



2022

SUSTAINABILITY REPORT



2022

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0 · Overview

0.1 About This Report	1
0.2 About CSC	2
0.3 Sustainability Performance	5

1. Sustainable Operation

1.1 Message from Top Management	13
1.2 Operation Philosophy	15
1.3 Sustainability Directives	16
1.4 Stakeholder Engagement	25
1.5 Material Topics	29

2. Corporate Governance

2.1 Strategies and Targets	37
2.2 Organization Chart	40
2.3 Board of Directors	41
2.4 Corporate Governance and Sustainability Committee	45
2.5 Ethical Conduct	46
2.6 Risk Management	50

3. Value Creation

3.1 Operational Finance	57
3.2 Product and Sales	59
3.3 Product Quality and Innovation	61

Feature

Steady and Sustainable Operation, CSC Improves Intellectual Property Management	63
--	----

3.4 Green Development	70
-----------------------	----

4. Industry Chain Improvement

4.1 Supply Chain Management	77
4.2 Industry Upgrade	84
4.3 Domestic and International Associations	86
4.4 Circular Economy	87

5. Environmental Protection

5.1 Environmental Concepts and Management	99
5.2 Green Process	102
5.3 Respond to Climate Change	117

Feature

Dedicated to Energy Saving and Carbon Reduction - Hot Metal Recovery in Torpedo Car Slag Removal Station	127
---	-----

6. Employees Care

6.1 Recruitment and Retention	131
6.2 Joyful Workplace	135
6.3 Employee Rights	139
6.4 Competency Development	143
6.5 Occupational Safety and Health	144

7. Social Participation

Feature

Promote Female Science and Technology Talent Cultivation Program	155
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7.1 Concepts and Management	156
7.2 Local First	158
7.3 The CSC Group Education Foundation	159

Appendix

Appendix 1 GRI Standards Content Index	162
Appendix 2 Sustainability Accounting Standards Board (SASB)	167
Appendix 3 TCFD Content Index	170
Appendix 4 Climate-Related Information of CSC	171
Appendix 5 Assurance Statement	172

0.1 About This Report

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

Standards

- The 2022 CSC Sustainability Report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards 2021 and "Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports" by TWSE Listed Companies. It also refers to the OECD Guidelines for Multinational Enterprises, the UN Global Compact (UNGC), the UN Sustainable Development Goals (SDGs), ISO 26000 Guidance on Social Responsibility, Sustainability Accounting Standards Board (SASB), and non-financial disclosure of the steel industry.

Reporting Period

- This report is issued once annually and the current issue of this report covers CSC's operational systems and practices from January 1, 2022 to December 31, 2022, with a special focus on CSC's management approach and performances on material topics. The reporting period of this report is consistent with the financial report.
- ▶ Current issue: Published in June 2023 ▶ Previous issue: Published in June 2022

Reporting Scope

- The reporting boundary covers CSC entities, including the Head Office, Stone Quarry Processing Yard, Osaka office, Taipei Liaison Office, and China Steel Building. It does not include subsidiaries compared to CSC's consolidated financial statements ([consolidated financial statements, pages 17-20](#)). The environmental data presented in this report is primarily based on the Head Office, while for other entities, please refer to the relevant chapter annotations.



Sustainability Reporting Group

- Includes Human Resources Dept., General Affairs Dept., Public Affairs Dept., Purchasing Dept., Marketing Dept., Transportation Dept., Marketing Administration Dept., Finance Dept., Accounting Dept., Secretariat Dept., Industrial Engineering Dept., Corporate Strategy Dept., Legal Dept., Iron & Steel Research & Development Dept., Metallurgical Dept., Intellectual Property & Testing Technology Dept., Green Energy & System Integration Research & Development Dept., Engineering Management Dept., Raw Material Handling & Inplant Transportation Dept., Steelmaking Dept., Utilities Dept., Plant Engineering & Maintenance Dept., Electrical & Control Dept., Production Planning Dept., Industrial Safety & Hygiene Dept., Environmental Protection Dept., Internal Audit Office, CSC Group Education Foundation and etc.

For any comments or questions regarding this report, please contact us at

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Report on Management Methods and Quality

- Data and information presented in this report were supplied by CSC departments with the approval of respective Directors. The initial draft, compiled by the Environmental Protection Dept., was reviewed by the sustainability reporting group. It was confirmed through a rigorous administrative procedure before being finalized and was approved by the Chairman for publication. This report was assured by BSI, in adherence to AA1000 Assurance Standard v.3 as conducted in accordance with Type 1 moderate level of assurance while part of the data complies with Type 2 high level of assurance (Please see the appendix 1 GRI Standards Index) as well as the GRI Standards. It has been discussed and exchanged with General Manager of Environmental Protection Department and certain members of the Sustainability Reporting Group to explain the direction of the Company's sustainable development and the presentation of the achievements. Financial information was extracted from financial reports audited by CPA, and the chapters on "Green Process" and "Occupational Safety and Health" were based on related international management systems ISO 50001 Energy Management System, ISO 14001 Environmental Management System, and CNS 45001/ISO 45001 Occupational Health and Safety Management System, etc.) and externally reviewed.

0.2 About CSC

Locations

- + **1975** ▶ **Head Office**
Linhai Industrial Park, Hsiaokang District, Kaohsiung City, Taiwan (R.O.C) Production Plant

- + **1981** ▶ **Quarry Processing Yard**
Port of Hualien, Taiwan
Transport of flux to CSC

- + **1983** ▶ **Osaka Office**
Osaka, Japan

- + **1995** ▶ **Taipei Liaison Office**
Taipei, Taiwan (R.O.C)
1995 (Taipei Branch)
2005 (Changed to Taipei Liaison Office)

- + **2013** ▶ **China Steel Building**
Kaohsiung, Taiwan (R.O.C)
Administration, commerce, finance

0.2.1 Chronicle

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

0.2.2 Business and Scale

CSC is a world-class steel corporation with an annual production capacity (in terms of crude steel) around 10 million tonnes. According to the report published by World Steel Association (worldsteel), the crude steel production of CSC was ranked 26th among all worldsteel members in 2021. Moreover, CSC's competitiveness was ranked 15th from 16th in 2021, based on 23 criteria such as pricing and cost-saving abilities, among 35 steel corporations by World Steel Dynamics (WSD) in December 2022.

The major products of CSC are steel plates, steel bars, wire rods, hot-rolled and cold-rolled coils, electrogalvanized coils, electrical steel coils, and hot-dip galvanized steel coils, and so on. In 2022, 58.9% of products were sold domestically and 41.1% were sold overseas. The main products accounted for more than 50% of the domestic market and CSC is currently the largest steel company in Taiwan. The main export targets are Southeast Asia, Europe, and Japan.

In order to enhance its operational synergy, CSC has diversified its businesses into five business areas: Steel, Engineering, Industrial Materials, Logistics & Investments, and Green Energy. The core of the value chain is CSC itself, including employees and partners. Upstream includes raw material suppliers such as ore suppliers, and downstream includes customers and local communities.

Chronology of Major Events

1970s

- 1971 12 / 03 China Steel Corporation is officially registered, with head office located in Taipei.
- 1972 09 / 16 Kaohsiung Plant Site Office is established.
- 1974 09 / 01 Phase I construction commences.
- 12 / 26 CSC stock is listed on Taiwan Stock Exchange Corporation.
- 1975 09 / 15 Head office relocates to Kaohsiung. Plant Site Office closes.
- 1977 07 / 01 CSC becomes a state enterprise.
- 12 / 16 Phase I is completed, with a capacity of 1.5 Mt (in terms of crude steel) per year.
- 1978 07 / 01 Phase II construction commences.

1980s

- 1982 06 / 30 Phase II is completed. Capacity reaches 3.25 Mt per year.
- 1984 07 / 01 Phase III construction commences.
- 1988 04 / 30 Phase III is completed. Capacity reaches 5.652 Mt per year.

1990s

- 1993 07 / 15 Phase IV construction commences.
- 1995 04 / 12 CSC is privatized.
- 1997 05 / 31 Phase IV is completed. Capacity reaches 8.054 Mt per year.
- 1998 06 / 02 CSC Group's corporate identity system is formally introduced to the public.

2000s

- 2006 04 / 15 Annual production capacity is officially raised to 9.86 Mt owing to success in equipment renovations and improvements carried out over the years.
- 11 / 22 Groundbreaking for the China Steel Building takes place.
- 2008 10 / 06 Dragon Steel Corporation (DSC) becomes a wholly owned subsidiary of CSC.

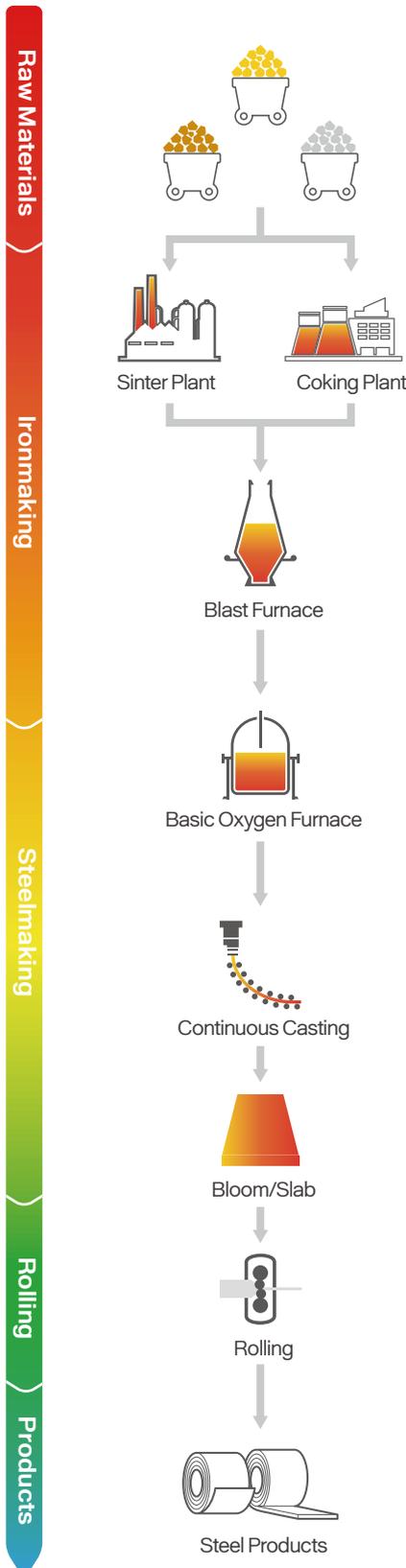
2010s

- 2010 06 / 30 DSC's stage II phase 1 expansion project is completed. CSC Group's capacity reaches 13.36 Mt per year.
- 2013 03 / 05 DSC's stage II phase 2 expansion project is completed. CSC Group's capacity reaches 15.86 Mt per year.
- 10 / 22 China Steel Building is inaugurated.
- 2017 12 / 20 The Board of Directors approves the initiation of the revamp of the coke ovens (phases I and II).
- 2018 12 / 31 CSC Group's operating revenue in 2018 sets the record of exceeding 400 billion TWD for the first time.

2020s

- 2020 01 / 16 CSC positions itself as a steel mill that produces premium products with high value and devotes itself to the development of the green energy industry as the operational and developmental cores in enhancing its competitiveness for the next 50 years.
- 02 / 21 CSC sets a new milestone in its pricing system by offering monthly and quarterly pricing simultaneously for the first time.
- 07 / 01 To promote the utilization of BOF Slag, CSC and TIPC jointly submit the Environmental Impact Difference Analysis Report for utilizing BOF Slag as an alternative land reclamation material in Taipei Port, approved by the Environmental Impact Assessment and Review Committee of Taiwan EPA.
- 11 / 11 The first truck of BOF aggregate is successfully utilized as land reclamation material in Taipei Port, which marks a new milestone in BOF aggregate application.
- 2021 02 / 26 CSC commits to taking action on environmental protection and climate change by setting up a Task Force on Energy Saving & Carbon Reduction and Carbon Neutrality .
- 2023 01 / 01 CSC declares the company's new vision of "We aspire to be a sustainable growth enterprise that distinguishes itself through a firm commitment to smart innovation, green energy, carbon reduction, and value co-creation." Based on the new vision, CSC launches its first 10-year operation and development strategy toward its promising prospects.

Production Work Flow



Sintering

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



Coking

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



Blast Furnace

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



Basic Oxygen Furnace

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



Continuous Casting

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



Rolling

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

0.3 Sustainability Performance

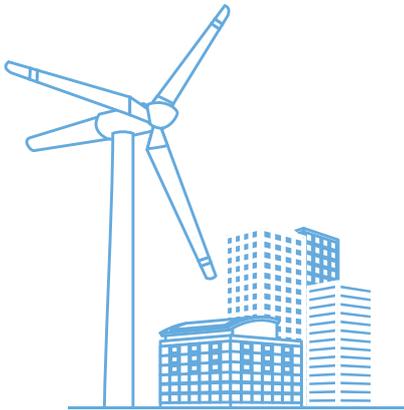


0.3.1 Sustainability Performance Overview

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

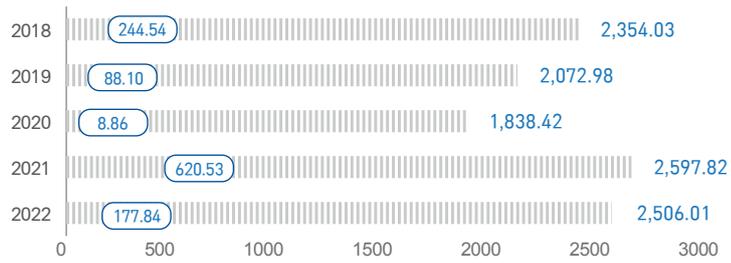
t: tonne ; tCS: tonne Crude Steel



Revenue & Net Profit

Unit : 100 million TWD

Revenue Net Profit



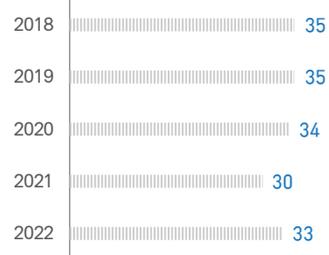
EPS

Unit : TWD



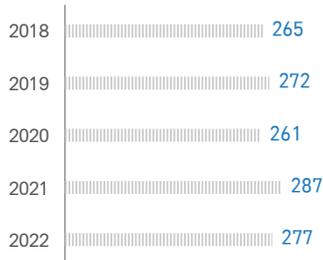
Liabilities to Assets Ratio

Unit : %



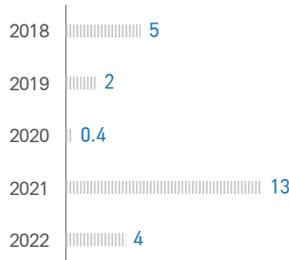
Long-term Capital to Fixed Assets Ratio

Unit : %



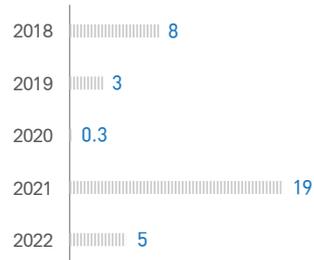
Return of Assets

Unit : %



Return on Equity

Unit : %





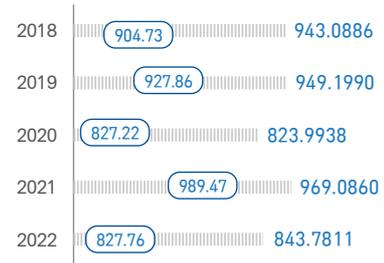
Income Tax
Unit : 100 million TWD



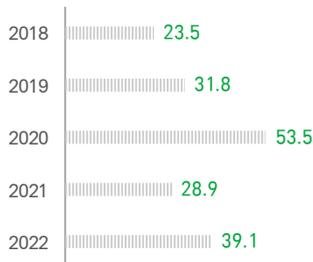
R&D Expense & R&D Expense Ratio
Unit : 100 million TWD ; %



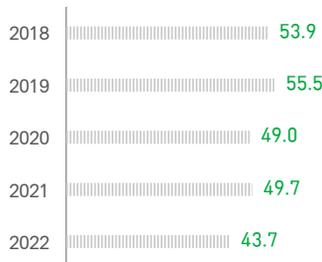
Production & Productivity*
Unit : 10,000 tCS ; tCS/person-year



Investment on Energy and Environment
Unit : 100 million TWD



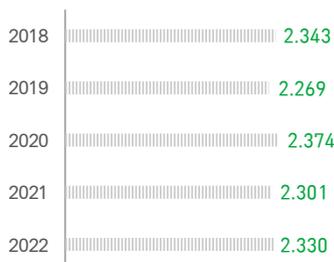
Self-generated Electricity
Unit : %



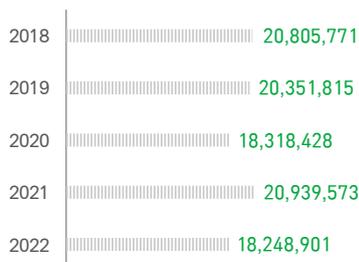
Energy Intensity
Unit : Mcal/tCS ; GJ/tCS



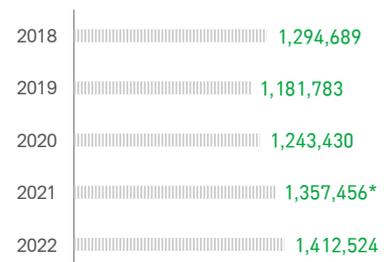
GHG Intensity*
Unit : tCO₂e/tCS



GHG Emissions - Scope 1
Unit : tCO₂e

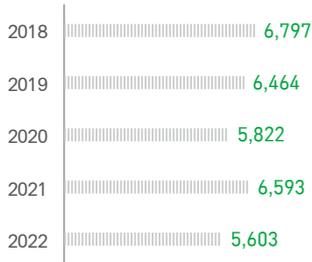


GHG Emissions - Scope 2
Unit : tCO₂e

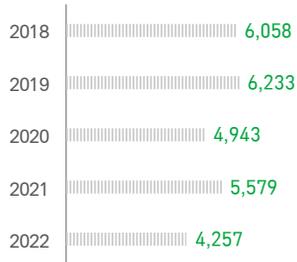




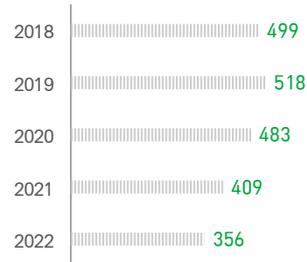
NOx Emissions
Unit : Tonnes



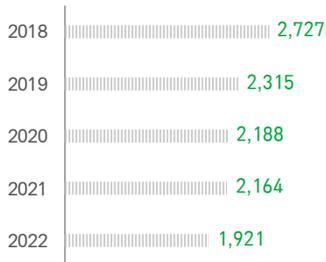
SOx Emissions
Unit : Tonnes



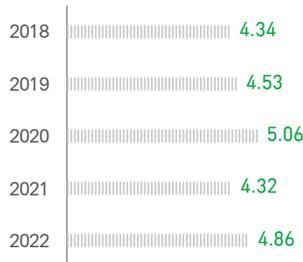
VOCs Emissions
Unit : Tonnes



Particulate Emissions
Unit : Tonnes

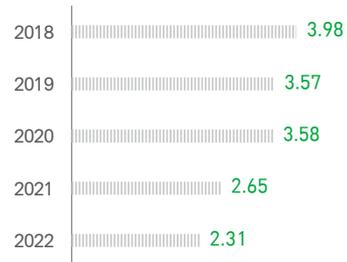


Water Intensity
Unit : t/tCS

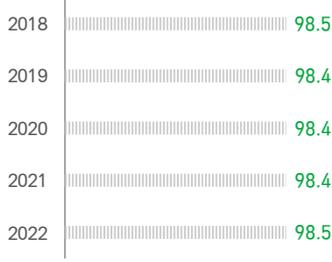


New Water Intensity
Unit : t/tCS

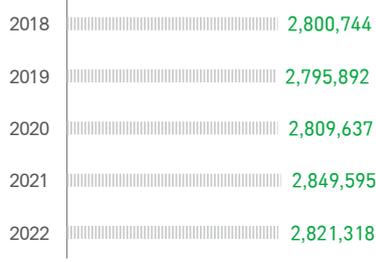
Note: The data of new water intensity is collected after reclaimed water introduced in 2018.



Processing Water Recycling Rate
Unit : %



Production Process Water Recirculation
Unit : Million liters



0.3.2 Awards and Recognitions



CSC President Shyi-Chin Wang (right) received awards such as TCSA and GCSA from President Jong-Tsun Huang (left) of the Examination Yuan.



CSC Vice President Jih-Jau Jeng received TIPS Grade A certification from Director General Ching-Chang Lien (left) of IDB, MOEA.

Sustainability Performance Overview

Economy

- Dow Jones Sustainability Indices (DJSI) Industry member in DJSI-Emerging Markets 2022.
- Management level (B) for CDP Climate Change.
- Management level (B) for CDP Water.
- Awarded 1 Gold and 1 Silver in the “Environmental Sustainability” category, Gold in the “Economic Development” category, and Bronze in the “Social Inclusion” category of the 2022 Taiwan Sustainability Action Awards (TSAA).
- Received a total of nine awards in the 2022 Taiwan Corporate Sustainability Awards (TCSA), including the “Top Ten Sustainable Companies Award (Manufacturing),” as well as individual sustainability performance awards, including the “Sustainability Report Platinum Award”, the “Climate Leadership Award,” the “Sustainable Water Management Award,” the “Circular Economy Leadership Award,” the “People Development Award,” the “Information Security Award,” “Growth through Innovation Leadership Award,” and the “Sustainable Supply Chain Leadership Award.”
- “Sustainability Report Bronze Award” in the Global Corporate Sustainability Awards (GCSA).
- Selected as one of the top 50 large companies in the “2022 Corporate Citizen Awards” by Common Wealth Magazine.
- Honored with the “Outstanding Corporate Group in Sustainability Resilience Award” by the British Standards Institution (BSI)

- The galvanized steel products SGCC RC20 (scrap ratio of 20% or above) and SECD RC12 (scrap ratio of 12% or above) passed the UL 2809 certification at the end of 2022.
- Selected as a constituent stock of the Corporate Governance 100 Index
- Selected as a constituent stock of the High Compensation 100 Index
- Constituent of “FTSE4Good Emerging Index” .
- Constituent of the “FTSE4Good TIP Taiwan ESG Index” jointly introduced by Taiwan Index Plus Corporation and FTSE Russell
- Top 20% listed companies in “Corporate Governance Evaluation” by TWSE, and top 5% for the sixth time in 2022.
- “Authorized Economic Operator (AEO)” by Customs Administration, Ministry of Finance.
- “Golden Vessel Award - Bulk and Sundry Cargo Terminal Operation” of the Taiwan International Ports Corporation (TIPC)
- “2021 Certification of Excellent Exporters / Importers” of the Bureau of Foreign Trade, Ministry of Economic Affairs (MOEA)
- Top10 of “TIPO’ s 2022 Statistical Rankings for Domestic Patent Applications and Grants” , 9 years in a row being in top 10, and as the top in traditional industries.
- Certified the Taiwan Intellectual Property Management System (TIPS).



“2021 Outstanding Private Enterprise Green Procurement Unit” from Environmental Protection Administration, Executive Yuan



“2021 Outstanding Private Enterprise Green Procurement Unit” from KSEPB.

