS18001, ISO14064 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
2017-05-10

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AA1000
Licensed Assurance Provider
000-4

Taiwan Headquarters: 5th Floor, No. 39, Ji-Hu Rd., Nei-Hu Dist., Taipei 114, Taiwan, R.O.C.

BSI Taiwan is a subsidiary of British Standards Institution.

Head Office
1, Chung Kang Rd., Hsiao Kang, Kaohsiung 81233, Taiwan, Republic of China
Tel: 886-7-802-1111
Fax: 886-7-537-3570
Web-site: http: //www.csc.com.tw

China Steel Building
88, Chenggong 2nd Rd., Qianzhen, Kaohsiung 80661, Taiwan, Republic of China
Tel: 886-7-337-1111
Fax: 886-7-537-3570

Taipei Liaison Office
Room A, 28F, Taipei 101 Tower, 7, Sec. 5, Xinyi Rd., Xinyi, Taipei 11049, Taiwan, Republic of China
Tel: 886-2-8758-0000
Fax: 886-2-8758-0007

Osaka Office
1F, Osaka U2 Bldg., 4-7 Uchihonmachi 2-Chome,
Chuoku,Osaka 540-0026, Japan
Tel: 81-6-6910-0888
Fax: 81-6-6910-0887

India Office
S-3 Level, Block-E, International Trade Tower,
Nehru Place, New Delhi-110019, India
Tel: 91-11-4057-3739
Fax: 91-11-4057-3741

For more information, please visit the CSC CSR website at
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Contact us if you have any comments or questions regarding this report.
Office of Energy and Environmental Affairs, CSC
Tel: 886-7-802-1111 Ext. 6915
E-mail: 182634@mail.csc.com.tw

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