Environment

- Honored as one of the best performers in all industrial voluntary GHG reductions in 2022 by Industrial development bureau (IDB), Ministry of Economic Affairs (MOEA).
- The CSC GHG Offset Project for the “Change of Transportation Mode at Hualien Quarry” passed the review of the Environmental Protection Administration (EPA) based on the fact that the second phase achieved a reduction of 3,113 tonnes CO₂e in GHG emissions.
- The CSC GHG Offset Project for the “Energy Saving by Hot-charge Rolling” passed the review of the Environmental Protection Administration (EPA) based on the fact that the first phase achieved a reduction of 14,089 tonnes CO₂e in GHG emissions.
- “2021 Outstanding Private Enterprise Green Procurement Unit” from KSEPB.
- “2021 Outstanding Private Enterprise Green Procurement Unit” from Environmental Protection Administration, Executive Yuan.
- “2022 Water Environment Patrol Team Evaluation - Corporate Contribution Award” from KSEPB.
- CSC's Rolling Mill Department III won the “2022 First Class Water-Saving Unit Award” in the 2022 Water-Saving Performance Competition organized by the Water Resources Agency, Ministry of Economic Affairs.
- CSC was awarded “Excellent Construction Owner” of the “2022 Excellent Construction Site” by the Environmental Protection Bureau of Kaohsiung City Government for CSC Civil Engineering Dept.'s “Foundation Piling and Foundation Works in the Southern Section of the Enclosed Coal Storage Construction” with United Steel Engineering & Construction Corporation also awarded “Excellent Contractor.”

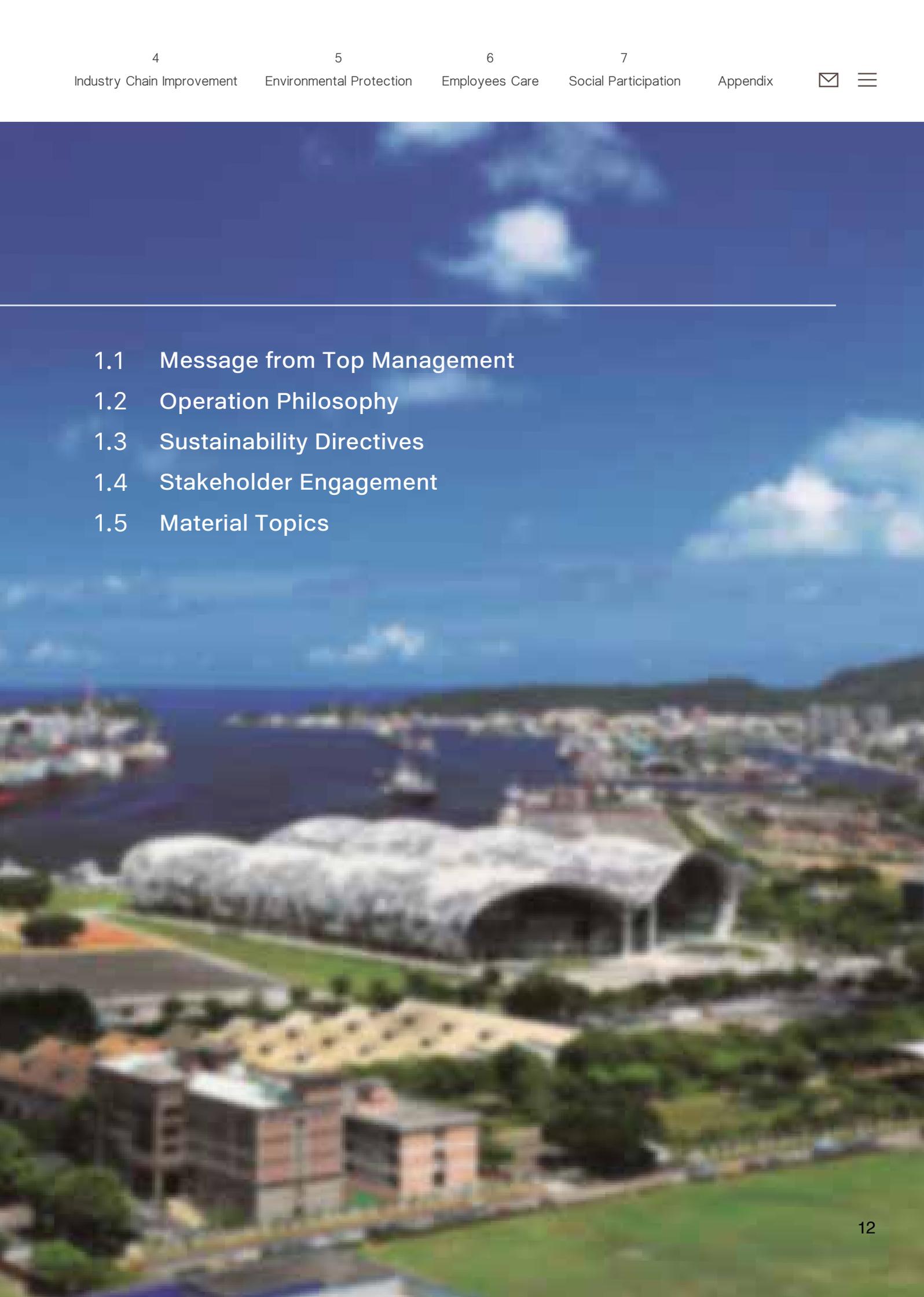
Society

- Ranked 4th in “the most desirable company for office workers to enter - traditional industry” by the job searching website yes123.
- 5th place in the “2022 Learning Superstar Award - Common Wealth Leader Campus.”
- “Gold Award - Manufacturing Industry” in the “2022 Happy Enterprise Poll” of 1111 Job Bank.

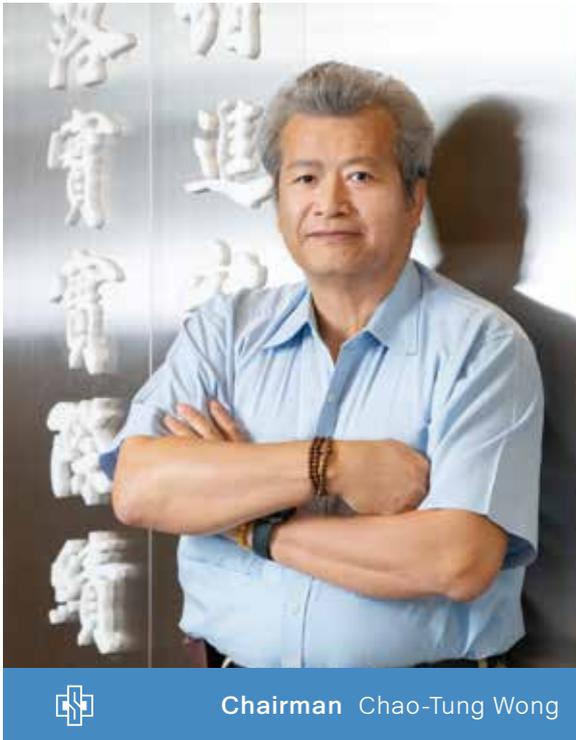
Sustainable Operation

CHAPTER



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- 1.1 Message from Top Management
 - 1.2 Operation Philosophy
 - 1.3 Sustainability Directives
 - 1.4 Stakeholder Engagement
 - 1.5 Material Topics

1.1 Message from Top Management



The global industrial and economic environment has alternated between gray rhino and black swan events since 2019. The U.S.-China trade war, COVID-19 pandemic, restructuring of industry chains, impact of low carbon, Russo-Ukrainian War, U.S. and global inflation, lockdowns in China, and energy crisis have caused a rise in operational risks and uncertainty for companies. Climate change is a massive gray rhino that will have a long-lasting and extensive negative impact on global industries, economies, and environment, and every global citizen, organization, and government must work together to respond to the challenges brought by climate change.

The Company periodically oversees progress and evaluates effectiveness to actively respond to climate change and carbon reduction issues. We actively implement controls for energy conservation, carbon reduction, and greenhouse gas (GHG) emissions to mitigate the impact of our operations on the climate and environment, taking action to fulfill our commitment to carbon reduction. Short-term carbon reduction mainly focuses on improving energy efficiency and increasing the use of renewable energy. Mid-term and long-term is divided into two stages: "first low carbon, then zero carbon," and we will dedicate efforts to the development and improvement of low carbon smelting technology. In the long-term, we will develop carbon capture and storage and hydrogen energy smelting processes.

In recent years, the Company has focused on the development of premium steel products with low carbon emissions and high scrap ratio, the galvanized steel product SGCC RC20 obtained UL2809 Environmental Claim Validation Procedure (ECVP) for Recycled Content in 2022, setting the best example for implementing circular economy. With regard to R&D for air pollution control, CSC engages in industry-academia collaboration with local universities and implemented the "AIR HoPE Industry-academia R&D Center" project, developing PM2.5 control technology, taking action to implement environmental protection and air pollution reduction work. For precious water resources, CSC has formulated a variety of water resource policies over the years and implements the 4R water conservation strategy: reduce, reuse, recycle, and replace. The strategy not only lowers the risk of water shortage, but also retains precious water resources for household use, creating a harmonious and mutually beneficial industrial development environment.

To lead further development on the foundation of CSC's core values and abilities, the Company's management team revised the vision for the next decade in 2022, and focused on three elements, namely smart innovation, green energy and carbon reduction, and value co-creation with stakeholders (customers, shareholders, employees, general public, and environment). The dual strategies of becoming a steel mill that provides high value premium products and services and developing the green energy industry in 2021 were incorporated to lay out the vision of "We aspire to be a sustainable growth enterprise that distinguishes itself through a firm commitment to smart innovation, green energy, carbon reduction, and value co-creation." CSC's new vision aims to become an excellent enterprise from a broader perspective based on the concepts of sustainability and ESG. Under the guidance of the new vision, CSC formulated the first 10-year (2023-2032) operation and development strategies, and examined major challenges that the Company will face by preparing a future events table. We formulated four strategic goals (financial indicators, high-end/premium steel products, green energy and environmental protection, and smart manufacturing) for the next decade starting from now, as well as 10 strategies and various action plans. In the future, CSC's goal will not be to produce more steel, but rather to create greater value through steel.

Employees are an important foundation for company growth. With more and more youth joining CSC, the Company has dedicated its efforts to creating a work environment with harmony between labor and management, and sorted through the corporate culture at the end of 2021 for the Company facing generational shift to retain its high quality corporate culture, and also incorporate cultural elements aligned with current trends. We have found the excellent DNA of CSC members and established common values, so that three generations of employees will be able to jointly make progress based on the corporate culture, and move forward side by side with a positive attitude when facing challenges and changes.

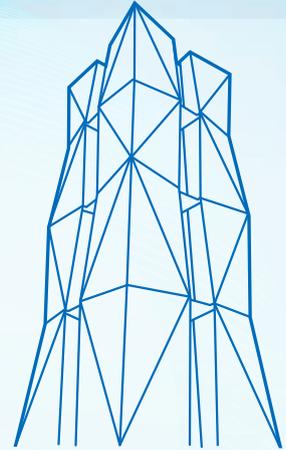
With the vision, strategies, personnel, and corporate culture all ready, we will exert every effort to continue improving the development, production, and marketing of premium steel products and create a premium on our steel products. We will implement AI in smart manufacturing, carry out digital transformation, develop low carbon energy applications and carbon capture technologies, and also invest in green energy and energy storage businesses. These efforts will transform the challenge of low carbon transformation into momentum for sustainable growth. With AI innovation as the foundation, we will continue to enhance the resilience of CSC, lead the domestic steel industry chain in enhancing its international competitiveness, and jointly create value and share results with all stakeholders.

1.2 Operation Philosophy



Vision

We aspire to be a sustainable growth enterprise that distinguishes itself through a firm commitment to smart innovation, green energy, carbon reduction, and value co-creation.



Values

Teamwork

Entrepreneurial approach

Down-to-earthiness

Pursuit of innovation

Operation Philosophy

- Promotion of social well-being
- Result orientation
- Implementation of teamwork
- Emphasis on employees' self-realization

We firmly believe in reciprocity, and will fulfill the role of a responsible corporate citizen. We aim at establishing the value of our existence as an asset to the society and the nation.

Efficiency is stressed to upgrade operation results and attain CSC's corporate objectives.

Cooperation, coordination, and teamwork are emphasized internally to reach CSC's corporate objectives. Externally, CSC cooperates with the downstream customers to promote mutual benefits and to help develop the domestic steel industry.

CSC regards its employees as a valuable asset to the company, and assists them to develop intellectually to fulfill their potential. Creativity and aggressiveness are encouraged. CSC employees are loyal to the company because their professional dignity and deserved rights are valued. °

CSC's new vision is "We aspire to be a sustainable growth enterprise that distinguishes itself through a firm commitment to smart innovation, green energy, carbon reduction, and value co-creation." With the four values "teamwork, entrepreneurial approach, down-to-earthiness and pursuit of innovation" as the foundation of its corporate culture, CSC actively implements its operation concept of "promotion of social well-being, result orientation, implementation of teamwork, and emphasis on employees' self-realization."

1.3 Sustainability Directives



CSC's performance in environment, social, and governance aligns with the 9 principles outlined in the new Sustainability Charter of the World Steel Association, which includes "climate action," "circular economy," "environmental care," "safety and health," "our people," "local communities," "responsible value chain," "ethics & transparent operations," and "innovation and prosperity." This demonstrates our unwavering commitment to sustainable development. CSC joined as a signing member in 2022 and is recognized as a leading enterprise in sustainable development within the steel industry worldwide.

CSC revised the "CSC Corporate Social Responsibility Policy" into the "CSC Sustainable Development Policy" in response to the amendment to the Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies, as well as international development trends. The "CSC Corporate Social Responsibility Best Practice Principles" was also amended into the "CSC Sustainable Development Best Practice Principles," increasing contribution to Taiwan's economy, improving quality of life among employees, communities, and society, and enhancing competitive advantage based on sustainable development as a corporate citizen, in order to achieve sustainable development.

+ For more details [CSC's Sustainable Development Practice Principles] <https://www.csc.com.tw/csc/cg/pdf/11105CSR.pdf>

+ For more details [SDGs detail] https://www.csc.com.tw/csc_e/hr/csr/sus/sus2.htm



Sustainable Development Policy

- + Strengthen competitiveness and create profit for shareholders to ensure corporate sustainability.
- + Meet customer needs and enhance service advantage to achieve co-prosperity.
- + Persist in saving energy, reducing carbon emissions, and adopting renewable resources to build a low-carbon society.
- + Take care of employee welfare and create quality environment to facilitate workforce development.
- + Enhance industrial safety practice to eliminate occupational hazards and enforce environmental protection to improve pollution-reduction performances.

Cooperated Stakeholders		Cooperated Stakeholders	
Shareholders	Customers and traders	Employees and contractors	

- + Optimize the supply chain system and improve communication to share sustainable practices.
- + Join professional organizations and provide a solid technology foundation for industry upgrade.
- + Support government policies and engage in construction to improve overall effectiveness.
- + Be devoted to social harmony and promote public welfare to benefit local communities.

Cooperated Stakeholders			Cooperated Stakeholders	
Suppliers	Steel industry peers	Academic researchers	Central and local governments	Society

Core SDGs



Taiwan SDGs Targets	UN SDGs Targets
<p>8.1 Take innovation, employment and distribution as core values to maintain moderate economic growth.</p>	-
<p>8.5 Improve labor productivity.</p>	<p>8.5 By 2030, achieve full and productive employment</p>
<p>8.6 Implement learning and training measures to strengthen the employability of the younger generation.</p>	<p>8.6 Substantially reduce the proportion of youth not in employment, education or training</p>



Taiwan SDGs Targets	UN SDGs Targets
<p>11.6 Reduce the harmful effects caused by the urban environment. Including management of air quality, water, and other municipal waste.</p>	<p>11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p>
<p>11.12 Improve the energy saving and carbon reduction benefits of buildings.</p>	<p>7.3 By 2030, double the global rate of improvement in energy efficiency</p>
	<p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p>



Taiwan SDGs Targets	UN SDGs Targets
<p>12.5 Promote the cross-industry cooperation chain, integrate energy resources for effective recycling, and promote the development of Taiwan's circular economy.</p>	<p>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</p>
<p>12.6 Encourage enterprises to adopt sustainable development measures and at the same time, disclose information on sustainable development and ensure the accuracy and quality of such information.</p>	<p>12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle</p>
<p>12.7 Promote public and private sector to increase green procurement.</p>	<p>12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities</p>

Performances and Highlights

- The delivery of premium steel recorded 4.2915 million tonnes in 2022.
- In 2022, the starting salary of entry-level employees was 30,000 TWD, and 40,000 TWD for professional-level employees. The annual salary increase rate was 4.5%.
- There were 527 new employees in 2022, mainly in the 20 to 30-year-old age group (Average age 29.6) coming from the southern region of Taiwan, which increased local youth employment opportunities.
- CSC holds cooperative education programs with National Cheng Kung University and has recruited 15 students as employees by 2022.
- CSC cooperates with top universities in Taiwan to provide Steel Introduction course and offers scholarships, with 191 students awarded. More than 80 teachers and students participated in "Circular economy-reutilization of basic-oxygen-furnace (BOF) slag" .

Performances and Highlights

- From 2022 to 2026, CSC plans to invest in 4 air pollution improvement projects with a continuous investment of 35.508 billion TWD, which will reduce the annual emission of Particulates by 57.7 tonnes, SOx by 154.0 tonnes, NOx by 56.0 tonnes, and VOCs by 73.0 tonnes.
 - Through continuous improvement on the efficiency of the dust collection equipment, 91.4% of 253,800 tonnes dust generated in 2022, was recycled by CSC, and 8.6% was sold as resources, which could reduce the risk in environmental pollution.
 - Through the completion of the COD removal tank and the transformation of the two nitrification tanks, the detection values of effluent water are far superior to the legal standards.
 - 234 energy-saving projects were completed in 2022, saving a total of 1,317 thousands GJ (about 314,517 million kcal).
 - The 4th Energy Saving Action Plan (2021-2025) has reduced 2,175 thousands GJ, which is equivalent to a reduction of 174,700 tonnes of CO₂e emissions.
 - In response to national energy-saving targets and regulatory requirements, the current average annual power saving rate is 1.89% from 2015 to 2022.
 - Promote group-level energy-saving measures, establish an energy-saving technology exchange platform at the group level, and share energy-saving examples during periodic group energy and environment meetings in order to maximize the benefits of the group's energy-saving efforts.
- *Note: Energy-saving measures include buildings and process equipment, etc.

Performances and Highlights

- With the ongoing promotion of District Energy Integration in Linhai Industrial Park, CSC sold 1.48 million tonnes of steam in 2022, which was able to reduce approximately 355,000 tonnes of CO₂e in greenhouse gas emissions.
- With the ongoing promotion of energy integration, a total of 27 companies has joined the CSC-centered Industrial Ecology Network as of 2022.
- The CSR report has been published since 2007, and the CSR website was established to improve the disclosure of non-financial information. The Reports are verified by an external third party to improve the accuracy and quality of information.
- The greenhouse gas scope 3 emissions have been estimated annually from 2015, and a third-party verification agency is entrusted, depending on the information integrity, to verify the results.
- Compiled the carbon footprint of 23 products in 2022 in order to respond to inquires from stakeholders
- The total amount of green product procurement reported in 2022 was about 231 million TWD, which was much higher than the threshold of recognition by EPA of the Executive Yuan (50 million TWD).

CSC Sustainability Goals

Economic growth, environmental protection, and social positive force constitute CSC’s callings to sustainable development. In order to continuously enhance sustainable operation and management at the company, fulfill its commitment to sustainable development, and meet the expectations of its stakeholders, CSC has formulated its environmental, social, and governance (hereinafter referred to as ESG) goals for 2023 to 2030/2032 aimed at contributing to environmental, social, and governance/economic aspects with concrete actions.

Stakeholders' opinions are collected through various channels each year, and ESG goals of CSC are adjusted in coordination with operation and development strategies in a timely manner.



Aspect

Governance/Economy

Issue

Company Governance

2022 Goals

1. Encourage publicly listed subsidiaries to establish ESG goals. ○
2. Number of suppliers adopting the Supplier Code of Conduct ≥ 2,200. ○

CSC’s Achievements

Goals Achieved.

2023

1. Promote the adoption of ESG goals among subsidiaries in performance evaluations, with publicly listed subsidiaries required to reference SASB and TCFD in setting their ESG goals.
2. Number of suppliers adopting the Supplier Code of Conduct ≥ 2,550.

2025

1. Link the manager’s performance appraisal and remuneration with the ESG annual goals (performance).
2. Promote publicly listed subsidiaries to sign the TCFD initiative.
3. Publicly listed subsidiaries rank in the Top 20% in the Corporate Governance Evaluation.
4. Number of suppliers adopting the Supplier Code of Conduct ≥ 3,000.

2030/2032

1. At least one publicly listed subsidiary of the CSC Group is selected as a constituent of a domestic or overseas ESG or sustainability fund or index by 2030.
2. Number of suppliers adopting the Supplier Code of Conduct ≥ 3,500.

Business Integrity

1. Real-time identification of laws and regulations $\geq 95\%$.
2. Percentage of laws and regulations with unfinished amendments $\leq 3\%$.
3. Zero major violation.
4. Continue with the establishment and promotion of an institutional framework for ethics and legal compliance (including protection of trade secrets) applicable to employees (including managers) and achieve a 100% completion rate in related training for new employees.
5. Conduct 1,200 man-hours of training each year and continue to disseminate business integrity in new employee training.

Smart production lines

Complete the development of 10 smart manufacturing projects.

Goals Achieved.

1. Real-time identification of laws and regulations $\geq 95\%$.
2. Percentage of laws and regulations with unfinished amendments $\leq 3\%$.
3. Zero major violations.
4. Continue with the establishment and promotion of an institutional framework for ethics and legal compliance (including protection of trade secrets) applicable to employees (including managers) and achieve a 100% completion rate in related training for new employees.
5. Organize at least 3 ethical corporate management training sessions or seminars.

Goals Achieved.

Completed the development of 9 smart manufacturing production lines.

1. Real-time identification of laws and regulations $\geq 96\%$.
2. Percentage of laws and regulations with unfinished amendments $\leq 3\%$.
3. Zero major violation.
4. Strengthen the promotion and implementation of the institutional framework for ethics and legal compliance (including protection of trade secrets) applicable to employees (including managers).
5. Organize at least 3 ethical corporate management training sessions or seminars.

Completed the development of 28 smart manufacturing production lines.

1. Real-time identification of laws and regulations $\geq 97\%$.
2. Percentage of laws and regulations with unfinished amendments $\leq 2\%$.
3. Zero major violation.
4. Organize at least 3 ethical corporate management training sessions or seminars.

Completed the development of 64 smart manufacturing production lines.

Aspect

Society

Issue

Talent Development

2022
Goals

Holding at least 3 promotion and training activities for the application of the corporate culture code of conduct. ○

CSC's
Achievements **Goals Achieved.**

2023

Holding at least 3 promotion and training activities for the application of the corporate culture code of conduct.

2025

1. The completion rate of the first year management training for new supervisors is 92%.
2. The core skills training for new mechanical and electrical maintenance personnel is 90%.

2030/2032

1. The completion rate of the first year management training for new supervisors is 95%.
2. The core skills training for new mechanical and electrical maintenance personnel is 92%.

Employee Care

1. Contract-based counselors to provide professional on-site service for employees of CSC and its affiliates. ○
2. Unmarried networking events are held with a total of 204 participants each year. △
3. Hold two Evergreen LOHAS seminars for the elderly every year, with the number of participants reaching 160 a year. △

* Further explanation: One event was canceled due to the COVID-19 so the goal was not reached.

1. Arrange psychological adaptation seminars.
2. Unmarried networking events are held with a total of 204 participants each year.
3. Hold two Evergreen LOHAS seminars for the elderly every year, with the number of participants reaching 160 a year.

1. Contract-based counselors to provide professional on-site service for employees of CSC and its affiliates, and expand the provision to family members.
2. Unmarried networking events are held with a total of 244 participants each year.
3. Hold two Evergreen LOHAS seminars for the elderly every year, with the number of participants reaching 170 a year.

1. Contract-based counselors to provide professional on-site service for employees of CSC and its affiliates, and expand the provision to Contractor.
2. Unmarried networking events are held with a total of 284 participants each year.
3. Hold two Evergreen LOHAS seminars for the elderly every year, with the number of participants reaching 180 a year.

Occupational Safety

1. Zero major occupational accidents. ○
2. Employee Disabling Injury Frequency Rate (FR) control value ≤ 0.18 . ○
3. Contractor Disabling Frequency Injury Rate (FR) control value ≤ 0.30 . ○

 **Goals Achieved.**

1. Zero major occupational accidents.
2. Employee Disabling Injury Frequency Rate (FR) control value ≤ 0.18 .
3. Contractor Disabling Frequency Injury Rate (FR) control value ≤ 0.30 .

1. Zero major occupational accidents.
2. Employee Disabling Injury Frequency Rate (FR) control value ≤ 0.16 .
3. Contractor Disabling Frequency Injury Rate (FR) control value ≤ 0.26 .

1. Zero major occupational accidents.
2. Employee Disabling Injury Frequency Rate (FR) control value ≤ 0.14 .
3. Contractor Disabling Frequency Injury Rate (FR) control value ≤ 0.22 .

Aspect

Environment

Issue

GHG Management

Air Pollution

Water Resource

2022 Goals

Reduce carbon emissions by 4% or cumulative reduction of 884,000 tonnes CO₂e. ○

Note: Based year 2018.

1. Reduce 120.2 tonnes of Particulates. ○
2. Reduce 803.6 tonnes of SO_x. ○
3. Reduce 11.5 tonnes of NO_x. ○

Note: Accumulated pollutants reduction per year (since 2020).

Reduce new water consumption by 46.9% in conjunction with the introduction of reclaimed water from Linhai Reclaimed Water Plant. ○

Note: Based on a water consumption of 130,000 cubic meters per day in 2017 when reclaimed water was yet to be introduced.

CSC's Achievements



Goals Achieved.



Goals Achieved.



Goals Achieved.

2023

Reduce carbon emissions by 5% or cumulative reduction of 1.105 million tonnes CO₂e.

Note: Based year 2018.

1. Reduce 136.9 tonnes of Particulates.
2. Reduce 803.6 tonnes of SO_x.
3. Reduce 11.5 tonnes of NO_x.

Note: Accumulated pollutants reduction per year (since 2020)

- Continue to reduce new water consumption by 46.9% in conjunction with the introduction of Fengshan River and reclaimed water from Linhai Reclaimed Water Plant.

Note: Based on a water consumption of 130,000 cubic meters per day in 2017 when reclaimed water was yet to be introduced.

2025

Reduce carbon emissions by 7% or cumulative reduction of 1.547 million tonnes CO₂e.

Note: Based year 2018.

1. Reduce 177.9 tonnes of Particulates.
2. Reduce 803.6 tonnes of SO_x.
3. Reduce 11.5 tonnes of NO_x.

Note: Accumulated pollutants reduction per year (since 2020).

- Plan the introduction of (alternative sources of) reclaimed water from Hefa industrial parks, and reduce new water consumption by 54.4%.

Note: Based on a water consumption of 130,000 cubic meters per day in 2017 when reclaimed water was yet to be introduced.

2030/2032

Reduce carbon emissions by 22% or cumulative reduction of 4.862 million tonnes CO₂e.

Note: Based year 2018.

1. Reduce 177.9 tonnes of Particulates.
2. Reduce 957.6 tonnes of SO_x.
3. Reduce 67.5 tonnes of NO_x.

Note: Accumulated pollutants reduction per year (since 2020).

- Continuously assess the feasibility of consuming 13,000 cubic meters of desalinated seawater per day in a move towards diversification of water sources, with the expectation of reducing new water consumption by 64.4%.

Note: Based on a water consumption of 130,000 cubic meters per day in 2017 when reclaimed water was yet to be introduced.

Note: ○ represents the achieved goals while △ representing goals that fail to achieve.

+ For more details [Completed CSC Sustainability Goals information] https://www.csc.com.tw/csc_e/hr/csr/sus/sus2.htm

Energy Management

- 2015-2022 annual average power-saving rate > 1% ○

Circular Economy and Co-production between Steel and Petrochemical Plants

Establish a pilot production line involving co-production between steel and petrochemical plants that captures 4,900 tonnes of carbon monoxide per year.

Resource Circulation Management

- Waste recycling ratio reaches over 90%, and zero solidification landfill. ○
- Recycled by-products reaches 360,000 tonnes. ○



Goals Achieved.

- 2015-2023 annual average power-saving rate > 1%.



Goals Achieved.

- Develop carbon monoxide production technology for co-production between steel and petrochemical plants with carbon monoxide concentration > 98.5%.



Goals Achieved.

- Waste recycling ratio reaches over 90%, and zero solidification landfill.
- Recycled by-products reaches 360,000 tonnes.

- 2015-2025 annual average power-saving rate > 1.05%.

- Establish a demonstration production line involving co-production between steel and petrochemical plants that reduces carbon emissions by 240,000 tonnes per year.

- Waste recycling ratio reaches over 92%, and zero solidification landfill.
- Recycled by-products reaches 412,000 tonnes.

- 2015-2030 annual average power-saving rate > 1.1%.

- Promote the commercial application of co-production between steel and petrochemical plants to reduce carbon emissions by 2.9 million tonnes.

- Waste recycling ratio reaches over 94%, and zero solidification landfill.
- Recycled by-products reaches 412,000 tonnes.

Note: Completed before 2040.

1.4 Stakeholder Engagement

CSC values the rights and opinions of its stakeholders and sets proper communication channels to promptly understand and address stakeholder expectations and demands. To appropriately respond to the relevant concerned issues of stakeholders, each department of the company divides the work to take responsibility for stakeholder communication. CSC’s “Corporate Governance and Sustainability Committee” reported the results of annual stakeholder engagement to the Board of Directors in August 2022.

CSC directly communicates with its stakeholders via a variety of channels, such as labor-management meetings, investor conferences, collaborative work safety meeting, production and sales meetings, and visiting each other, in order to collect suggestions and consider incorporating them into relevant goals. Questionnaire surveys are conducted anonymously to protect stakeholders' privacy and reflect their expectations of CSC in the most realistic manner.

Stakeholders	Employees	Contractors
Meaning for CSC	Employees are an important asset of the company and a partner for growth. Besides working together to create a safe work environment and ensure the employee's human rights, CSC also enhances the employee's skills through career development, education, training, and cultivate talent capital to strengthen the company's competitiveness.	Contractors represent an indispensable part in CSC’s supply chain, and are considered as comrades who thrive with CSC. Therefore, CSC's management and care towards contractors are on the same level as its employees, and CSC collaborates with contractors to improve their working conditions.
Communication Channels	<ul style="list-style-type: none"> ◇ Board representation by Labor Union of CSC; collective bargaining. ◇ Labor-management meeting (every month), regular departmental meeting (union representative present), Safety and Health Committee meeting (every 2 months). ◇ Seminar between the managerial departments, directors and supervisors of the union, and the shareholding trust committee (every 6 months). 	<ul style="list-style-type: none"> ◇ Contractor job safety meeting, Contractor environment, safety and health meeting, Contractor Safety and Health Committee meeting (monthly). ◇ Joint-work negotiation meeting, outsourcing management meeting (annually). ◇ Contractor training (irregular).
Engagement Highlights in 2022	<ul style="list-style-type: none"> ◆ Salary raises for ten consecutive years; employees' salaries were raised 4.5% on average in 2022. 	<ul style="list-style-type: none"> ◆ Communicated and promoted safety and health issues in monthly Contractor Safety and Health Committee meetings and Scheduled Maintenance negotiation meetings. ◆ Ensured outsourcing unit price and amendments to common contract terms, held joint-work negotiation meetings, and communicated/ promoted occupational safety and the management of collaborative partnerships. ◆ The maintenance units provided training courses and assessments for contractors based on the occupational safety and professional skills required by their job.

• Stakeholder Identification

Referencing the experiences of its departments and peers in the steel industry, major stakeholders are identified according to their attributes, such as dependency, responsibility, influence, diverse perspectives, and tension, as stipulated in the AA1000 Stakeholder Engagement Standard (AA1000SES). The major stakeholders identified by Sustainability Reporting Group include: customers and traders, central and local governments, employees and collaborating partners, suppliers and contractors, shareholders, society (including communities and local groups, media journalists, NGOs, and opinion leaders), steel industry peers, and academic researchers.

CSC Stakeholder	Group or personal which influences CSC or is affected by CSC.
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• Communication Channels and Effectiveness

+ For more details **【Stakeholder Engagement】** https://www.csc.com.tw/csc_e/hr/csr/sus/sus3.htm

Customers and Traders

Sales to the customers are the main source of revenue for CSC, and “Pursuing customer satisfaction, implementing high quality service and protecting customer rights” is CSC’s highest principle when facing our customers and traders. CSC also exerts its overall strength to lead downstream customers in expanding product applications, promoting close communication between customers, and maintaining integrity of the industry.

- ◇ Production-Sales meetings and records (quarterly).
 - ◇ Customer Satisfaction survey and Focus Group operation (annually).
 - ◇ Customer briefings, R&D alliances, steel-related professional training, technical seminars, high-level business management seminars, market survey visits, and customer interview sales calls (irregular).
- ◆ Sales calls amounted to approximately 760 person-times in 2022 as the government lifted the pandemic restrictions and stronger relationships with customers were formed (approximately 420 person-times in 2021)
 - ◆ The overall satisfaction score of the customer satisfaction survey was “good”.

Governmental Authorities

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

- ◇ Actively visit the competent authority and elected representatives to communicate reasonable regulations and policies.
- ◇ Through research discussions, forums, public hearings, training courses, and informal exchanges regarding a variety of policies and regulations (Irregular).
- ◇ Participate in symposiums, seminars, and assessments held by competent authorities (Irregular).

- ◆ Attended the public hearing on "Kaohsiung City Environmental Pollution and Improvement" held in Kaohsiung City Council on January 14, 2022
- ◆ Attended the “Explanation Meeting on the Ministry's Position on Retaining Articles in the Amendment to the “Climate Change Response Act” held by the Ministry of Economic Affairs on June 22, 2022
- ◆ Welcomed the EPA for an inspection of environmental improvement projects on July 20, 2022

Stakeholders
Suppliers
Shareholders

Suppliers are an integral part of CSC's normal operations. They must comply with CSC's requirements and abide by relevant codes of conduct.

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

Meaning for CSC

Communication Channels

- ◇ Participate in workshops (averages 20 per month).
- ◇ Communication meetings, pricing meetings (quarterly).
- ◇ Communication meetings for collaborative works of transportation (monthly)

- ◇ Toll-free shareholder service hotline (0800-746-006) and email (f1000@mail.csc.com.tw).
- ◇ Visits by appointment, conference calls, video conferences, inviting domestic and foreign institutional shareholders, participation in domestic and international investor conferences held by brokers (irregular).
- ◇ Publish digital and hard copy of annual report (every year).
- ◇ The shareholders meeting is convened in the second quarter annually and the resolutions are voted per item of the agenda. E-ballots is adopted with full shareholder participation in the voting process. The results are announced on MOPs and company website.

Engagement Highlights in 2022

- ◆ Assessed suppliers participating in the localization of spare parts at the end of the year and awarded them in public with certificates during the first quarter of the coming year.
- ◆ Organized 6 meetings on joint transport operations in 2022 to discuss various issues, such as business operations, operation safety, and traffic safety.
- ◆ Completed safety and health training and promotion for contractors in relevant services (e.g., cleaning, greenery, disinfection, and official laundry) in 2022, including traffic safety training, safety and health training, and joint-work negotiation meetings.

- ◆ The Company held a directors election in 2022, e-ballots accounted for less than 50%, while more than 90% of foreign investors used e-ballots.
- ◆ Invited domestic and international institutional shareholders and held conference calls for more than 161 times.
- ◆ Participated in 4 domestic and foreign investor conferences:
- ◆ Both foreign and domestic investors laid particular emphasis on the disclosure of actions in response to climate change and risk assessments. In 2022, CSC continued to communicate with investors through letters and conducted 8 meetings. CSC also reported relevant information to the board-level.

Steel Industry Peers

CSC develops a close rapport with the peer companies and actively participates in industry organizations and associations. Through communication and cooperation, CSC comprehensively grasps the dynamics of the domestic and international steel industry, technological advancements, as well as the latest information on policies. This serves as a reference for business expansion and strategic partnerships, enabling close alignment with the international market.

- ◇ Participate in meetings held by the Taiwan Steel & Iron Industries Association, worldsteel, South East Asia Iron and Steel Institute (SEAIISI) (irregular).
- ◇ Bilateral and multilateral communication, official visits and meetings (irregular).

- ◆ Participated in 2022 SEAIISI Steel Mega Event & Expo and 2022 ASEAN Raw Materials & Scrap Focus e-Event (virtual meeting)
- ◆ Participated in affairs of the Industrial Safety and Environmental Protection Committee of the Taiwan Steel & Iron Industries Association 3 times. Participated in 7 meetings of the steel slag recycling and reuse promotion team of the association.
- ◆ Engaged in exchanges on environmental protection issues with YFY Packaging Inc., Chung Hwa Pulp Jitang Plant, and Chung Hwa Pulp ESG Office on March 29, 2022.

Society Note

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

- ◇ Visits and negotiations were conducted by Public Affairs Department, CSC Group Education Foundation, Labor Union of CSC, and employee clubs (irregular).
- ◇ Press releases and spokesperson interviews (Irregular).
- ◇ Participated in seminars and meetings held by the professional association, academic institutes, and unions (regular and irregular).

- ◆ Participated in the Taiwan Alliance for Sustainable Supply's TASS2022 Sustainable Taiwan Expo, and shared CSC's carbon reduction path planning and the development of renewable energy business by subsidiaries.
- ◆ Participated in the meeting of National Toxic Chemicals Regional Allied Defense South District Team.
- ◆ Joined Chinese National Federation of Industries, Taiwan Steel & Iron Industries Association, and Taiwan Association of Soil and Groundwater Environmental Protection.

Academic Researchers

CSC is striving to become a steel mill that provides premium products and services. Collaboration with academic personnel is an indispensable external resource. It not only facilitates CSC to become a premium steel company, but also improves CSC social image.

- ◇ Progress review of Engineering Research Center and Industry and Academia Alliance (every 2 months).
- ◇ Progress review of Joint Research Laboratory (mid-term report of outsourced researches and research guidance (every 6 months).
- ◇ Proposal and final reports of ERC, JRL, and outsourced researches (every year).
- ◇ Keynote speeches (irregular).

- ◆ Invite domestic and overseas experts and scholars to give speeches (non-online exchanges) for a total of 2 person-days.
- ◆ 105 research projects outsourced to schools and research facilities.
- ◆ Invited local and international experts and scholars to guide 2 research project.

Note: Communities and local groups, journalists, non-governmental organizations and opinion leaders are included.

1.5 Material Topics

Process of Materiality Analysis

Understand organizational context

2022 Sustainability Topics List

36
topics

Sustainability topics from three aspects are listed according to CSC's vision and sustainable development policy by referencing international standards such as the updated GRI Universal Standards, SDGs, and topics of concern to the international steel industry, as well as important industry trends, and with consideration to stakeholder feedback.

Identify impacts

2
Invited

external experts in 2022

Identify the positive and negative impact of each issue, integrate contents of impacts into the questionnaire, and invite external experts to provide recommendations for questionnaires.

Evaluate the significance of impacts

781
responses were collected

2022 External and internal survey

Invite stakeholders to respond to the materiality questionnaire survey, evaluate the severity and likelihood of impact for each topic, and determine the significance of impact according to the results of questionnaires collected.

Rank topics according to significance of impacts and report

12
material

topics in 2022

Rank topics according to the significance of their impact, the threshold is set as the top 30% of positive and negative impacts. Material topics are examined by teams of the Corporate Governance and Sustainability Committee, and verified material topics are submitted to the senior manager.

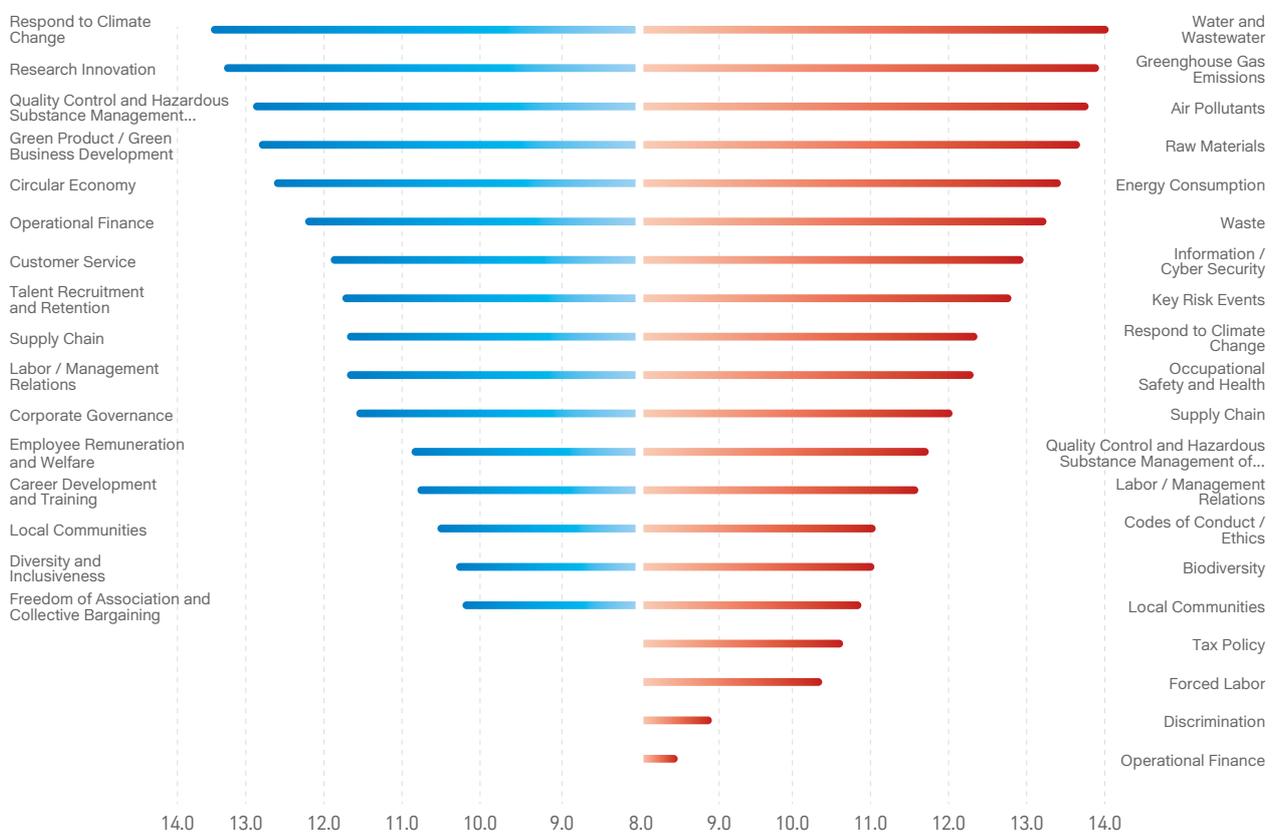
Aside from routine communication with stakeholders, CSC has established material topic analysis. Aside from routine communication with stakeholders, CSC has established material topic analysis procedures in compliance with the GRI Universal Standards 2021 and AA1000SES. Through the collection and research of World Steel Association's Sustainability Charter and media analysis, we examined topics that are highly correlated with the steel industry, examined the external impact of each topic, and integrated it into the questionnaire. We then invited external experts to provide opinions on the completeness of topics and contents of impacts. The significance of impacts is then evaluated and ranked through stakeholder questionnaire surveys. After confirmation by teams of the Corporate Governance and Sustainability Committee, the topics are submitted to the senior managers who are also members of Corporate Governance and Sustainability Committee for approval. For material topics with high impact, CSC discloses its management approach and performance in its sustainability report and on its official website under corresponding topics of the GRI Standards. We ensure that the contents of the report comply with the principles of stakeholder inclusiveness, materiality, and completeness, and reflect on the position and sustainability influence of CSC in the value chain. This is used as an important basis for examining and continuously improving our sustainability management and performance.

• Prioritization and Identification

Material topic analysis for sustainability issues mainly carries out identification and prioritizing through questionnaire survey results. CSC continues to conduct an opinion survey on its Sustainability website to determine the level of concern of stakeholders for each sustainability topic. Stakeholders were invited by CSC departments to fill out an electronic questionnaire starting from November 22, 2022. A total of 684 responses were collected as of December 16, 2022, and quantified results were obtained on the severity and likelihood of positive or negative impacts that CSC operations might have on the economy, environment, and society. 97 1st-level and 2nd-level directors received the questionnaires and results were weighted based on the AA1000SES, and the weights of level of concern were evaluated to obtain quantified indicators of significance. Finally, significance is used as the basis for prioritizing material topics of sustainability issues. After review by teams of the Corporate Governance and Sustainability Committee, among the 11 material topics in the top 30%, there were no social issues. With consideration to the balance of reporting on sustainability issues, "Occupational Safety and Health," which had the highest significance, was included as a material topic in 2022.

Significance of Positive Impact

Significance of Negative Impact



2022 Material Topics

Positive Impact Topics	Negative Impact Topics
<ul style="list-style-type: none"> ● Respond to Climate Change ● Research Innovation ● Quality Control and Hazardous Substance Management of Products ● Green Product/Green Business Development ● Circular Economy 	<ul style="list-style-type: none"> ● Water and Wastewater ● Greenhouse Gas Emissions ● Air Pollutants ● Raw Material ● Energy Consumption ● Waste ● Occupational Safety and Health

• Material Topics and Impact Response

A total of 12 material topics were identified through the materiality analysis in 2022, and results were examined. Compared with 2021, topics that were added include Research Innovation, Quality Control and Hazardous Substance Management of Products, Circular Economy, GHG Emissions, and Raw Materials. One topic of Operational Finance is reduced. CSC highly values this phenomenon and integrates external expectations and company development directions into its sustainability goals. In addition, CSC's internal departments identify actual and potential impacts of material topics on the economy, environment, and people (including human rights) and develop impact prevention, mitigation, and remediation to effectively respond to stakeholders. The management of these topics stems from CSC Values and Operation Philosophy and is incorporated into the Sustainable Development Policy and risk management strategies. The economic topics are managed by annual business directives and targets according to the respective attributes of each topic; the environmental topics and the social topic on Occupational Safety and Health are included in the EHS Policy; the other social topics consist of the social participation concepts. The corresponding material topics and GRI Standards can refer to Appendix GRI Standards Index in this report.

Material Topics	Impact Aspect ● Actual ◎ Potential			Prevention, Mitigation, and Remediation Measures	Chapter
	Economy	Environment	People (Human Right)		
Research Innovation	●	●		<ul style="list-style-type: none"> ● The Company reduces carbon emissions and enhances the carbon emission competitiveness of the domestic steel industry through the development of low carbon iron making technology, increase in production technologies that use more scraps, and new energy (e.g. hydrogen energy) iron making technologies . We continue to promote upgrading of intellectual property management to protect the Company's freedom in operations and innovative R&D results. 	3.3.1

Material Topics	Impact Aspect ● Actual ◎ Potential			Prevention, Mitigation, and Remediation Measures	Chapter
	Economy	Environment	People (Human Right)		
Quality Control and Hazardous Substance Management of Products	◎	●		<ul style="list-style-type: none"> CSC established Steel Product Quality Management System based on the framework of IATF 16949 and ISO 9001, and continues to improve its management process and product quality. Furthermore, CSC established a Hazardous Substance Process Management System through the implementation of IECQ HSPM QC 080000, and controlled the use of all restricted substances that have a significant impact on the environment. 	3.3.2 3.3.3
Green Product/Green Business Development	●	●	◎	<ul style="list-style-type: none"> CSC's green products are finished products with external energy saving and carbon reduction benefits. We are actively developing solar power and wind power businesses to reduce GHG emissions and air pollution and drive green economic development. The development of an offshore wind power industry supply chain will create local employment opportunities, track transportation will help reduce waste gas, is friendlier to pedestrians, and also activates local tourism. 	3.4
Circular Economy	◎	●	◎	<ul style="list-style-type: none"> The Company has extensive industry affiliations from raw materials supply chain to product development, and has driven the application of many by-products, waste recycling and reuse, and cross-industry energy and resource integration. This improves the overall resource use efficiency, drives the development of upstream and downstream industries, and creates employment opportunities. 	4.4
Waste	◎	●	◎	<ul style="list-style-type: none"> CSC properly sorts and manages process waste, such as sludge, dust, and waste lubricant, and recycles and reuses the waste in processes. This reduces demand on outsourced treatment and lowers risk. 	4.4.1
Raw Materials	●	◎		<ul style="list-style-type: none"> The Company has been developing new material sources in response to the higher risk of delay or suspension of material supply, and has been actively working to stabilize economic development. We are also promoting the sustainable use of raw materials through increased use of scraps in processes. 	5.2.1

Material Topics	Impact Aspect ● Actual ◎ Potential			Prevention, Mitigation, and Remediation Measures	Chapter
	Economy	Environment	People (Human Right)		
Energy Consumption	◎	●	◎	<ul style="list-style-type: none"> The utilization and management of energy-related activities will have positive economic impacts. However, if energy is not effectively used or improperly treated and discharged, it may have negative impacts on the environment and society. Therefore, CSC continues to improve energy performance with the ISO 50001 energy management system PDCA spirit, enhance energy efficiency (such as upgrading reheating furnaces to regenerative furnaces, installing CDQ1/2 dry quenching waste heat recovery systems), and promote District Energy Integration and development of green energy to reduce environmental impacts. 	5.2.2
Air Pollutants		●		<ul style="list-style-type: none"> In coordination with the Executive Yuan's Air Pollution Control Action Plan, the Company will invest 35.508 billion TWD in 4 air pollution improvement projects in 2023-2026, which will reduce and prevent impact on the environment by reducing par. by 57.7 tonnes/year, SOx by 154 tonnes/year, NOx by 56 tonnes/year, and VOCs by 73 tonnes/year. 	5.2.3
Water and Wastewater	●	●	◎	<ul style="list-style-type: none"> The steelmaking process uses a considerable amount of water resources, and reducing production due to water rationing will impact economic output value. If wastewater treatment facilities malfunction, it may affect the quality of effluent water. Hence, CSC continues to strengthen equipment management to reduce the impact on the environment, and effectively lowers its tap water consumption using reclaimed water for industry. 	5.2.4
Respond to Climate Change	◎	●		<ul style="list-style-type: none"> Following the continued rise in global average temperature, the frequency and severity of extreme weather events, such as typhoon and flood, have increased. CSC thus planned its carbon reduction pathway and transition strategy and strengthened its own adaptation approach, in order to achieve carbon reduction to mitigate the impact of climate change. 	5.3

Material Topics	Impact Aspect ● Actual ◎ Potential			Prevention, Mitigation, and Remediation Measures	Chapter
	Economy	Environment	People (Human Right)		
GHG Emission		●		<ul style="list-style-type: none"> Due to climate change, the high GHG emission density of the steel industry has attracted the attention of domestic and overseas stakeholders. CSC aims to achieve carbon neutrality by 2050, and has stepped up efforts in energy conservation and carbon reduction, as well as the improvement of process energy efficiency. We have also engaged in strategic cooperation with peers in the industry, academia, and research institutes to lower the impact of the industry's GHG emissions. 	5.3
Occupational Safety and Health			●	<ul style="list-style-type: none"> CSC places a high priority on safety and health, strictly complying with legal regulations and requiring affiliated contractors and employers to do the same. CSC has established relevant indicators internally, and if the indicators are not met, it requires an analysis of the reasons and proposes improvement measures. CSC also sets safety and health performance standards for its contractors and requires those with poor performance to provide improvement reports and track the effectiveness of their improvements through a rolling review process. 	6.5

• Supplementary Explanation for Report Arrangement

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

Sustainability Topics	Sustainability Official Website
Tax Policy	https://www.csc.com.tw/csc_e/hr/csr/in/in8.htm
Information/Cyber Security	https://www.csc.com.tw/csc_e/is/is.html
Customer Services Management	https://www.csc.com.tw/csc_e/hr/csr/in/cm5.htm
Biodiversity	https://www.csc.com.tw/csc_e/hr/csr/env/soc3.htm
Human Rights	https://www.csc.com.tw/csc_e/hr/csr/em/em3.htm
Talent Recruitment and Retention	https://www.csc.com.tw/csc_e/hr/csr/em/em.htm
Career Development and Training	https://www.csc.com.tw/csc_e/hr/csr/em/em6.htm

Corporate Governance

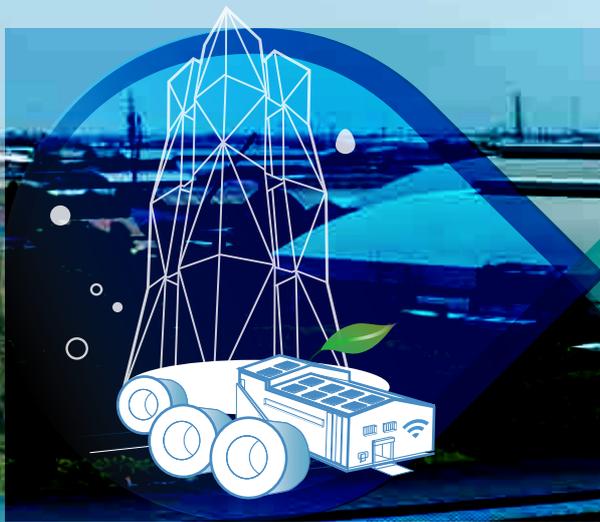
CHAPTER

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- 2.1 Strategies and Targets
 - 2.2 Organization Chart
 - 2.3 Board of Directors
 - 2.4 Corporate Governance and Sustainability Committee
 - 2.5 Ethical Conduct
 - 2.6 Risk Management

2.1 Strategies and Targets

• Ten-year Operational Strategies

Each year, CSC proposes its operation and development strategies for the next 10 years. CSC strives to become a leading-edge steel mill that provides premium products and services, and engages in developing the green energy industry. CSC planned 10 operation and development strategies in 2023-2032:



Core strategy 1

To become a steel mill that produces advanced premium products with high value

1. To develop Advanced Premium Steel (APS).
2. To establish excellent manufacturing capabilities.
3. To enhance marketing capabilities.
4. To deepen the upgrading of steel-using industries. 5. To introduce the application of AIoT.
6. To build up highly efficient business systems and processes.
7. To move towards high productivity.
8. To pass on and enhance corporate culture.



Core strategy 2

To develop the green energy industry

9. To develop the green industry business
10. To develop and improve carbon reduction technologies.

2.1.1 Annual Business Directives and Performances

Implementation results for 2022 include the 4 main points as follows:

Business Directives	Performances
<p>Premium Steel, Strong Resilience</p>	<ol style="list-style-type: none"> In 2022, CSC delivered Premium Steel products accounting for 55.8% (the goal was 50%) of overall sales, and Advanced Premium Steel products accounting for 6.8% (the goal was 7.5%) of overall sales. CSC's delivery of steel products reached 8.59 million ton (9.64 million tonnes targeted) in 2022. CSC will continue to implement marketing strategies, such as setting product prices close to market prices, acquiring new customers, and developing new markets. CSC continued to promote "cost reduction and profit increase activities," linked together internal and external R&D resources through open innovation, accelerated the development of highly competitive products, low cost process and value-added applications, to improve the price-performance ratio and create differentiated competitive advantages for products. In 2022, CSC reduced costs by 5.99 billion TWD, representing a 118% target achievement rate. Further improvement of labor safety: CSC will further raise workplace safety awareness among contractors, conduct effectiveness audits, engage in labor safety exchanges within the group, and implement mid-term and long-term plans for road traffic safety inspections, achieving the goal of 0 major occupational accidents in 2022. The actual carbon emission intensity this year was 2.330 tCO₂e/tCS (target not achieved). With its ongoing efforts to reduce pollutant emissions and commitment to circular economy, CSC plans to incorporate carbon emission intensity in its business targets to demonstrate its determination to reduce carbon emissions.
<p>Energy Conservation and Carbon Reduction, Circulation and Sustainability</p>	
<p>Smart Steel Mill, Transformation and Upgrade</p>	
<p>Green Energy Business Opportunities, Breaking New Ground</p>	

2022 Performances

Business Targets	Targets in 2022	2022 Performance	Targets in 2023
Reduction of Costs	≧ 5.09 billion TWD ⁽¹⁾	5.99 billion TWD	≧ 5.19 billion TWD
Delivery of Steel Products	≧ 9.64 million tonnes	8.59 million tonnes ⁽¹¹⁾	≧ 8.88 million tonnes
Sales of Premium Steel ⁽¹⁾ % of Finished Product Sales	≧ 4.34 million tonnes ≧ 50%	4.292 million tonnes ≧ 55.8%	≧ 4.22 million tonnes ≧ 50%
Sales of Advanced Premium Steel ⁽¹⁾ % of Finished Product Sales	≧ 650 thousand tonnes ≧ 7.5%	527 thousand tonnes ⁽¹¹⁾ ≧ 6.8%	≧ 622 thousand tonnes ≧ 7.4%
Carbon Intensity	≦ 2.24 tonnes CO ₂ e/ tonne crude steel	2.330 tonnes CO ₂ e/ tonne crude steel ⁽¹¹⁾	≦ 2.23 tonnes CO ₂ e/ tonne crude steel
Major Occupational Accident (Count)	0	0	0
Number of smart production lines	--	--	≧ 9

Note 1: The business target for 2022 was Premium Steel products/Advanced Premium Steel products steel shipments. The target was changed to sales according to the resolution of the 121st TQM meeting.

Note 2: Considering the original target was comparatively conservative, in the middle of 2022, the target was raised from 4.03 billion TWD to 5.089 billion TWD in response to the change in market conditions.

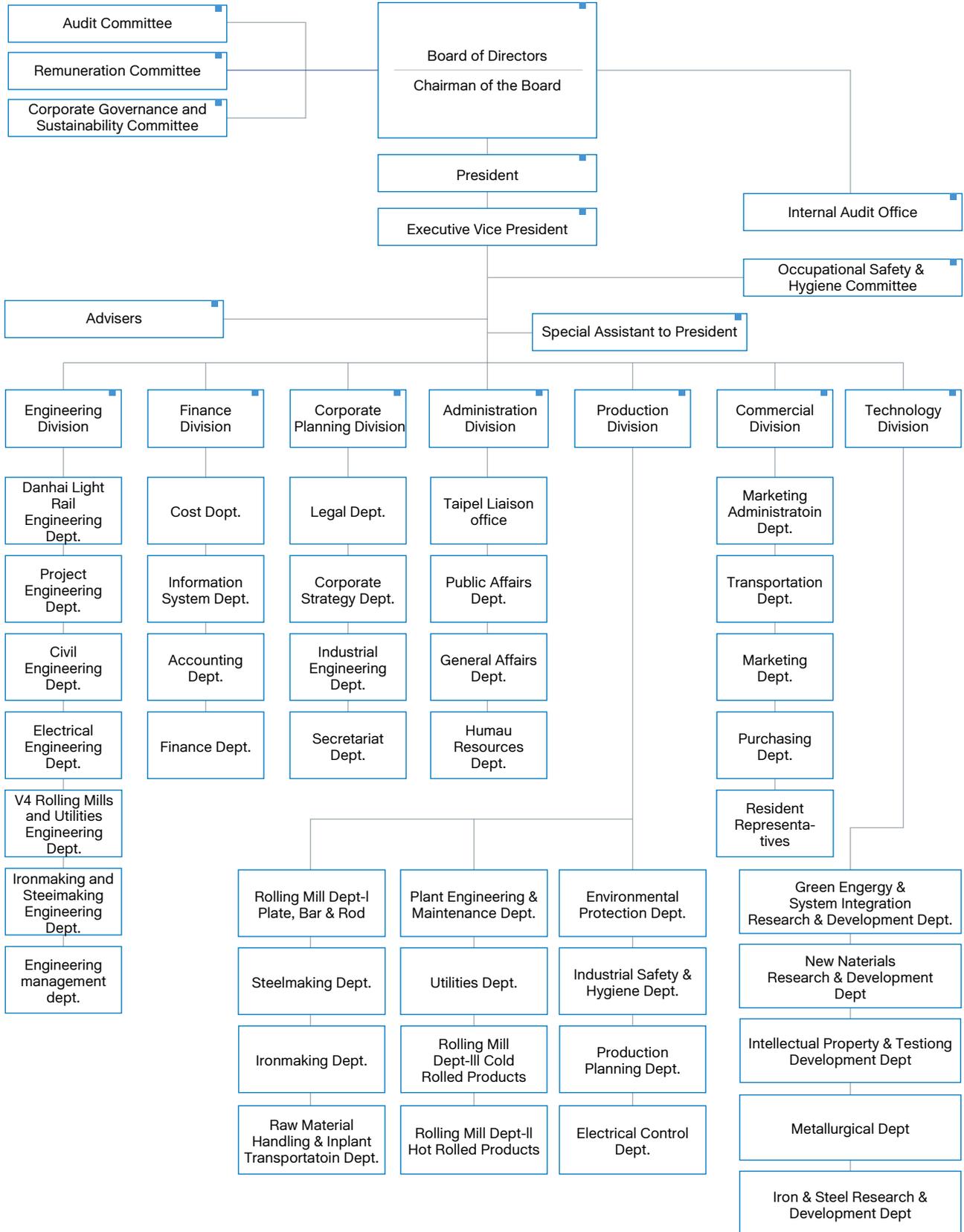
Note 3: Shipments of steel products did not reach the goal due to the poor global environment with most customers holding a wait-and-see attitude and prioritizing inventory digestion. Customers only made purchases as needed, and it resulted in a decrease in purchase orders and shipments. Advanced Premium Steel product sales (including percentage) did not reach the goal due to poor market conditions that made it hard to receive purchase orders for high-end steel products. The continued decline in prices also reduced the profits of Advanced Premium Steel products. Carbon emission intensity did not reach the goal due to the market situation and the decrease in crude steel production, which resulted in low equipment utilization.

2.1.2 Response to Major Impacts

In 2022, the global economy was impacted by high inflation, a slowdown in the China's economy, and the consequences of the dispute between Russia and Ukraine, leading to a decline in manufacturing sector activity. Taiwan passed the Greenhouse Gas Reduction and Management Act in 2023, and set the goal to achieve net zero emissions before 2050. In response to climate change and the new carbon fee system, industries with high carbon emissions, including steel, semiconductor, cement, and power, will begin to collect carbon fees. The EU plans to implement the Carbon Border Adjustment Mechanism (CBAM) for upstream and downstream products of imported steel and aluminum on a trial basis starting in October 2023. Importers will be required to report the carbon emissions of imported products during the trial implementation period, and carbon tariffs will be formally levied in 2026. The trend of green pricing and carbon neutrality will bring an era of high steel prices. As the leader of Taiwan's steel industry, CSC will work together with downstream industries that use steel to make preparations in advance.

CSC utilizes logistics and production resources and continues to strengthen its marketing channels and supply chain services to support downstream industries that rely on steel. CSC also adopts the strategy of "domestic sales first, supplemented by foreign sales," and makes flexible adjustments according to the market situation. Externally, CSC speeds up the development of new products and the promotion of new applications, plays the role of an advanced premium steel manufacturer in line with government policies and industry trends, expands orders for high value-added products, and strengthens relationships with customers. Internally, CSC carries on upgrading production equipment and optimizing manufacturing processes to reduce costs while aligning itself with the international trends of green energy and carbon reduction. At the same time, CSC refines smart sales and operation plans to enhance its overall competitiveness.

2.2 Organization Chart



2.3 Board of Directors

According to Article 192-1 of the “Company Act” and Article 22-1 of the CSC’s Articles of Incorporation, the directors are selected by the nomination system for candidates. Independent directors and non-independent directors are nominated separately, and are elected by shareholders from the two candidate lists. All directors are covered by liability insurance to reduce the risks of decision-making.

CSC specifies six professional expertise of directors (law, accounting, industry, finance, marketing, and technology) in the Rules Governing the Election of Directors. These skills cover important abilities required for corporate governance, as well as the knowledge required for sustainable development.

For example, Director Chun-Sheng Chen is a representative of CSC Labor Union and has been concerned about labor related issues for many years. Some directors are top managers at CSC and familiar with corporate governance and CSC’s business operations. Director Shyi-Chin Wang was formerly the vice president of the Technology Division and can help the Board of Directors better understand developments in energy conservation and carbon reduction technologies. Independent directors are concerned about ESG issues from an external perspective and provide the Company with recommendations.

Title	Name	Gender	Representative of Juristic Person
Chairman	Chao-Tung Wong	Male	<ul style="list-style-type: none"> Ministry of Economic Affairs, Taiwan (R.O.C.)
	Wen-Sheng Tseng	Male	<ul style="list-style-type: none"> Ministry of Economic Affairs, Taiwan (R.O.C.)
	Ming- Jong Liou	Male	<ul style="list-style-type: none"> Ministry of Economic Affairs, Taiwan (R.O.C.)
Director	Shyi-Chin Wang	Male	<ul style="list-style-type: none"> Chiun Yu Investment Corporation
	Chien-Chih Hwang	Male	<ul style="list-style-type: none"> Ever Wealthy International Corporation
	Cheng-I Weng	Male	<ul style="list-style-type: none"> Hung Kao Investment Corporation
	Yueh-Kun Yang	Male	<ul style="list-style-type: none"> Gau Ruei Investment Corporation
	Chun-Sheng Chen	Male	<ul style="list-style-type: none"> Labor Union of China Steel Corporation
	Shyue-Bin Chang	Male	<ul style="list-style-type: none"> Emeritus Professor, Kao Yuan University Ph.D.in Mechanical and Aerospace Engineering, Cornell University, U.S.A.
	Min-Hsiung Hon	Male	<ul style="list-style-type: none"> Emeritus Professor, Department of Materials Science and Engineering, National Cheng Kung University Ph.D. in Materials Science and Engineering, North Carolina State University, U.S.A.
Independent Director	Lan-Feng Kao	Female	<ul style="list-style-type: none"> Professor, Department of Finance, National University of Kaohsiung Ph.D. in Accounting, National Cheng Kung University

Note: as of December 31, 2022.

CSC's 18th Board of Directors consists of 11 members, including 3 independent directors, who were elected on June 17, 2022 with a tenure of three years. Of the 11 members in the Board of Directors, 10 are male directors while the remaining one is a female director. These directors, whose age lies between 53 and 79 years old, specialize in a variety of fields, including steel, resource engineering, civil engineering, business administration, industrial management, mechanical engineering, materials engineering, electrical engineering, aerospace, and accounting, thus fully realizing the goal of diversity in the Board of Directors.

Directors Chao-Tung Wong, Shyi-Chin Wang, Chien-Chih Hwang, and Yueh-Kun Yang are involved in the decision-making process at CSC. Shyi-Chin Wang, who is currently the President of CSC, specializes in steel business management, leadership and decision-making, and industry knowledge and technology. Chien-Chih Hwang, who is currently the Executive Vice President and Chief Information Security Officer of CSC, specializes in steel business management, leadership and decision-making, industry knowledge, and marketing. Yueh-Kun Yang, who is currently the Vice President of the Finance Division at CSC, specializes in steel business management, leadership and decision-making, industry knowledge, finance, and accounting. The aforesaid directors assist in the operations of the company based on their expertise and report to the Board of Directors.

2.3.1 Committees of the Board

For strengthening the operation of the Board of Directors, the Board has three functional committees such as "Audit Committee", "Remuneration Committee", and "Corporate Governance and Sustainability Committee".

- **Audit Committee**

The committee is composed of 3 independent directors, one of whom has accounting and financial expertise. Its main responsibility is to assist the Board in overseeing integrity of the company's financial statements, Certified Public Accountant (CPA) appointment (termination) and integrity/performance, effective implementation of the company's internal control, the company's compliance with legal and regulatory requirements, and the company's control of existing and potential risks. The committee convened 4 meetings in 2022. The proposals drawn from the resolutions of the meetings shall also be presented to the Board.

- **Remuneration Committee**

The committee is composed of all 3 independent directors who shall review and assess the performance evaluation system for commissioned managers, the evaluation results, and related remuneration systems. The committee convened 3 meetings in 2022. The proposals drawn from the resolutions of the meetings shall also be presented to the Board.

• CSC' s remuneration policy:

Directors	<ul style="list-style-type: none"> ▶ According to Article 6, Paragraph 1 of CSC' s Articles of Incorporation, no more than 0.15% of the company' s profit shall be set aside as remuneration for directors under the resolution of the meeting of the Board of Directors if there is profit in any given fiscal year, and the distribution of directors' remuneration shall be reported in the shareholders' meeting. ▶ Independent directors receive fixed compensation and do not receive director's remuneration described above. ▶ Each year, the distribution of directors' remuneration is first reviewed by the Remuneration Committee before it is submitted to the Board of Directors for approval. Remuneration is allocated to each director according to the principles for the allocation of directors' remuneration and the results of performance evaluation for individual directors.
Senior executives	<ul style="list-style-type: none"> ▶ According to the rules for senior executives' remuneration set forth in CSC' s regulations governing salary management and related provisions, the major components in the remuneration of appointed managers include basic salary, bonuses, and employee compensation. Basic salary is determined by reference to the usual pay levels in the industry and listed companies as well as in consideration of the reasonableness of the connection between individual performance, the company' s business performance, and future risks. ▶ ESG-related key performance indicators (KPIs) are also assigned to senior executives. Achievement of these KPIs is tied to individual performance.

2.3.2 Board Performance and Evaluation

With a view to implementing corporate governance and strengthening the functions of the Board of Directors, performance targets are set to enhance the efficiency of the Board of Directors' operations and implement ESG work. During the 4th meeting of the 17th Board of Directors held on November 11, 2019, the "Regulations Governing Performance Evaluation of the Board of Directors" was approved in accordance with Article 18 of the "Operation Directions for Compliance with the Establishment of Board of Directors by TWSE Listed Companies and the Board's Exercise of Powers" and Article 37 of the "Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies." Based on this set of regulations, internal performance evaluation is conducted once a year by means of a questionnaire survey. Considering that directors are independent of each other, every director is required to answer the questionnaire. After the Secretariat Department collects the questionnaires from them and compiles the results of performance evaluation, a report on the results is then submitted to the Board of Directors by the end of the first quarter of the following year for review and improvement. Meanwhile, external performance evaluation is carried out by an external independent institution or a team of experts and scholars at least once every three years.

The evaluation scope includes performance evaluation of the overall Board of Directors, individual directors, and functional committees. Self-evaluation items encompass the level of involvement in company operations, enhancing the quality of board decision-making, board composition and structure, etc. Performance evaluation items for board members include their understanding of director duties, level of involvement in company operations, internal relationship management, communication, and so on. The results of the board's performance evaluation are applied as reference criteria for the selection or nomination of directors. Additionally, the individual performance assessment results of directors (excluding independent directors) serve as a basis for determining director remuneration distribution.

+ For more details [Board Performance Evaluation Method] <https://www.csc.com.tw/csc/cg/cg.html#law> (temporarily in traditional Chinese only)

The average score in the board performance self-evaluation is 4.9 points in 2022. Hence, the Board of Directors has good operational performance.

Furthermore, the company periodically arranges for directors and managers of CSC's group to take ESG-related sustainability courses. Topics of courses in 2022 include the game of transforming industries in Taiwan, sustainability risks and opportunities of companies, and case study of serious criminal and civil liabilities of directors and supervisors. In line with the five action plans of Corporate Governance 3.0 Sustainable Development Roadmap, CSC will continue to arrange further courses or workshops for Directors, in order to follow the global trends.

+ For more details [Further Study for the Board of Directors] https://www.csc.com.tw/csc_e/cg/cg.html#Con

2.4 Corporate Governance and Sustainability Committee

CSC established the Corporate Governance and Sustainability Committee in November 2019 . The committee is primarily charged with assisting the Board of Directors in overseeing the promotion, implementation, and execution of various sustainability-related matters, such as corporate governance, ethical corporate management, sustainable development policies, risk management, energy conservation & carbon reduction and carbon neutrality, and digital transformation.

The Corporate Governance and Sustainability Committee is composed of 5 directors, and 3 of them are independent directors who excel in mechanical engineering, material science, and finance and accounting. The other 2 directors are an employee director who values labor welfare and a manager with hands-on practices in management. The Committee meets the skills needed for corporate governance and sustainable development. 3 meetings were held in 2022.

Organizational Structure of the Corporate Governance and Sustainability Committee



The heads of the four execution teams, Corporate Governance and Ethical Corporate Management Team, Sustainable Environmental Development Team, Employee Care and Social Engagement Team, and Risk Management Team, are served by the vice presidents of the relevant divisions, while the Corporate

Governance Officer serve as the convener. Task force on energy saving & carbon reduction and carbon neutrality is headed by the chairman of the board. Each execution team is responsible for reporting implementation plans and results to the Corporate Governance and Sustainability Committee and the Board of Directors on a regular basis. In addition, the Corporate Governance and Sustainability Committee periodically reports important information regarding the annual stakeholder communication outcomes and investor expectations to the Board of Directors, facilitating the Board's understanding of external expectations for the company's sustainable development.

In February 2023, the Board of Directors approved the establishment of the "Task Force on Digital Transformation" under this Committee, led by the President, to drive the company towards a smart steel plant.

Please refer to the CSC official website for the implementation results in 2022. The implementation plans for 2023 will gradually fulfill our commitment to sustainable development based on ESG goals that were set in 2022.

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

2.5 Ethical Conduct

2.5.1 Regulations and Implementation

- **Business Integrity**

CSC established the “Procedures for Ethical Management and Guidelines for Conduct”, which is used to implement business activities based on integrity management policy. CSC's integrity management policies are being publicized in internal regulations, annual reports, company websites, publicity and external activities.

In addition, CSC also advocates new hires and employees to sign the “Statement and Commitment to Employee Code of Conduct” at the same time when initiating and promoting the Taiwan Intellectual Property Management System (TIPS), so that they understand and undertake that they shall neither directly nor indirectly provide, promise, demand or accept any improper benefits, or engage in other behaviors that are in breach of integrity, laws and regulations or fiduciary duty when performing their duties.

In annual training workshops for new employees, CSC arranges for a series of lectures on company rules and regulations, corporate culture, information security, and intellectual property. The company also raises awareness of the importance of integrity among employees by providing information on various topics, such as “part-time jobs,” “accepting improper benefits,” “use of information,” and “trade secrets.” Employees are also required to comply with laws and regulations as well as the company’s rules and regulations. In 2022, CSC arranged 13 training sessions for new employees, and 514 participants were trained. To improve the professional and legal knowledge of directors and supervisors in the CSC Group, CSC arranged 2 corporate governance courses and 1 seminar on sustainable development, criminal and civil liabilities of directors and supervisors, and mergers and acquisitions.

• Avoiding Conflicts of Interest

To promote honest and ethical behaviors of directors, “The Codes of Ethics for Directors” of CSC strictly stipulates avoidance of conflict of interest and sets anti-corruption principles. Also, “Rules of Procedure for Board of Directors Meetings”, which was enacted in accordance with “Regulations Governing Procedure for Board of Directors Meetings of Public Companies”, provides that if there is a conflict of interest for any director with respect to any matter on the agenda at the board meeting, the director must recuse from discussion and voting on that matter and must not exercise voting rights as proxy for another director on that matter. With consideration to the trend of corporate governance, when amending the Rules of Procedure for Board of Directors Meetings in 2022, the Company deems directors to have a conflict of interest if the director's spouse, relative within the second degree of kinship, or a company with controlling interest or subordinate relationship with the director has a conflict of interest in the agenda item.

Please refer to CSC’s 2022 annual report for the execution results of principles and regulations mentioned above; the report also provides a further disclosure on cross-board membership, cross-shareholding with suppliers and other stakeholders, existence of controlling shareholders, and related parties including their relationships, transactions, and outstanding balances.

[CSC's 2022 Annual Report and its Appendix](#)



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

• Preventing Malpractice

CSC has always banned dishonest behaviors such as “soliciting, accepting, and being bribed with improper benefits from suppliers or stakeholders”, and this stance has been a part of CSC's corporate culture. Complying with Article 7.1.1 of the “Political Donations Act”, CSC does not contribute to political donations. According to “Ethical Corporate Management Best Practice Principles for CSC”, all of the CSC’s directors, managers, employees, mandataries or anyone who de facto controls the management of CSC should neither directly nor cause other dishonest behaviors such as violation of integrity, illegality, or breach of fiduciary duty when engaging in commercial activities.

The company establishes an open complaint channel through the whistleblower hotline, fax, e-mail and company website etc. The Internal Audit Office is responsible for handling the complaint case, keeping the information of such case confidential throughout the investigation process.

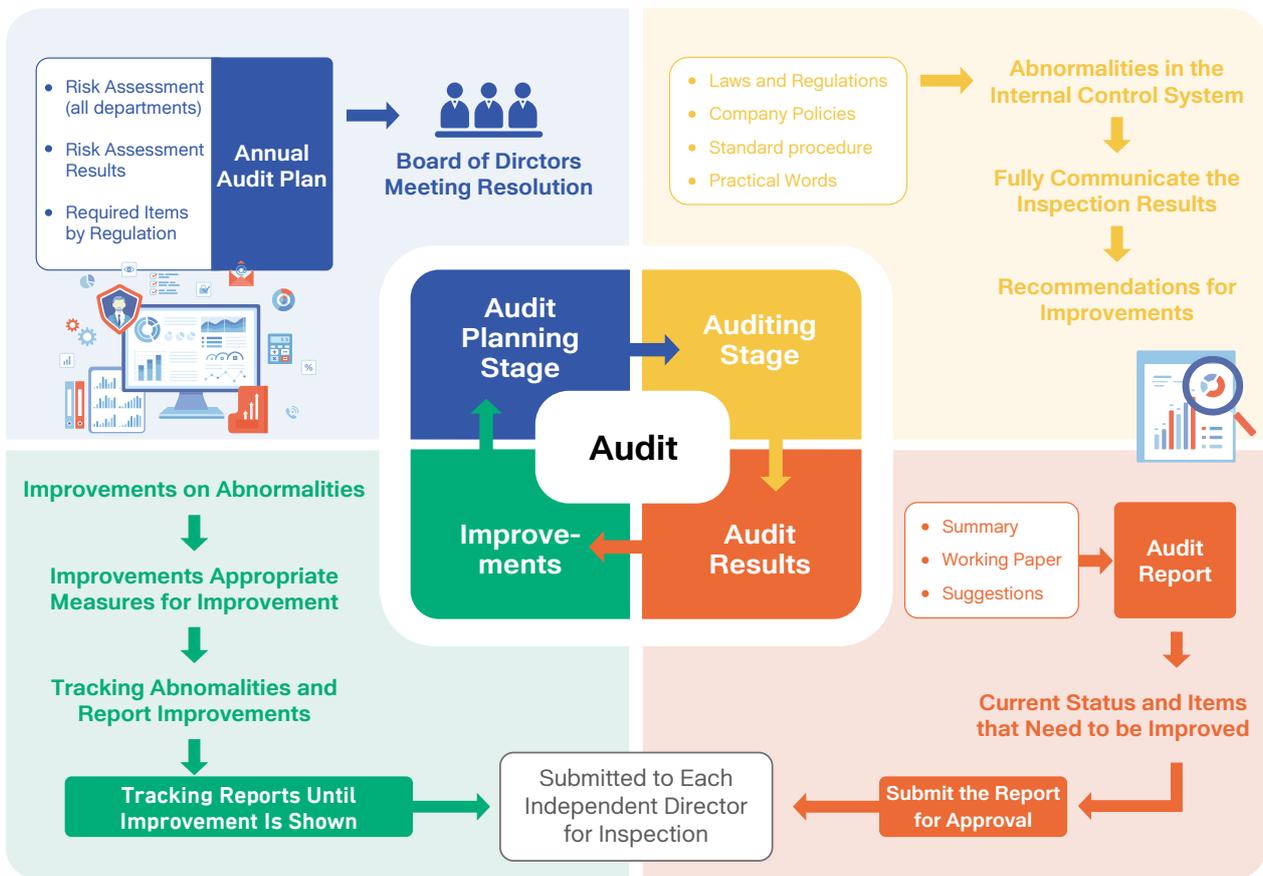
Aspect	Anti-Corruption Measures
Organizational Regulations	<ul style="list-style-type: none"> CSC stipulates moral requirements of CSC such as “Ethical Corporate Management Best Practice Principles for CSC”, “Procedures for Ethical Management and Guidelines for Conduct”, “The Code of Ethics for General Managers and Above”, “the Ordinance for Avoiding Conflict of Interests”, “Integrity and Ethics Directions for Employees of China Steel Corporation Group”.
Employee Training	<ul style="list-style-type: none"> New employees are trained on ethical practice, discipline following, information utilization, confidential items and other organizational regulations. Promotion of corporate culture is accessible to all employees through the CSC Semimonthly Journal and website.
Evaluation of Compliance and Operations	<ul style="list-style-type: none"> In accordance with the FSC's Regulations Governing the Establishment of Internal Control Systems by Public Companies, the Internal Audit Office evaluates compliance with relevant laws and regulations, as well as operational cycles. Additionally, it formulates annual audit plans based on evaluation results each year.
Self-inspection	<ul style="list-style-type: none"> In 2022, 39 departments, 7 divisions, and 25 subsidiary companies of CSC Group compile self-assessment. These reports were then reviewed and consolidated by Internal Audit Office (IA) before being presented to President. To proactively respond to the changing environment, CSC adjusted the internal control system and operation in order to fully implement self- assessment.
Complaint Channels	<ul style="list-style-type: none"> 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 E-mail: IA00@mail.csc.com.tw Information is also available in the procurement inquiry (within the e-commerce system) for reporting incidents of malpractice, bribery, and fraud. The Internal Audit Office is responsible for accepting complaints related to improper conduct, such as graft, fraud, actions that harm the interests of the Company, and violations of company regulations. In 2022, a total of 21 cases were received, and they were all thoroughly examined and processed with the cooperation of all units. None of the cases involved significant drawbacks or resulted in serious losses to corporate profits.

+ For more details [Regulations and Implementation] https://www.csc.com.tw/csc_e/hr/csr/gov/gov5.htm

2.5.2 Internal Auditing and Correction

The Internal Audit Office (IA) is under the Board of Directors. The chief auditor reports audit performances to each supervisor on a regular basis and attends the board meeting to report the status of internal control. The purpose of internal auditing is 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: IA requested that related units revise 7 internal control procedures and control key points in 2022.



2.5.3 Information Transparency

CSC builds online filing system in accordance with Guidelines for Online Filing of Public Information by Public Companies of the Securities and Futures Bureau. Information is also disclosed on CSC website and is accessible through the shareholder service direct line, spokesperson, and designated media contact.

+ For more details [Information Transparency] https://www.csc.com.tw/csc_e/hr/csr/gov/gov8.htm

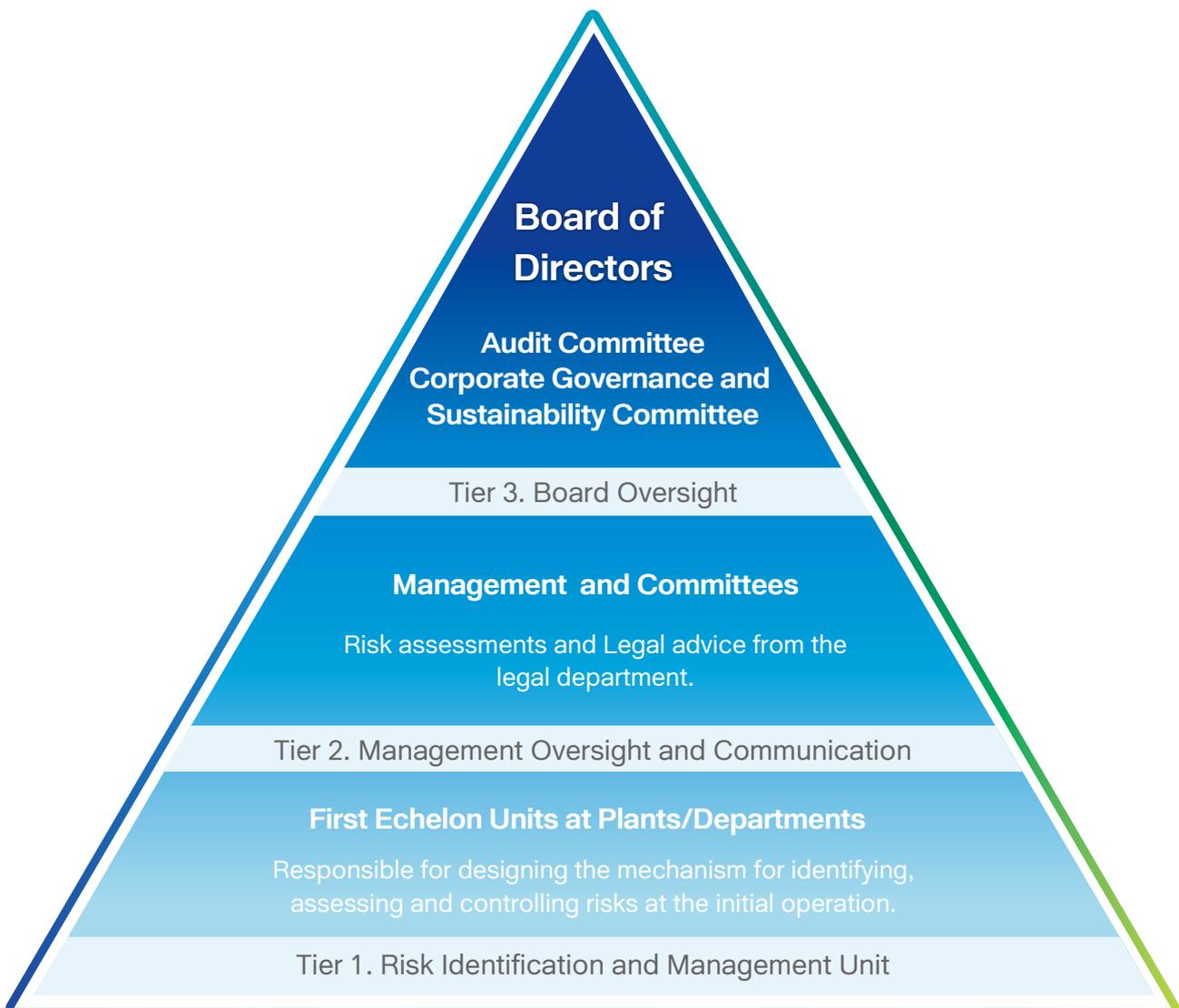
2.6 Risk Management

2.6.1 Operating System of Risk Management

- **Organization of Risk Management**

Risk control at CSC is divided into three levels with different mechanisms. The company adopts comprehensive risk control over all employees, but not assigns the task to one single department. In normal times control is executed level by level, including the identification, assessment and prevention of risk.

In the first half of each year and every year, the risk assessment information is regularly compiled and reported to the Corporate Governance and Sustainability Committee and Board of Directors.





With the aim of ensuring robust operations and sustainable development at CSC, the Board of Directors approved the formulation of the “Risk Management Policy and Procedures” as the highest guiding principle for risk management. According to the Risk Management Policy and Procedures, business units are in charge of identifying and assessing risk factors as well as drawing up relevant response strategies or measures, while the Board of Directors, management and functional committees are responsible for risk monitoring and control. Finally via regular reporting, relevant risks are controlled appropriately.

In 2022, CSC performed risk identification covering operational risk, financial risk, information security risk, environmental risk, and compliance risk, in the economic, environmental, and social aspects, and classified risks into five levels to prioritize risk management strategies. For the risk items identified and analyzed, personnel from the relevant departments is responsible for drawing up and implementing subsequent risk management strategies and plans.

The rapid global economic, social, and environmental changes have derived diverse and complex risks. The Company established an emerging risk management system and responds and manages potential threats in a timely manner through identification, assessment and response, and supervision mechanisms. After collecting information on internal and external emerging risks, we identified a total of 7 emerging risk issues in 2022 and management assessed the potential impact of each issue. Survey results show that the Company's top 3 emerging risks are low carbon production technology, carbon pricing controls, and information security; response measures have been formulated for the risks.

+ For more details [Risk Management Mechanism] https://www.csc.com.tw/csc_e/hr/csr/gov/gov12.htm

2.6.2 The Implementation of Risk Management

CSC's emerging risks, major risks and response measures are as follows: :

Emerging risks	
Aspect	Potential Risk
Low carbon production technology	Barriers to the development of proprietary low carbon processes and low carbon energy and carbon capture technologies
Control Strategies and Measures	

- **Low carbon processes and production technologies**

- (1) First develop production technologies that increase the use of scraps, and then increase the types and quantity of recycled steel supplied in the short-term.
- (2) The "Advanced Technology Industry-Academia Collaboration Project – Development of Low Carbon Iron Making Technology for Blast Furnace" was approved by the National Science and Technology Council in November 2022. The project will be implemented over a three-year period.
- (3) Low carbon raw materials that contain iron are recycled within the Company and used in the blast furnace process to reduce expenses from purchasing raw materials with low carbon emissions.
- (4) Search for multiple channels for purchasing raw materials, build partnerships, and sign contracts with stable raw material sources.
- (5) Evaluate the connection of electric arc furnace and basic oxygen furnace and plan the technology development schedule.

- **Low carbon energy and carbon capture technologies**

- (1) Plan and develop low carbon fuel application technologies.
- (2) Develop highly effective carbon capture technologies with low energy consumption in advance, and formulate a long-term carbon reduction plan for planning the installation of carbon capture equipment.
- (3) Work with other organizations in adopting commercial carbon capture technologies with a proven track record, and work with petrochemical companies for co-production between steel and petrochemical plants.

Emerging risks	
Aspect	Potential Risk
Carbon pricing	Collection of carbon fees/tax in Taiwan and overseas will put pressure on operations and weaken competitiveness of exports
Control Strategies and Measures	

- Continue to monitor implementation regulations and details for carbon fees collected by the government, as well as the reporting and taxation method and legislation process of the EU CBAM and US CCA.
- Plan the implementation of product carbon emission inventory and continue to develop and adopt low carbon/zero carbon technologies, continue to develop innovative carbon reduction technologies, and adopt feasible carbon reduction plans to mitigate the impact of carbon taxes and fees.

Emerging risks

Aspect

Potential Risk

Information security risk

As company operations become more dependent on digital systems, companies are more frequently being attacked and extorted by hackers, which not only impacts companies internally, but also impacts the brand's reputation and result in distrust from customers when personal data is leaked.

Control Strategies and Measures

- Implement end-point protection for important information assets and prevent advanced persistent threat.
- Block information security threats through intelligence update, and strengthen the network firewall and intrusion detection equipment.
- Continue to manage and patch vulnerabilities to reduce the chance of being attacked and prevent viruses.
- Periodically conduct social engineering drills to make employees more alert of phishing e-mails.
- Promote information security and organize training courses on information security to raise employees' information security awareness.

Economy/Governance

Aspect

Potential Risk

Finance

Inflation risk

Control Strategies and Measures

- Adopt natural hedging measures, review the company's foreign currency positions at all times, and make appropriate adjustments to ensure that sources of funds denominated in major foreign currencies are used for the procurement or payment of raw materials and equipment as far as possible.
- Lock in exchange rate costs by means of purchasing forward exchanges in advance according to payment schedules in the event of major capital expenditures, with the aim of reducing risks arising from exchange rate fluctuations. Inject capital by means of cash purchase, pre-purchase or bank financing in foreign currencies upon internal assessment of exchange rate trends when there is an evident need for capital for overseas investment projects.
- Hold foreign exchange group meetings to draw up strategies aimed at minimizing exchange rate risks in the event of severe exchange rate fluctuations, and engage finance professionals outside the company on an ongoing basis to analyze macroeconomic and foreign exchange trends to strengthen the company's foreign exchange management.
- Flexibly use short-term commercial paper based on capital requirements and cost of capital, in order to lower the impact of short-term fluctuations in cost of capital in TWD.

Economy/Governance

Aspect

Potential Risk

Intellectual Property Rights(IPR)

Trademark and copyright disputes

Control Strategies and Measures

- Establish an electronic trademark management system.
- Periodically convene cross-departmental trademark strategy meetings.
- Organize training courses or seminars on trademark and copyright.

Economy/Governance

Aspect

Potential Risk

Information Security

Ransomware Attacks

Control Strategies and Measures

- Deploy endpoint detection and response.
- Adopt two-factor authentication for virtual private networks.
- Build network packet encryption and decryption.
- Implement privileged account management.
- Ban private network access.
- Assess the purchase of web application firewalls.

Environment

Aspect

Potential Risk

Climate Change Transition

Carbon Neutrality

Control Strategies and Measures

- Strengthen communication with EPA by introducing examples of international carbon reduction regulations in pursuit of reasonable regulations.
- Continue to propose suggestions for reasonable regulations to the competent authorities in combination with the opinions of the peers and industry via TSIIA and the Chinese National Federation of Industries (CNFI).
- Establish the “Task Force on Energy Saving & Carbon Reduction and Carbon Neutrality” under the Corporate Governance and Sustainability Committee to lead company-wide carbon reduction policies and short-, medium-, and long-term carbon reduction strategies.

Society

Aspect

Potential Risk

Hazardous Events

Major Occupational Accidents

Control Strategies and Measures

- Improve employees’ safety knowledge and skills via training.
- Perform effectiveness audits to enhance audit capacity.
- Conduct reviews to ensure that improvement and corrective measures are constantly effective.

+ [For more details \[Completed Implementation of Risk Management information\]](#)

https://www.csc.com.tw/csc_e/hr/csr/gov/gov12.htm

3

Value Creation

CHAPTER

-
- 3.1 Operational Finance
 - 3.2 Product and Sales
 - 3.3 Product Quality and Innovation
 - 3.4 Green Development

Feature

Steady and Sustainable Operation,
CSC Improves Intellectual Property Management

3.1 Operational Finance

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

CSC makes short, mid, and long-term goals to reach financial stability. By fully implementing the action plans, CSC assists the Group companies in making financial plans and financial integration projects. In compliance with the mission of “the high value added steel mill”, CSC continues to raise product value and improve gross profit structure, with an aim to make both the profitability rate and sales ratio of the advanced premium steel over 20% in 2030.

3.1.1 Cost Control

Due to the effects of international political and economic turmoil, inflation, rising interest rates, and weakening demand on the steel market in 2022, CSC stepped up activities to reduce costs and increase profits, in order to mitigate the impact on operations. In light of the rapid changes in the industry prosperity and economy and to enhance competitiveness in response to dramatic changes in the competitive environment, in addition to the projects to "cost reduction and profit increase," we also plan to organize activities to "reduce controllable cost above" as a support measure in 2023, in order to strengthen constitution and increase overall synergies.

- Highlights in 2022: In response to the market rebound, CSC began implementing cost reduction and profit increase projects on a larger scale in June 2022 with the aim of boosting its profits. The number of cost reduction projects rose from 451 to 512 while the original target of 4.03 billion TWD was adjusted to 5.09 billion TWD, leading to 5.99 billion TWD in actual cost savings with a target achievement rate of 117.6% in 2022.
- 2023 Target: Cost reduction and profit increase projects will add up to 568 items, with the total cost reduction target amounting to 5.19 billion TWD.

Unit:100 million TWD	2019	2020	2021	2022	2023
Cost Reduction and Profit Increase Target	61.8	45.8	45.0	50.9	51.9
Cost Reduction and Profit Increase Performance	72.5	60.4	52.4	59.9	-

3.1.2 Business Performances

Operating Revenue

Unit: 1,000 TWD	2020	2021	2022
Sales Revenue	177,864,295	254,290,694	244,865,758
Service Revenue and Others	5,977,231	5,491,777	5,734,871
Total Operating Revenue	183,841,526	259,782,471	250,600,629

+ For more details [Financial Information] <https://www.csc.com.tw/csc/ss/fin/fin.html>

Operating Expense

Unit: 1,000 TWD	2020	2021	2022
Operating Costs	175,614,789	209,566,237	232,344,138
Cost of Goods Sold	170,497,942	202,666,679	228,460,142
Service Costs and Others	5,116,847	6,899,558	3,883,996
Operating Expense	7,490,152	9,512,321	7,957,924
Total Operating Expense	183,104,941	219,078,558	240,302,062

Net Profit

Unit: 1,000 TWD	2020	2021	2022
Operating Revenue	183,841,526	259,782,471	250,600,629
Profit before Income Tax	1,007,376	71,051,347	20,366,569
Net profit after tax	885,865	62,053,033	17,783,775

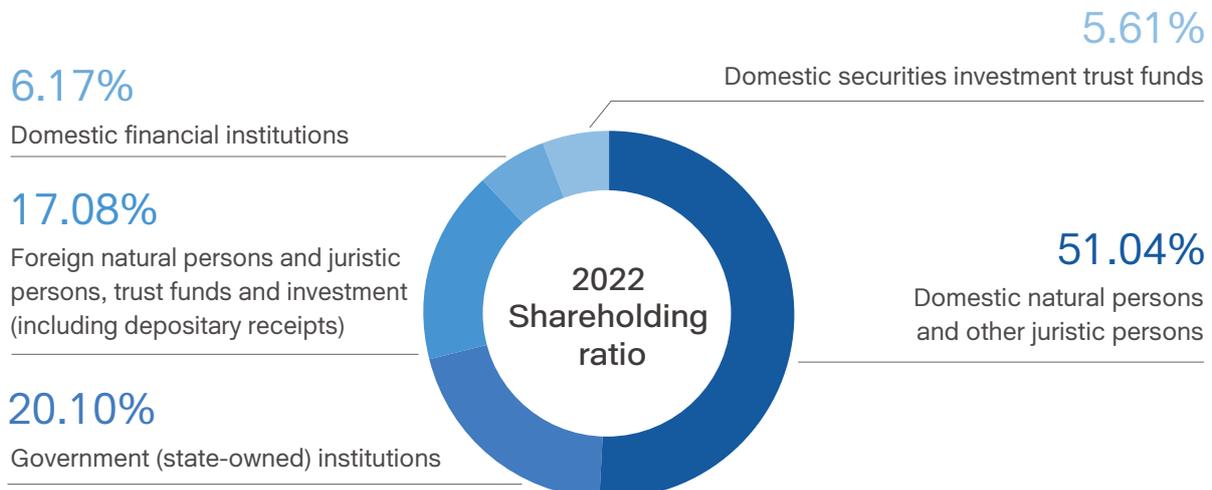
Surplus Distribution

In 2022, the amount of distributable earnings was 33.791 billion TWD, the Board of Directors adopted the resolution to distribute a cash dividend of 1.4 TWD per preferred share and cash dividend of 1 TWD per common share. Dividend distribution and return on investment over the past three years are as follows:

Unit: TWD	2020	2021	2022
EPS	0.05	4.02	1.15
Cash Dividend	0.3	3.1	1
ROE (%)	0.3%	19.32%	5.32%
P/E Ratio	424.8	8.27	27.77
P/D Ratio	70.8	10.73	31.94
Cash Dividend Yield (%)	1.41%	9.32%	3.13%

3.1.3 Shareholder Structure and Subsidies

Shareholder Structure (According to the information on the book closure date, August 1, 2022)



CSC will continue to adopt a steady dividend policy, and engage in exchanges and communication with investors during routine investor conferences and the Annual General Meeting each year, thereby strengthening investors' confidence in CSC's long-term investment value. Furthermore, CSC periodically discloses information on its financial position, business performance, and corporate governance on its website and the Market Observation Post System, fulfilling its responsibility and obligation of transparent company information to protect shareholders' rights and interests. Based on Article 10 of the Statute for Industrial Innovation, CSC's expenditure on R&D is credited against its income tax payable. In 2022, the amount of the tax credit applied for R&D expense was 29.12 million TWD.

+ For more details [Tax Policy] https://www.csc.com.tw/csc_e/hr/csr/in/in8.htm

3.2 Product and Sales

3.2.1 Major Products and Usage

The production of crude steel in 2022 was 8.44 million tonnes approximately, increasing by 1.25 million tonnes compared to 9.69 million tonnes in 2021 and the decrease rate is about 12.90%. The productivity per capita was 872.8 tonnes/man-year approximately.

Steel	Applications
 Plate	Shipbuilding, bridges, steel structures, oil country tubular goods (OCTGs), storage tanks, boilers, pressure vessels, die, truck chassis, general construction, offshore wind power, etc.
 Straight bars, bars in coil	Nuts and bolts, hand tools, loudspeaker parts, automobile and motorcycle parts, suspension spring, bearing, machinery parts, free cutting rod, gear, polished bar, etc.
 Wire rods	Nuts and bolts, steel wire and rope, P.C wire and strand, hand tools, welding electrodes, tire cord, bearing, free cutting rod, umbrella part, polished bar, etc.
 Hot rolled coils, plates, and sheets	Steel pipes and tubes, vehicle parts, containers, pressure vessels, building structures, hydraulic jacks, substrate for galvanized and coated steel sheets, hand tools, light shapes and formed parts, etc.
 Cold rolled coils	Steel pipes and tubes, steel furniture, kitchenware, home appliances, oil barrels, automobile panels and parts, enamelware, substrate for galvanized and coated steel sheets, hardware, etc.
 Electro-galvanized coils	Computer cases/parts and accessories, home appliance panels/parts and accessories, LCD TV back plates/parts, motor cases, construction materials, furniture hardware and components, motorcycle fuel tanks, etc.
 Hot-dip galvanized coils	Automobile panels and parts, home appliance panels/parts and accessories, computer cases/parts and accessories, PPGI substrate, construction materials, furniture hardware and components, etc.
 Electrical steel coils	Electric vehicles, electric boats, compressors, household appliances, electric machine tools, transformers, fluorescent ballasts, drones, spindle motors, servo motors, industrial motors, etc.

Production volume of major products

Unit: 10,000 tonnes	2020	2021	2022
Plate	86.5	92.4	92.1
Steel bar	45.8	66.6	53.6
Steel wire rod	123.4	129.8	112.9
Hot-rolled	270.8	234.1	211.3
Cold rolled	294.4	350.6	286.9
Slab	48.8	36.3	38.1
Cast iron	1.27	1.36	1.28
Total	871.0	911.2	796.1

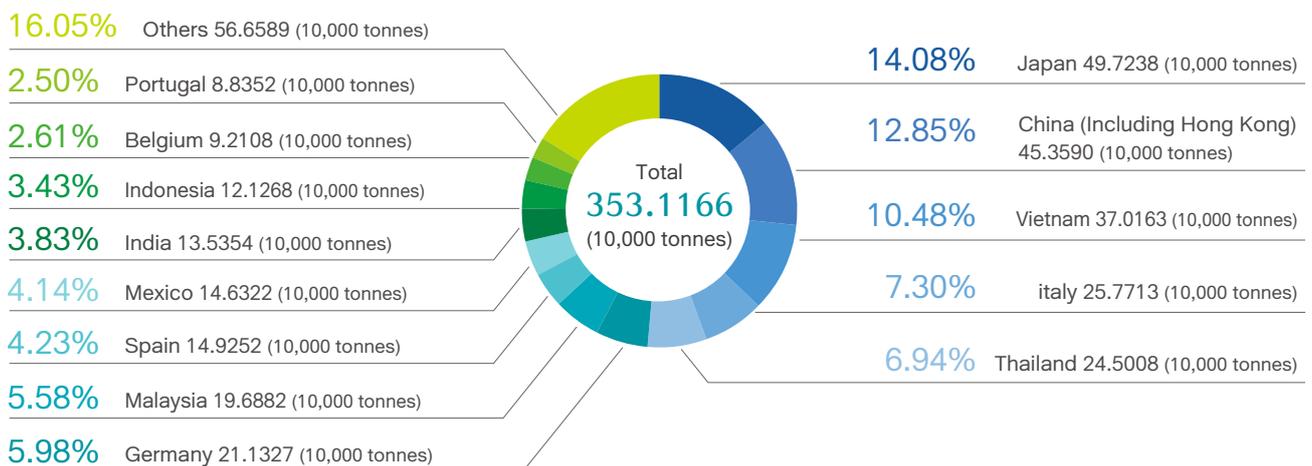
3.2.2 Product Sales

In 2022, the total sales of steel products were 8.59 million tonnes (Mt) and Cold-rolled/Coated products took up 33.25%, followed by Hot-rolled products accounted for 29.93%. Among the total sales, domestic sales accounted for 58.89% (5.06 Mt approximately), export sales accounted for 41.11% (3.53 Mt approximately), and the major exporting markets included Southeast Asia, Europe, Japan, and China.

Sales Distribution in 2022



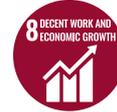
Export Sales Distribution by Foreign Regions



3.3 Product Quality and Innovation

Material Topic

3.3.1 Research Innovation



CORRESPONDING TAIWAN'S SDGS (T-SDGS):
CORE GOAL
8

2022 Highlights

- + Supply of steel with high recycled content: In response to the trend of brand manufacturers increasing the percentage of recycled materials used, the Company is actively engaging in development in its plant, and the actual amount used in 2022 was 8,277 tonnes. CSC once again obtained hot dip galvanized product certification SGCC RC20 and zinc plating product certification SECD RC12 in December 2022.
- + Development of Seam Free bar products, implementation of process improvement plans, development towards no cold forging cracks, promotion of use among many customers, and expansion of precision rolling technology to other product applications.
- + Development of hot-rolled thin steel sheet with high elongation for vehicle uses, HR500LA, by increasing the strength of steel, for the structural components of vehicles, as well as reducing the thickness of the steel sheet, to achieve the purpose of reducing the weight of vehicles.
- + Development of cold-rolled ultra-high strength martensite CR1300T with ultra high strength and excellent resistance against impact; applied to structural components of vehicles, such as bumper, with good strength, dimension precision, welding characteristics, and rolling forming.

Short-term goals (2023)	Mid-term goals (2025)	Long-term goals (2030)
→ Sales ratio of premium steel \geq 50.0%	→ Sales ratio of premium steel \geq 50.4%	→ Sales ratio of premium steel \geq 51.9%
→ New products: 30 items		

Policy or Commitment

CSC follows the concept of “five I”, Information, Imagination, Ideation, Innovation, and Implementation, to stimulate endless capability of innovation.

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

Product Development	developing high quality, high grade and new products with top specification and added value.
Product Application	developing advanced second and third processing technology to enhance the competitiveness of steel-using industry.
Process Development	setting up small quantity, low cost and low pollution but diverse production capability of pure refining and tight rolling technology.
Enabling Technology	integrating AI technology with ICT industry, implementing AI technology in steelmaking process, and establishing AI production and marketing system to advance CSC towards a sophisticated steel company.
Energy Conservation and Environment Protection	enhancing the efficiency of energy use and pollution prevention technology, furthering energy conservation and emission reduction to create a sustainable environment. The Company develops technologies for low carbon production and carbon fixation applications in coordination with the different carbon reduction paths. We also set KPIs and periodically review and move forward individual work items under key strategies.

In addressing climate change issues, CSC set numerous carbon reduction paths and achieved excellent performance in increasing scrap use in 2022. In response to the demand of computer brands on recycled steel materials, CSC obtained UL certification in November 2021, and obtained the SGCC RC12 (Recycled Content 12%; scraps used in steel making reaches 12%) certificate for hot-dip galvanizing, offering the environmental benefit of relatively low carbon emissions. CSC subsequently received purchase orders for over 2,600 tonnes. CSC also developed hot-rolled band production technology with high recycled content (RC20) in response to the needs of domestic optoelectronics companies, helping end-customers upgrade their products. In response to the trend of brand manufacturers making the CSR commitment to increase the percentage of recycled materials used, the Company is actively discovering market demand and engaging in development in its plant; the actual amount used in 2022 was 8,277 tonnes. CSC once again obtained hot dip galvanized product certification SGCC RC20 and zinc plating product certification SECD RC12 in December 2022. We expect to supply downstream customers with a wider variety of recycled steel materials.

📊 Action Plan

● New Product Development

A total of 30 development projects were completed in 2022, including high performance bridge steel, Seam Free products, X80 oil pipe solid solder wire, high strength steel for motor vehicles, high-spec annealing high permeability electrical sheet, steel for new generation compressor motor, and electrical sheet for high flux drone motor.

● Sales of Premium Steel

In order to implement competitive strategies through product differentiation, CSC includes the expansion of premium steel with “high technical content, high profitability, and high industrial benefit” as an important goal in the planning of its five-year business development strategies and reviews it annually on a rolling basis. Hence, this goal was listed as one of its business targets this year. Approximately 4.29 million tonnes of the premium steel was sold in 2022, accounting for 55.8% of sales; the annual sales target was not achieved (\geq 4.34 million tonnes), but the target percentage was achieved (\geq 50%), concrete results include: Expand the sales of CE Marking certificated products, including the specification of S355JR and S355J2+N, into the steel plate market of Europe, which is the first bulk purchase of the steel plate with the CE Marking certification; the development of X80 soldering wire ER80S-Ni1M for oil pipe welding in extreme weather; the new product development of hot-rolled SK95 high carbon tool steel for the application of electric pruning shears and cold-rolled knives; cold rolled ultra-high strength steel CR1300T for motor vehicle bumper; top-grade ES has become the number one choice of major motor vehicle manufacturers (including Tesla, Audi, and VW) for motors of new energy vehicles. The continued promotion of premium steel products will not only consolidate the Company's technological foundation for sustainable development, but also guide the direction of product differentiation. The quantity and percentage of premium products in recent years is as follows.

Year	2018	2019	2020	2021	2022
Quantity (10,000 tonnes)	540.6	522.8	477.2	467.8	429.2
Ratio (%)	46.6	48.6	46.5	56.1	55.8

Note: Figures from 2018 to 2020 are presented in terms of order quantity, whereas figures in 2021 are presented in terms of sales quantity in line with the promotion of advanced premium steel in 2021.

● Process Refinements

To enhance product competitiveness and client value, CSC continues to follow the strategy of improving “Quality, Grade and Variety”, as these dimensions can enhance the upgrade of make-to-order products. Improvement of important process technologies in 2022 include cold rolled high carbon steel casting technology; improvement of crude steel quality; implementation of AI to predict and give warning of mechanism property rejection of TMCP plate products; setup of the production capability of hot-rolling ultra-high pressure scale breaker equipment to improve surface quality; implementation of AI to predict mechanical properties and advise on production parameters of hot-dip galvanized high strength dual-phase steel.

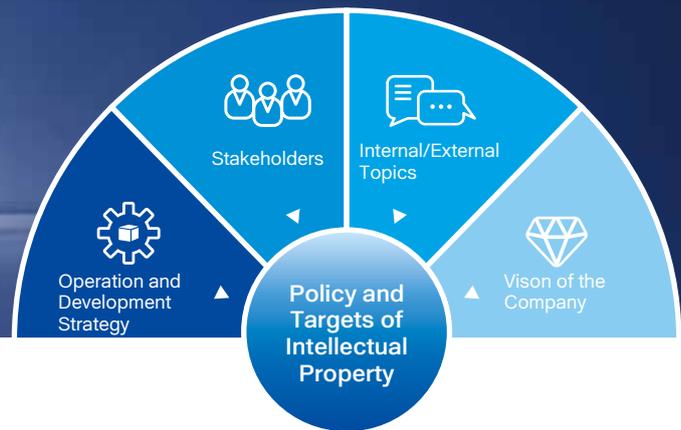
Feature

Steady and Sustainable Operation, CSC Improves Intellectual Property Management



Laying the Foundation for Sustainability, Strengthening the Connection Between Intellectual Property Management and Business Development

CSC is actively strengthening intellectual property management, and continues to improve management measures for the acquisition, protection, maintenance, and use of intellectual property to lay a solid foundation for the Company's sustainable operation.



+ For more details [Intellectual Property Management]
https://www.csc.com.tw/csc_e/hr/csr/in/cm4.htm

Improving the Management System, Establishing a Comprehensive Intellectual Property Management System

CSC obtained patent and trade secret Grade A certification of Taiwan Intellectual Property Management System (TIPS) in 2021, and continued to enhance intellectual property management and include trademark and copyright as the management targets. We compiled an intellectual property management manual that combines TIPS requirements and our practical operations as the basis for system operations. We implemented and summarized related management measures and internal systems to properly link them together, and gradually developed a comprehensive intellectual property management system that covers patents, trade secrets, trademarks, and copyright.

Improving Intellectual Property Literacy, Promoting Intellectual Property Concepts

To improve employees' intellectual property rights literacy and instill them with the right concepts, the Company included intellectual property training into new employee training courses. Courses are offered according to employees' needs for performing their duties, and e-Learning materials are prepared in response to the pandemic. Concepts of intellectual property are also promoted via interactions during live streaming. This year we also invited external experts and scholars in the field of intellectual property to organize a total of 27 speeches or training courses, and 2,537 participants completed the training courses and promotion activities.

Intellectual Property Promotion Results and Benefits

1. Protection of R&D results

In the Statistical Rankings for Patent Applications and Grants in Taiwan announced by the Intellectual Property Office, Ministry of Economic Affairs in 2022, the Company ranked in 10th in terms of patent applications, 10th in terms of patents granted in the top 100 domestic patent applicants, and being top 10 for the 9 consecutive years. CSC has obtained 2,706 patents in Taiwan and 168 patents overseas, and continues to protect nearly 10,000 trade secrets. Categories of patented technologies are concentrated in the Company's business development highlights, and covers premium steel products, AIoT, green energy and carbon reduction, and energy conservation and environmental protection, focusing on core technologies and improving the Company's patent portfolio.

In the National Invention and Creation Award organized by the Intellectual Property Office, Ministry of Economic Affairs, the Company's patents have won 3 gold medals, 9 silver medals, and 1 Industry Contribution Award recognizing the Company's results in the promotion of intellectual property. These awards show that the Company's innovation and R&D capabilities have been recognized by the government.



Taiwan Intellectual Property Management System (TIPS) Certificate

2. Reduction of operational risks

The Company completed the establishment of the "Trademark and Copyright Implementation Guidelines," and also established mechanisms for taking inventory of trademarks and copyright. With regard to trademark, the Company established a Trademark Management Committee responsible for planning domestic and overseas trademark strategies, and also discusses trademark related issues. With regard to copyright management, the main management targets during the initial stage are "internal publications prepared by the Company's editors" and "works published by employees", enhancing the internal review mechanism to lower the risk of infringement.

3. Utilizing the value of intellectual property

Take an inventory of non-core patents that do not affect the Company's competitiveness, arrange suitable licensing plans, and actively search for subjects to license the patents to increase operating revenue. There are currently 48 patents being licensed.

4. Certified the Taiwan Intellectual Property Management System (TIPS) certification.

CSC has successfully accomplished TIPS certification process without any nonconformities for two consecutive years, and is the one of the few companies that obtain certifications for patents, trade secrets, trademarks, and copyright, which cover all aspects of TIPS, in recent years, showing that the Company already has a well-rounded management system.

Material Topic
3.3.2 Quality Control



CORRESPONDING TAIWAN'S SDGS (T-SDGS):
 CORE GOAL

12

2022 Highlights

- + Completed the re-certification of the JIS Mark to ensure the smooth sales of 1 million tonnes of steel products each year.
- + Our galvanized steel products SGCC RC20 and SECD RC12 obtained UL 2809 Recycled Content Validation, fulfilling our commitment to ESG by providing customers with better material choices..

Short-term goals (2023)	Mid-term goals (2025)	Long-term goals (2030)
→ Obtain product quality certificates used in different countries \geq 8	→ Obtain product quality certificates used in different countries \geq 9	→ Obtain product quality certificates used in different countries \geq 10
→ Certified steel grades for Recycled Content Validation \geq 4	→ Certified steel grades for Recycled Content Validation \geq 6	→ Certified steel grades for Recycled Content Validation \geq 8

Policy or Commitment

CSC adopted the international quality management system IATF 16949 and ISO 9001 to establish “Steel Product Quality Management System”, ensuring that all processes within the system are effectively executed, while continuously improving the management process and product quality.

CSC complies with the quality policy of "engaging in customer-oriented R&D and innovation to provide high quality eco-friendly products and fulfill our corporate social responsibility," and gathers together production, marketing, R&D, and technology resources under the business strategies of "developing advanced products, high-efficiency processes and product application technologies, and implementing smart manufacturing to increase the value of the steel industry chain" and "continue to reduce cost and shorten the time to delivery, and improve energy conservation and environmental protection." We focus on the product strategy of "higher grade, wider variety, and higher quality" so that CSC products will become higher-end and more refined to achieve sustainable development. CSC upholds the belief that "customers' perception of quality includes variation, and accuracy is equally as important as precision," and continues to improve customer satisfaction and enhance CSC's overall competitiveness through multi-stage, multi-level technical services.

Action Plan

Quality Improvement and Cost Control

Through the PDCA cycle as a core tool, with the experimental planning method, Taguchi method, and 6-sigma method used alternately to work out the cause analysis and the data stratification, CSC plans the improvement countermeasures matching the current situation and develops improvement project system. The flow chart of CSC's quality management system is as below:

Quality Management System (QMS)



● Product Certification

- ▶ CSC has obtained certifications used in Japan, Malaysia, India, Thailand, Vietnam, Saudi Arabia, the United Kingdom, and the European Union, with 498 steel grades of plate, bars and wire rods, hot and cold rolled coils, and coated products. This enables us to provide overseas customers with compliant products and is our niche for smoothly importing products, enhancing the competitiveness of our exported steel products. Furthermore, we obtained the new UKCA certification in 2022 in response to Brexit, and ensured that our products can continue to be smoothly sold to Europe, which provided even greater benefit in securing customer orders and expanding markets.
- ▶ For years CSC has provided galvanized steel products to customers for manufacturing the casings for electronic products. After SGCC RC12 steel products obtained UL 2809 Recycled Content Validation in November 2021, CSC became the first steel company in the world to obtain UL 2809 certification, and continued to develop SGCC RC20 and SECD RC12 steel products with even higher recycled content in coordination with the eco-friendly strategy of consumer electronics brands. CSC once again obtained UL 2809 Recycled Content Validation in December 2022 and not only fulfilled our commitment to ESG, but also provided customers with better choices. In the future, we will continue to actively develop production technologies with higher recycled content, and continue down the path towards a circular economy.

● Customer Technical Service

- ▶ The concept of CSC's customer technical service is to provide the knowledge of product application and solve customer's problems as well as to request CSC on behalf of customers to develop and supply product to meet customers' requirement.
- ▶ From the aspect of the metallurgical technical service, CSC participates in customer's product design and development as early as possible to grasp the quality requirements of the material, thereby to expand the supply of niche products and enhance the customer relationship. Besides focusing on the implementation of "during-sales" and "after-sales" technical services by the front technicians, CSC also moves forward the service to the "pre-sales" stage. In addition, due to the deep and wide coverage of technical services, the depth of technical service is extended to the factory support, and even the research expert level.

2022 Highlights

- + Completed the re-certification of the JIS Mark and added two grades of steel products with recycled content in the UL 2809 certification.
- + Help customers improve process technologies and resolve technical issues with materials and processing, of the 215 cases, 7 were related to product safety.
- + We continue to meet market needs by obtaining certifications for steel products for motor vehicles. In 2022, we obtained 6 certifications for steel in motor vehicles. Cumulatively, we obtained certification from 27 motor vehicle manufacturers and 268 motor vehicle product certifications.

+ For more details [Quality Control] https://www.csc.com.tw/csc_e/hr/csr/in/cm3.htm

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

Material Topic

3.3.3 Hazardous Substance Process Management of Products



CORRESPONDING TAIWAN'S SDGS (T-SDGS):
CORE GOAL

3

2022 Highlights

- + Passed the annual evaluation for the IECQ HSPM QC 080000 system.
- + Assisted customers in inspecting hazardous substances and issued certificates, eliminating barriers with customers clearance; 146 times in total.
- + Offered the online course "hazardous substance process management" for personnel in response to the pandemic, meeting requirements of the BSI external evaluation and IECQ system.

Policy or Commitments

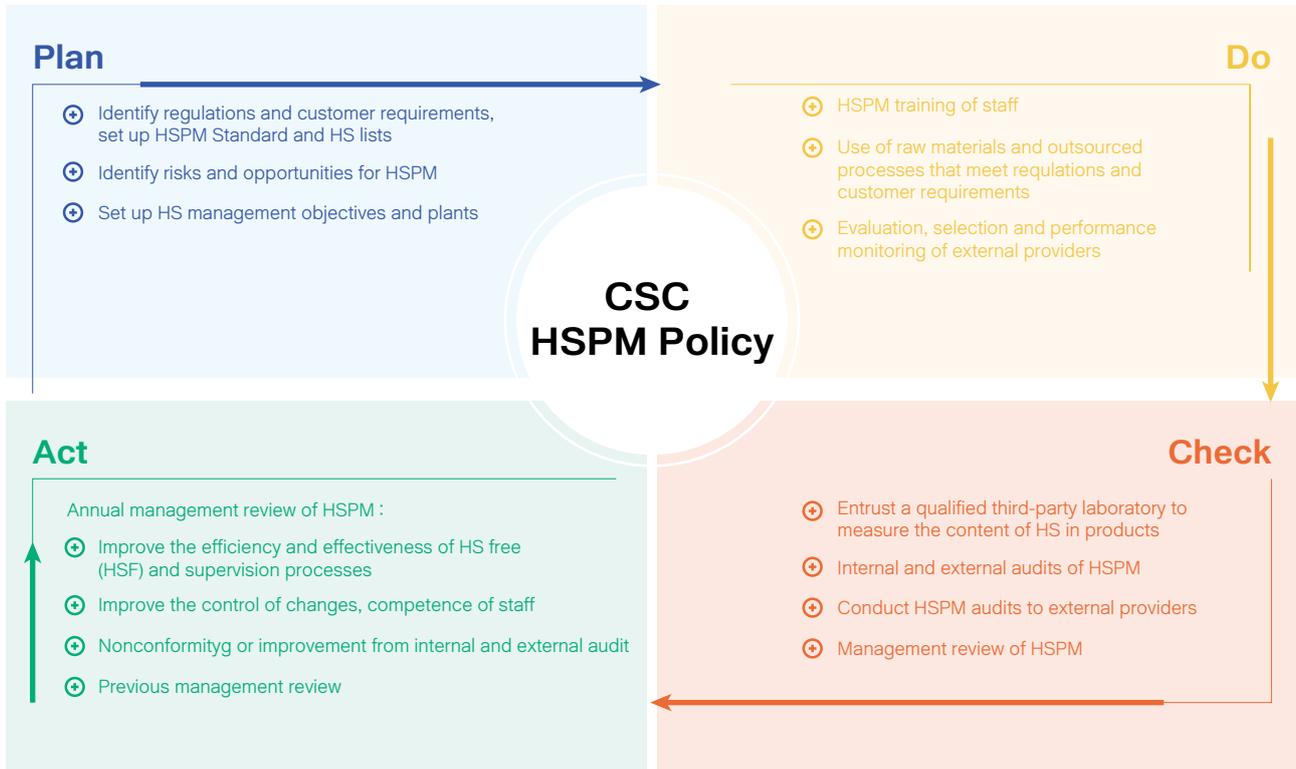
Hazardous Substance Process Management (HSPM) is a part of achieving sustainable development, and CSC thus established a hazardous substance process management system through the implementation of IECQ HSPM QC 080000. From raw material selection to new product development and design, CSC monitors restricted substances that have a significant impact on the environment to provide high quality eco-friendly products that comply with international specifications and meet customer requirements.

Short-term goals (2023)	Mid-term goals (2025)	Long-term goals (2030)
<ul style="list-style-type: none"> → Compliance of steel products with regulatory requirements on hazardous substance content (including products from outsourced processes) reaches 100%/year → Completion of training on the hazardous substance management system \geq 88% 	<ul style="list-style-type: none"> → Compliance of steel products with regulatory requirements on hazardous substance content (including products from outsourced processes) reaches 100%/year → Completion of training on the hazardous substance management system \geq 89% 	<ul style="list-style-type: none"> → Compliance of steel products with regulatory requirements on hazardous substance content (including products from outsourced processes) reaches 100%/year → Completion of training on the hazardous substance management system \geq 90%

Internal and external audits and management reviews on the IECQ HSPM QC 080000 Hazardous Substance Process Management System are conducted regularly each year to realize ongoing improvements.

CSC carried out risk management and assessment for materials and compiled a control list of hazardous substances. Suppliers are required to provide a hazardous substance statement or hazardous substance analysis report, depending on the assessed risk level during raw material procurement. This controls hazardous substances from the source (raw materials, processes, quality, and packaging), which increased customer satisfaction and enabled us to maintain zero customer complaints in hazardous substance process management. Furthermore, we periodically organize training on the hazardous substance process management system to ensure HSPM ability.

CSC has further formulated regulations regarding customer complaints and claims, and offers customers' feedback on CSC's steel products to the factories. An annual customer satisfaction survey and research plan are conducted every year, and a written summary report is submitted.



📊 Action Plan

▶ Product Life-Cycle Perspective Control

We avoid using raw materials that contain hazardous substances during the procurement and product and development stage, and reduce alloys that contain SVHC (Substances of Very High Concern) in the manufacturing process. As for outsourcing, the contracts ensure that products comply with international regulations and meet customer requirements. In the material selection stage, restricted substances that have a major impact on the environment, such as: the EU RoHS, REACH-SVHCs, packaging regulations, Germany's AfPS GS PAHs, California Proposition 65, Montreal Protocol on Substances that Deplete the Ozone Layer, and restricted substances of international motor vehicle manufacturers, are all closely monitored and included in the scope of control. There were no incidents of non-compliance concerning the health and safety impacts of products and services in 2022.

In terms of outsourcing and management of raw material suppliers, CSC requires contractors and raw material suppliers to comply with hazardous substance restrictions of CSC or its customers and provide a "Statement of Compliance with CSC Restriction of Hazardous Substances." This reduces hazardous substances during early stages of the PLC, and extends CSC's restriction of hazardous substances to contractors and raw material suppliers, ensuring that CSC's products do not contain hazardous substances from the source.

CSC included the indicator "Hazardous substance content of steel products (including products from outsourced processes) meets the statutory conforming rate" as an internal management goal for control and tracking, and conforming rate of implementation results in 2022 was 100% (the conforming rate has been 100% every year since 2013). To ensure that products comply with international regulations and customer requirements, CSC sends samples of steel products and low risk raw materials to a third party external verification institution that complies with IEC 62321 and obtained ISO 17025 certification for TAF laboratories, using objective data to prove that CSC's products meet requirements. This fully shows that CSC's products do not contain hazardous substances, and the quality of all products comply with international regulations and meet customer requirements.



▶ **Training Programs**

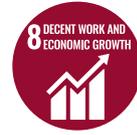
CSC periodically offers related courses for employees to understand changes in international regulations on green products, so as to meet HSF requirements and the new version IECQ regulations. We offered the course "IECQ HSPM QC 080000 Hazard Substance Process Management System" to ensure that employees understand regulations and development trends related to hazardous substances and etc. Actual completion of hazardous substance management system training in 2022 was 91.86%, achieving the goal set for 2022.



Material Topic

3.4 Green Development

SUSTAINABLE DEVELOPMENT GOALS

CORRESPONDING TAIWAN' S SDGS (T-SDGS) :
CORE GOAL

7 · 8 · 12

2022 Highlights

- + Total installed capacity of the CSC Group's solar rooftop PV system was 92.4MW, energy generation in 2022 Q4 was 22 million kWh, and cumulative energy generation for the year was 105 million kWh.

Policy or Commitment

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

Short-term goals (2023)

- The investee company Sing Da Marine Structure Corporation continues to provide underwater foundation for offshore wind farms and participates in offshore wind farm developers' bidding process.
- Maintain stable and efficient power generation on the rooftop solar power plant; the average efficiency target > 80%.
- Establish the intelligence techniques for solar power plant operation and maintenance, and keep the annual decline rate of system performance below 1%.⁽¹⁾

Mid-term goals (2025)

- The investee company Zhong Neng Offshore Wind Farm completes grid-connection and begins power generation.
- The investee company Sing Da Marine Structure Corporation supplies underwater foundations for offshore wind power zonal development, and improve its welding and production model to reduce the production cost of underwater foundation semi-finished products and parts. The company is searching for strategic partners to increase its capacity to earn underwater foundations orders.
- With the aim of adding 3-5 MW PV systems each year, CSC is expected to reach a total installed capacity of 100 MW before 2025.
- In response to the renewable energy policy of the government to obtain a license for selling green energy; conduct green energy trade in response to the application of renewable energy certificate.

Long-term goals (2030)

- Promote the application of technologies such as energy storage systems, intelligent grids, and PV optimizers based on policies and market conditions.
- Sing Da Marine Structure Corporation continues to reduce the production cost of underwater foundations and enhance its competitiveness, so that large and different forms (floating) of underwater foundations can be supplied locally.
- Increase the percentage of recycled or green raw material use, and participate in investments to obtain such materials when necessary.

Note: 1. Based on the 2019 construction site.


Material Topic

3.4.1 Green Products

- + CSC's green products are finished products with external energy saving and carbon reduction benefits. As an upstream manufacturer of the industry, CSC plays an important role in developing and expanding the supply of green steel products and driving the green supply chain.

▣ Action Plan

CSC's green products primarily refer to its finished products with external energy saving and carbon reduction benefits, which include (1) high- strength or functional steels for automobiles, boats, buildings, and electric vehicles; (2) Steel with fewer reprocessing procedure, such as non-Lead patenting steel, steel requiring no further quenching, wire requiring no further drawing annealing; (3) steel with higher endurance, such as high-temperature endurance, anti-corrosion, wear resistance, and plating steel.

▣ Implementation Results

In 2022, 3.2676 million tonnes of green steel products were sold to help reduce carbon emissions which summed up to an estimated 6.0664 million tonnes^{Note}.

→ **Wear-resistant thick plate:**

The AR400F abrasion-resistant steel plate is a product that exhibits full-thickness hardening and -45°C extreme low-temperature toughness. It is suitable for use in mechanically demanding structures that require high wear resistance and high impact strength, particularly in cold regions. Typical applications include mining truck beds, excavator buckets, and similar equipment, where it provides excellent resistance to wear and extends the lifespan of the machinery.

→ **High torque bit products:**

CSC developed high-torque new bit products in collaboration with customers. The QT heat-treated bits feature higher torque, improved wear resistance, and longer fatigue life, effectively enhancing the product lifespan of end users. It aligned with the environmental sustainability and energy-saving trends.

→ **Top grade thin-gauge electrical steel:**

It reduces motor temperature rise, reduces motor weight, saves materials, and increases motor efficiency, and is thus extensively applied in the manufacturing of electric vehicles and compressors.

→ **High strength, cold rolled, and hot-dip galvanized steel for motor vehicles:**

It can elevate the structural safety, reduce weight, improve fuel efficiency and save fuel consumption for automobiles.

Note: The calculation of coefficient (average life-cycle carbon reduction coefficient per ton of steel) for external carbon reduction performance is based on the Japanese Steel Alliance and Economic Institute, ITRI, and CSC Green Energy & System Integration Research & Development Department. The coefficients adopted by CSC, include high-strength steels for ships, steels requiring no further quenching and tempering, other steels, etc. The carbon reduction benefit is calculated as the sum of the order quantity of 2022 for each item multiplied by the corresponding coefficient.



Material Topic

3.4.2 Green Industry Development



CSC is devoted to improving environment and innovating technology for green energy in order to win in the trending global competition of low-carbon economy. Focused on developing and popularizing various energy-saving products, CSC achieved considerable results in environment protection, resource recycling, and energy integration.

● Offshore Wind Power

With a view to making contributions to environmental sustainability in line with the government's green energy development policy, CSC has engaged in areas related to steel for offshore wind power installations and those in which it is capable of engaging through a series of initiatives, including setting up SDMS, a subsidiary of CSC, to engage in the manufacture of underwater foundations; establishing CSPC, another subsidiary of CSC, to develop Zone 29 Offshore Wind Farm and participate in Taiwan International Windpower Training Corp. (TIWTC) led by Taiwan International Ports Corp.; facilitating wind turbine system suppliers through CSPC to build a local parts supply chain; and supporting the development of a local supply chain for underwater foundation parts through SDMS to seize business opportunities in green energy.

📊 Action Plan

Since offshore wind power is a renewable energy industry with the highest demand for steel, CSC not only produces high-quality steel for use in wind farms, but also invests in SDMS and CSPC to expand its business, funds the establishment of TIWTC to nurture related talents, and utilizes its core competencies to support the cultivation of Taiwan's offshore wind power industry chain. CSC realizes the development of local wind power professionals and technological upgrading in local industries through collaboration with local supply chain manufacturers and the combination of related experience and technical resources at home and abroad, thereby promoting the development of the local economy.

In order to implement the government's localization policy of offshore wind power industry, CSC promoted the localization policy of offshore wind farm through the efforts of CSPC and SDMS to reach the achievements as below:

→ Localized production of wind turbine components

CSC and Copenhagen Infrastructure Partners (CIP) jointly invested in CSPC to promote the localized production of wind turbine components. With the advancement of localized supply, CSC expects to provide wind turbine components through local Taiwanese suppliers. At the same time, CSC pursues development with a pragmatic approach based on its existing core competencies and seeks collaboration with experienced overseas manufacturers in wind power components and parts when needed, such as nacelle cover and spinner cover

(Atech Composites and Fassmer), towers (Chin Fong Machine and CS Wind), transformers (Shihlin Electric and ABB), and switch (Shihlin and Mitsubishi) etc. in wind turbine components.

→ Jacket foundation supply chain

Jacket foundation facility accounts for a higher proportion of total costs and has stricter quality requirements. Therefore, SDMS collaborates with well-known foreign steel construction experts to established production line in Xing Da Harbor. CSC is also dedicated to local manpower to provide consultancy to and support downstream manufacturers to establish a complete supply chain. SDMS is expected to achieve continuous production and match the jacket foundation demand for the domestic offshore wind farm developers.

● Solar Photovoltaics (PV)

CSC actively responded to the renewable energy policy. In October 2016, CSC combined companies within the group to establish the CSC Solar Corp., which is responsible for promoting the development of CSC's solar power generation business.

At present, CSC Solar has established a professional solar photovoltaic team as a project system supplier, providing customers with stable power generation efficiency and comprehensive services. As of the end of 2022, CSC Solar has installed a capacity of approximately 62 MW on the roof of CSC's plant, which is currently the largest rooftop solar photovoltaic project site of a single company in Taiwan. Since September 15th 2017, the cumulative installed capacity of the solar photovoltaic system by CSC Solar at the CSC Group (14 companies including CSC, Dragon Steel, Chung Hung Steel C.S. Aluminium Corporation, China Steel Machinery Corporation, CHC Resources Corporation, China Steel Chemical Corporation etc.) had reached 92.4 MW, and the cumulative power generation had reached about 430 million kWh. In the future, CSC Group can contribute at least 105 million kWh of green electricity and 53,000 tonnes of CO₂ reduction annually.

📊 Action Plan

The relevant development strategies of CSC Solar Corp. from the short-term to long-terms and technical regulations are set out as follows:

▶ Short-, medium-, and long-term strategies:

- + Improve the power generation efficiency of photovoltaic power plants, strengthen the operation and maintenance capabilities of PV power plants, and create stable profits.
- + CSC prudently promotes the application of green power generation technology to create an advantage through differentiation.
- + In line with Taiwan's renewable energy policy, CSC identifies its operational directions and goals through SWOT analysis, steadily expands into rooftop solar photovoltaic project sites in CSC Group's associated industry chain, and waits for opportunities to penetrate into ground-mounted solar photovoltaic power plants.
- + CSC actively transformed Type III renewable energy facility to Type I renewable energy facility in order to obtain a license for selling green energy. CSC also applied for a green energy certificate to conduct green energy trade, boosting green industry market.



▶ R&D services:

- + CSC established the integrated intelligent operation technologies, including spectrum analysis, infrared temperature measurement, serial measurement of voltage and current, etc. to detect the abnormality. The average performance ratio (PR) is expected to exceed 80% while boosting revenue by 3~5%.
- + CSC implemented project category system and cleaning technology to ensure the degradation rate of the PV system is below 1%.
- + CSC implemented PV anti-corrosion inspection technology, which includes anti-corrosion design, corrosion inspection on the structure, and maintenance/evaluation, etc.

● Green Transportation with Low-carbon Light Rail Transit

“Rail transit” is one of the best transportation solutions for energy saving and carbon reduction. CSC participates in public construction, upholds corporate responsibility, and carefully evaluates the participation in rail projects in accordance with policies. CSC cooperates with local governments to provide citizens with a light rail transit system that is safe, comfortable, convenient, and environmentally friendly. For example, the rolling stock of Danhai/Ankeng light rail transits are designed and manufactured by Taiwan Rolling Stock Co., Ltd in cooperation with foreign manufacturers. With a gradual increase in the proportion of localization and the establishment of light rail transit procurement guidelines led by the Railway Bureau, these projects create new opportunities for the future design and manufacture of light rail rolling stock.

- + For more details [Green Industry Development]https://www.csc.com.tw/csc_e/hr/csr/in/in7.htm

1 Industry Chain Improvement

CHAPTER

- 
- 4.1 Supply Chain Management
 - 4.2 Industry Upgrade
 - 4.3 Domestic and International Associations
 - 4.4 Circular Economy

4.1 Supply Chain Management

CSC's supply chain management can be categorized by supplier types as follows: Equipment and Material Procurement, Transportation, Security and Contractor, and each of the aforementioned supplier is managed by a different responsible department. The management and assessment of suppliers are handled by each division in accordance with the provisions of the CSC's quality control regulations, the "Steel Quality Manual", of which coverage controls products and services provided to external parties as well as relevant processes.

Furthermore, CSC established the "Supplier Code of Conduct" and requires qualified suppliers to comply with the code of conduct.

In order to enhance supply chain management, the following anti-corruption clause is stipulated in the contract signed between CSC and vendors in its supply chain: "The vendor guarantees that at the tender price will not include bribes, gifts, commissions, remunerations, gratuities or other improper benefits, and the vendor guarantees that no bribes, gifts, commissions, remunerations, gratuities or other improper benefits will be paid to managers, employees, part-time employees appointed by CSC, or their spouses, immediate family members or consultants in connection with the tender." In case of any violation, the vendor shall be liable for all damages. In the event of any serious violation, CSC may cancel or terminate all other contracts signed with the vendor. CSC shall suspend its dealings with vendors that violate ethical principles and urge these vendors to make improvements before resuming its dealings with them. According to statistics for 2022, the Company suspended dealings with 10 vendors for violating ethical principles according to the Purchasing Department Directions for Violation of Integrity Principles by Vendors.

The hotline for reporting incidents of corruption, bribe and fraud is specified in Article 13 of the "Supplier's Quotation Notice" to be +886-7-8021111 #2191.

+ ([URL: https://cs.csc.com.tw/mqz/open/mqzp2](https://cs.csc.com.tw/mqz/open/mqzp2))

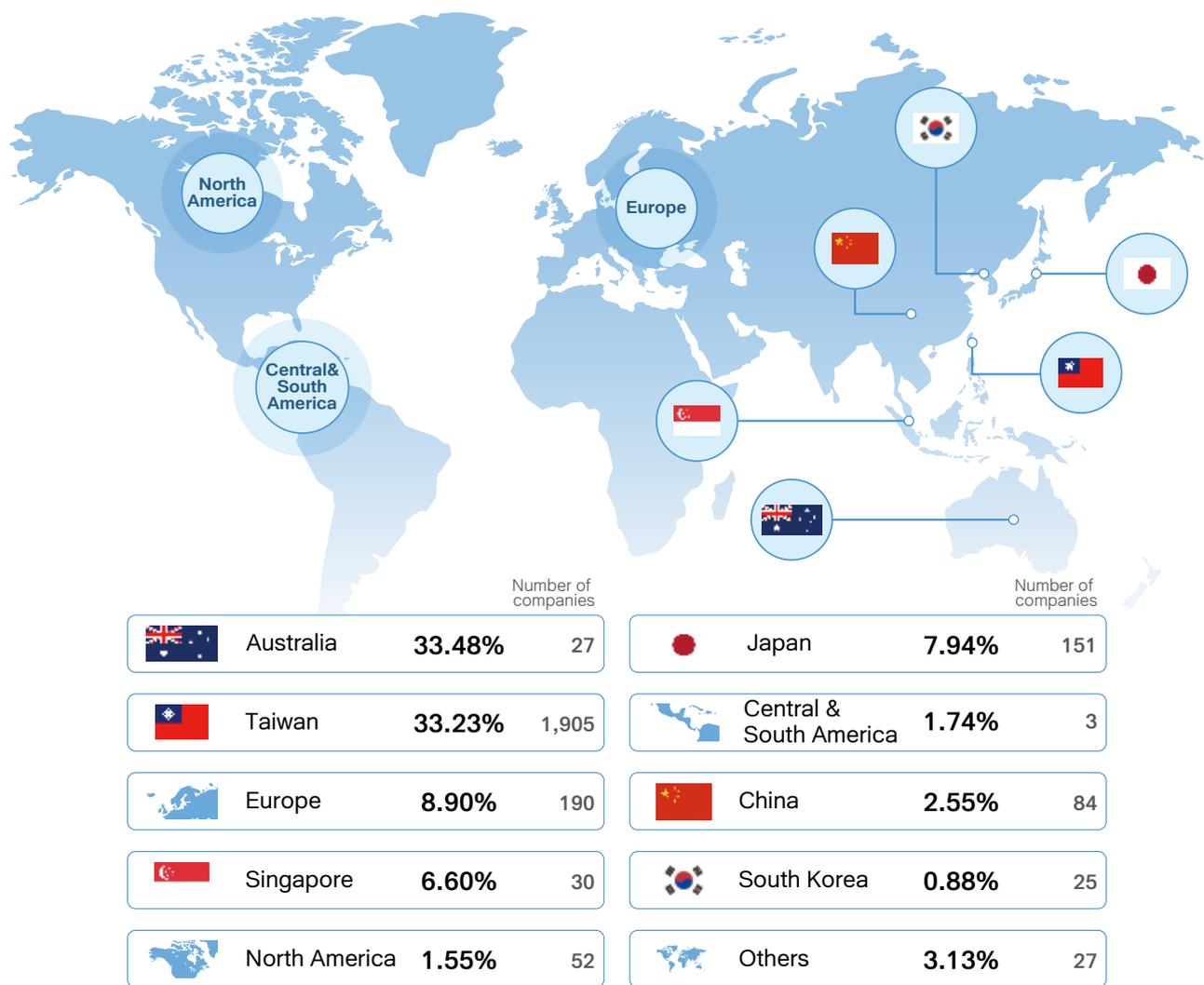


4.1.1 Equipment and Material Procurement

Countries or any mines controlled by armies or rebel groups, in its products or packing. Through enhancing supply chain management, CSC effectively identifies and traces material sources to eliminate the use of conflict minerals. Any mine that is suspected to be involved in conflict minerals would be disregarded in investment evaluation. CSC also pays attention to human rights conditions in the countries providing equipment and materials and adjusts procurement decisions accordingly. The tender instructions and contract terms stipulate no bribery, no infringement, and environmental and safety in-plant regulations.

In accordance with the “Occupational Safety, Hygiene, Pollution Prevention of Procurement and Contracting Rules”, suppliers were evaluated for indirect risk on environmental aspects for six types of raw materials in 2022. The results were that all suppliers had risks below moderate level except for one with high indirect risk. CSC’s relevant units will conduct joint on-site audits and visits to ascertain the supplier’s improvement.

Procurement of Raw Materials and Equipment by Country, 2022



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

4.1.2 Transportation

CSC has a total of 50 business partners associated with the AEO supply chain spanning across seven industries, including manufacturing; import and export; customs brokerage; sea freight forwarding, freight forwarding or shipping agency; warehousing and storage; and road transportation.

While exercising strict control over risks associated with transportation suppliers, CSC not only requires transportation suppliers to participate in and obtain ISO 45001 certification, but also steps up accident risk management during transportation in order to minimize the risk of occupational accidents.

CSE holds environmental control-related certificates for its own ships. In addition, CSE has required all its self-owned and chartered ships to switch to low-sulfur fuel for the entire voyage according to the International Maritime Organization (IMO) regulations since 2020 for the purpose of complying with environmental regulations.

From October 2019, all vehicles for delivering products are in compliance with the stage 4 or stage 5 emission standards and the vehicle service life may not exceed 15 years. Rail transportation is used for transportation at Hualien Yard to reduce the pollution caused by road transportation. Starting from January 2020, CSC requires drivers to fill out information on the Safety and Health Self-management app before reporting for duty, pushing drivers to run a quick physical and mental examinations and fully understand occupational hazards before work, thereby improving road traffic safety and protecting other drivers. A total of 22 violations were found during on-site supplier audits in 2022, and all suppliers involved were immediately interviewed and required to make improvements.

An environmental impact assessment was conducted for all 1,743 machinery of suppliers in 2022, none were found to be non-compliant with environmental protection standards, and all vehicles for transporting products complied with stage 4 and 5 emission standards. We conducted a social impact assessment on 119 suppliers, and none were found to be non-compliant with labor safety risks this year. We placed greater emphasis on the social responsibility of suppliers in 2022, and included external violations of suppliers into evaluation, none were found to be non-compliant this year. We hope to grow together with our suppliers in shouldering our corporate social responsibility.

4.1.3 Security

The access control and security of CSC's factory is assigned to China Steel Security (CSS), with 138 security staff members (105 security guards and 33 firefighters) on-site. According to the provisions of Article 10-2 of the Private Security Service Act, "When a security company hires security guards, it shall offer them pre-service professional training of one week or above. For current security guards, it shall provide them with in-service training of at least four hours every month." CSS not only manages education and training according to law, but also offers legal knowledge, skills required on duty, human rights advocacy, etiquette, etc., providing a total of 600 training hours every month. Furthermore, CSC regularly implements emergency response at various sentries and administrative buildings every year to maintain access control security.

4.1.4 Contractor

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

According to “Management Guidelines for CSC Operations, Maintenance, and Environmental Protection Contractors”, operations, maintenance, and environmental protection contractors are to enter long-term or case-by-case contracts with CSC, providing manpower, equipment, and technical support for CSC in maintenance, operations and environmental protection related tasks. These contractors are categorized based on the nature of the tasks, amongst which the ones related to maintenance are the majority.

CSC Improves Working Conditions of Contractor:

- ▶ Increase safety and health management fees.
- ▶ Establish vacation policies and compensation for working on holidays.
- ▶ Establish job safety cultures.
- ▶ Regularly review the reasonableness of outsourcing contract fees in line with the basic wage and market prices of raw materials.

6% | Environmental Protection Contractors and other 500 Number of Contractors in 2022

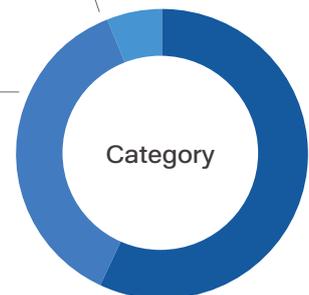
Responsible for the disposal of industrial waste produced during production.

37% | Operations Contractors
2,849 Number of Contractors in 2022

Responsible for operations-related tasks that require basic technical skills and have only indirect access to production equipment, or involved in non-technical labor works in production and technology divisions and transportation department.

57% | Maintenance Contractors
4,372 Number of Contractors in 2022

Responsible for repair and maintenance of equipment; or repair, manufacture and process of spare parts or test samples in production and technology divisions.



Contractor employees working in CSC must have insurance mandated by the government, and comply with CSC's safety and health work rules. A penalty would be imposed for any violation, and the fine will be designated exclusively to a fund for supervision, correction, and improvement of the safety and health of contractor employees. New contractors must fill out evaluation forms, disclosing information including primary business activities and verified certifications (ISO 45001/ISO 14001) to prove that they are legally registered, adequately insured, tax-paying companies with healthy financial status. Also, they must genuinely report on the critical occupational safety and/or environmental protection issues for the past three years to allow respective departments to classify and evaluate as well as arrange on-site inspections.

The agreements between CSC Plant Engineering & Maintenance Department and service providers are in compliance with regulations. Also, in accordance with the ISO 9001 regulations on contractors, CSC assesses new contractors and reevaluates them every three years to ensure that all contractors abide by national regulations, and no child labor is used or no regulation breaching the right to freedom of association and collective bargaining is in place. CSC also dedicates to the supervision of contractors to enhance the working conditions of their employees and to ensure the compliance with the Labor Standards Act by carrying out inspections on the labor conditions of contractors in general performance evaluations. No incident was reported on use of child labor, forced or compulsory labor, or violation against labor conditions in 2022.

• **Contractor Evaluation and Assessment**

According to “Management Guidelines for CSC Operations, Maintenance, and Environmental Protection Contractors”, evaluation units must provide annual evaluation reports of contractors two to four months prior to the expiry date of contract, based on regular evaluations and daily performance, as part of the supporting documents for contract renewal. The “Management Guidelines for Contractor” also states that contract executing units must conduct a monthly evaluation based on contractor's performance and compile the results in the “annual evaluation report”, in which a score below 70 would result in disqualification for contract renewal. No contractors with a score below 70 were reported in 2022.



• **Establish Stable Partnership**

CSC cares for its contractors in such broad aspects so that they can work with peace of mind and ultimately reduce turnover rate. During the “Outsourcing Strategy Review Meeting” held at the end of each year, CSC ensures that the wage level of its subcontracts is superior than the minimum wage stated in the Labor Standards Act. At the same time, CSC verifies the labor conditions every July to confirm through document review that the minimum basic salary and payment in lieu of annual leave given by contractor employers are in compliance with the Labor Standards Act and the regulations put forth by CSC. Any discrepancies with regulations need to be explained by contractor employers and signed by contractor employees.

• **Safety and Health**

CSC Contractor Safety and Health Committee was founded in 1983. Plant Engineering & Maintenance Department established “Safety and Health Guidelines for Plant Engineering & Maintenance Department

Contractors” in May 1984, to appoint a team consisting of experts from Industrial Safety & Hygiene Department and Plant Engineering & Maintenance Department to assist with the implementation and monitoring of the committee affairs. The committee members consisting of about 99 contractor companies in the areas of mechanical engineering, civil and steel construction, electrical engineering, and refractories, collaborating towards the common goals of ensuring the safety and health of contractor employees, strengthening labor quality, improving technical quality and establishing safety culture.

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

• Contractor Training

CSC maintenance units are responsible for arranging training courses and certifications based on the health and safety requirements as well as technical skills required for contractors to perform their work at CSC. The training has been proven to be effective. In 2022, contractor workers received a total of 27,517 hours of training in CSC.



Certification for scaffolding assembly skills for contractors

Type		Safety Training	Technical Training		Skill Certification	
Training Course/ Purpose		New hire training: Designed for new hires to pay attention to all safety hazards in work environment.	Fire watch personnel: Designed to prevent fire accidents.	Corrugated roofing: Designed to prevent safety hazards such as falling through.	Training Course/ Purpose	New hire training: Designed for new hires to pay attention to all safety hazards in work environment.
Contents		General safety and health training, Zero-Accident Program exercise, and safety and health regulation propaganda	Hazard identification, firefighting equipment introduction, and flammable item identification	Hazard identification, fall protection solutions, personal protective gear introduction	Contents	General safety and health training, Zero-Accident Program exercise, and safety and health regulation propaganda
2022	Persons	4,345	425	46	42	0 (Canceled due to insufficient participants)
	Number	6	3	1	3	0
	Frequency	3 times a week	22 times per year	Once/quarter (Depending the number of people that needs it)	twice per year	Once a year
	Total Hours	26,070	1,275	46	126	0 (Canceled due to insufficient participants)

4.1.5 Local Procurement

- Domestic Procurement Results**

Items		2020	2021	2022	
Refractory Materials⁽¹⁾	Amount (100 M TWD)	18.7	20.3	20.6	
	Local Manufacturer (%)	59.3%	62.5%	61.9%	
Spare Parts & Equipment	Mechanical	Number of Work Orders	190	163	190
		Amount (100 M TWD)	2.9	2.1	2.1
	Electrical & Control	Number of Work Orders	65	77	76
		Amount (100 M TWD)	1.2	2.1	2.0
Production Equipment	Production Line and Turnkey Engineering Projects	Number of Work Orders	50	62	67
		Amount (100 M TWD)	25.8	14.9	12.7

Note: 1. Currently, CSC have long-term contracts with domestic refractory material suppliers. However, in recent years, international refractory material prices and sources have been unstable, which may further affect the prices and supply of domestic manufacturers. Based on the consideration of cost and stable supply of materials, we have gradually developed new sources of foreign materials, reducing the number of domestic manufacturers' long-term contracts by 20-30%, and switching to low-priced and high-quality foreign manufacturers to supply materials, which has achieved cost reduction and material source stability.

▶ **High-value Next-generation Hand Tools**

CSC and the Metal Industries Research & Development Centre jointly implemented the Hand Tools Competitiveness Enhancement Project. The project systematically collects data on material characteristics and forms a database for heat treatment and forming, which will benefit future development of smart manufacturing and digital simulation, and continue to provide technical services, including materials R&D, surface treatment, and structural analysis.

▶ **High-value Auto Parts Industry Chain**

CSC has founded Honley Auto. Parts Co., Ltd. with resources from various companies and MIRDC, in hope of enhancing the overall competitiveness of Taiwan's automotive industry through highly flexible operation methods among private enterprises and the sales networks of automobile manufacturers. High strength aluminum alloy plays an important role in making vehicles lighter. CSC not only developed high strength aluminum alloys, but also developed warm/hot forming technologies for aluminum alloy plates, in order to increase the application of high strength aluminum alloys in vehicles, and further contribute to the energy conservation and carbon reduction of the the automobile industry.

▶ **Electrical Steel for Electric Vehicle Motors**

The thin top gauge electrical steel developed by CSC's technical team after breaking through technical bottlenecks has earned recognition worldwide as this product is currently used by a host of world-renown automobile and motor manufacturers. In an effort to enhance the competitiveness and dominance of CSC's electric vehicle motor supply chain on an ongoing basis, CSC has successfully developed fast-curing self-adhesive coating C3S1. CSC has also established a demonstrative production line for mass production of self-bonding coating motor core, accepted visits from customers, and provided technical guidance.

▶ **Local Offshore Wind Power Industry Chain**

CSC not only produces ultra-thick steel plates for wind turbine towers and underwater foundations, but also invests in Sing Da Marine Structure Corporation to import production technologies, it's a foresight in the offshore wind power industry. By teaming up with around 20 manufacturers in Taiwan's supply chain, CSC is committed to fostering the local offshore wind power industry chain.

▶ **Forward-Looking Technology and Industry-Academia Collaboration Project**

The " Forward-Looking Technology and Industry-Academia Collaboration Project – Development of Low Carbon Emission Technologies for Blast Furnace Ironmaking Process " proposed by CSC and National Cheng Kung University was approved by the National Science and Technology Council in November 2022. The project will be implemented over a three-year period from November 2022 to October 2025. CSC combined R&D capabilities of industry and academia to develop next generation low carbon iron making technologies suitable for Taiwan, including: (1) charging low carbon iron-bearing materials ; (2) hydrogen-rich gas injection; (3) top gas refined by the removal of CO₂. The technologies are applied in the blast furnace production site of CSC and further reduce carbon emissions. Benefits from low carbon iron making technologies directly spill over to domestic industries that use steel, reducing the carbon footprint of domestic steel products. CSC hopes to enhance the overall competitiveness of Taiwan's exports, and gain bargaining chips for political and economic negotiations. Furthermore, Taiwan had a relatively late start in low carbon iron making technology. As we face the crisis of a gap in high temperature iron making talent, we hope that this project will cultivate 20 Ph.D.-level talent in next generation high temperature iron making technology.

4.3 Domestic and International Associations

4.3.1 Domestic Association

CSC actively participates in the activities hold by domestic institutes and associations to strengthen mutual cooperation. The major institutes and associations CSC participated in 2022 are as follows:

Field	Organization	Visions & Goals
Steel Industry	Taiwan Steel and Iron Industries Association CSC Chairman Chao-Tung Wong as the chairman	To assist the government with economic development and foreign investments and coordinate relationship among peers for the collaboration and development of the steel industry as well as common interests.
	Chinese Institute of Engineers CSC Vice President Shou-Tou Chen as a director	To strengthen close ties and interactions with members and professional institutes worldwide. To advance the technology, expertise and professionalism in engineering. To enhance the welfare of people and society by introducing applied engineering and advanced technology.
Corporate Sustainability	Enterprise member of Taiwan Business Council for Sustainable Development	To cooperate with members in promoting corporate sustainability and environmental protection for the purpose of sustainability. To help develop national construction, enhance engineering-related expertise and skills, and promote the well-being of the people and society through the application of engineering and technology.
	Director of Taiwan Association of Soil and Groundwater Environmental Protection	
	Director of Center for Corporate Sustainability	
	Taiwan-U.S. CCUS Industry Promotion Alliance President Shyi-Chin Wang is a founder	Net zero emissions is the international goal for mitigating climate change. We reviewed Taiwan's development opportunities and strategies for carbon neutrality and CCUS based on international development and promotion experience with carbon neutrality and CCUS, accelerating the achievement of carbon neutrality by domestic enterprises.
	Founding member of Taiwan Association for Net Zero Emission	Based on the core philosophy of "advocating for net zero emission among enterprises and organizations and assisting the government in making Taiwan carbon neutral," Taiwan Association for Net Zero Emission aims to guide all sectors of society in Taiwan towards net zero emission, drive the trend of net zero emission in Taiwan, and assist the government in making Taiwan carbon neutral.

4.3.2 International Association

Organization	Means of Exchange and Cooperation	Benefit
 World Steel Association, worldsteel	As a key member <ul style="list-style-type: none"> • CSC participates in the sustainability reporting task force and provides data, offers opinions, and participates in public communication campaign. • CSC participates in the committees of technology, safety and health, environment, raw materials, economy, as well as product sustainability. • CSC takes parts in CO₂ data collections, LCA, energy consumption, and sustainability reporting or joins expert groups and offers comments as well as supports public communication campaign. 	<ul style="list-style-type: none"> • CSC shares experiences via exchanges, cooperation, and services, and thereby obtains the latest development and stays connected to the global steel industry.

Organization	Means of Exchange and Cooperation	Benefit
 (South East Asia Iron and Steel Institute, SEASIS)	As a key member <ul style="list-style-type: none"> CSC assists with conference affairs regarding steel technology and environment, safety and health, and takes parts in economic discussions and technology training programs. CSC supports the arrangement of SEASIS's annual conference and technical seminar, travelling seminars, and ASEAN technology forum, and shares reports of technology, environment, safety and health, and statistics as well as Taiwan country reports. 	<ul style="list-style-type: none"> Through maintaining good interaction and collaboration with other steel industries in neighboring countries, CSC obtains information on the development of regional industries, technologies, and policies, which provides a good basis for business development and strategic cooperation.
 Organization for Economic Cooperation and Development, OECD	CSC regularly participates in the meetings of the OECD Steel Committee under the instruction of the Ministry of Economic Affairs, Taiwan (R.O.C.) <ul style="list-style-type: none"> CSC represents the industry under the instruction of the officials (Ministry of Economic Affairs and embassies abroad) and academia (MIRDC) to participate in the OECD Steel Committee in order to obtain the latest information on the global steel environment, related policies and economy. 	<ul style="list-style-type: none"> With this international platform, CSC can obtain important information on the steel industry and environmental protection as well as increase Taiwan's visibility and participation in international agendas. With this platform, CSC is able to communicate with official steel authorities in different countries and seek opportunities to break through the existing trade barriers.

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

Material Topic

4.4 Circular Economy



CORRESPONDING TAIWAN' S SDGS (T-SDGS) :
CORE
6 · 12

2022 Highlights
<ul style="list-style-type: none"> + Waste reuse rate is 94.7% + Continue to achieve the goal of “zero solidification landfill” + 86.8% of waste is treated within the factory to reduce the carbon footprint of transportation

Policy or Commitment

Before planning the production process, CSC will conduct a feasibility study on the process, applications of by-products, waste recycling design, and potential impact on the natural environment, which are included in evaluations, and also complete risk identification. To reduce the burden of operations on the environment, CSC endeavors to develop a range of resource recycling application technologies for waste generated from production processes based on the concept of steel life cycle. These technologies are integrated in resource recycling in Linhai Industrial Park to help include usable resources in production planning. Besides properly recycling industrial by-products and waste, it also lowers the risk of outsourcing and reduces production costs, thereby realizing the benefits of circular economy.

**Material Topic****4.4.1 Waste Recycling****Management Approach**

In an effort to fulfill its responsibility for waste management, CSC actively participates in discussions and information sessions on environmental laws and regulations hosted by competent authorities in charge of environmental protection and exchanges opinions and ideas with the relevant industrial, government, and academic units. Furthermore, CSC helps detect and investigate illegal waste disposal incidents across Taiwan in cooperation with relevant competent authorities while offering technical advice. For the purpose of assisting companies under CSC Group in understanding the government's industrial waste disposal policy and learning about waste disposal-related laws and regulations, CSC organizes special lectures on environmental protection based on waste management topics in Taiwan. These lectures are also made into various knowledge documents.

Action Plan

CSC conducts internal audits each year in accordance with the Waste Disposal Act and related regulations promulgated by EPA. The qualifications of cleaning companies are assessed before commissioning. After signing a contract with a cleaning company, the joint industrial waste clearance and disposal report is submitted in triplicate to EPA's system. Upon completion of waste clearance and disposal, the cleaning company is required to provide the proper waste clearance and disposal records for future reference.

To recycle and reuse all available resources, CSC legally applies for the relevant permits to receive waste within CSC Group. With an eye on ensuring the quality of sources of waste, CSC commissions third-party organizations to inspect and investigate the sources of industrial waste. Since waste sorting management and waste flow tracking have a substantial impact on the promotion of waste recycling, CSC has developed a computerized management system. This system not only addresses management problems arising from manual paperwork, but also improves the uniformity of material composition.

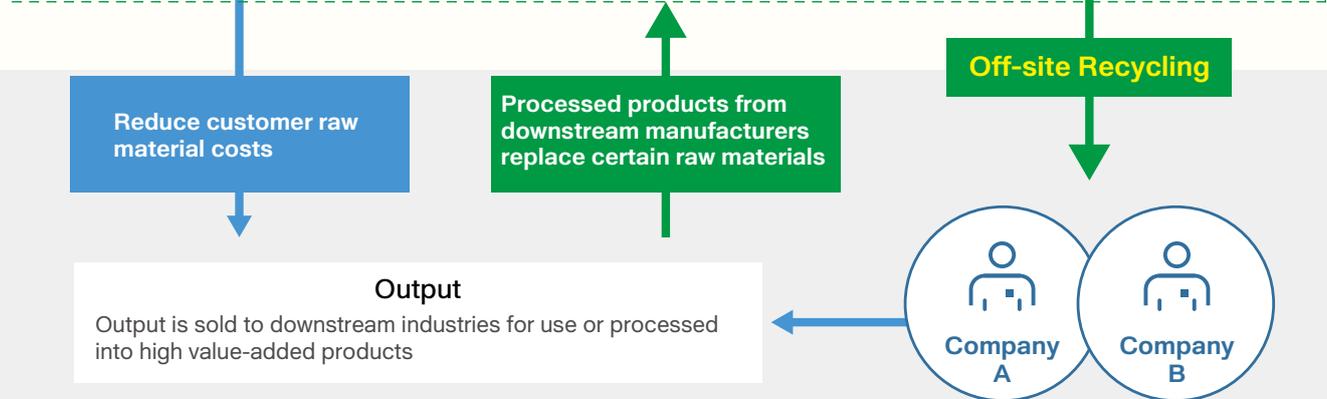
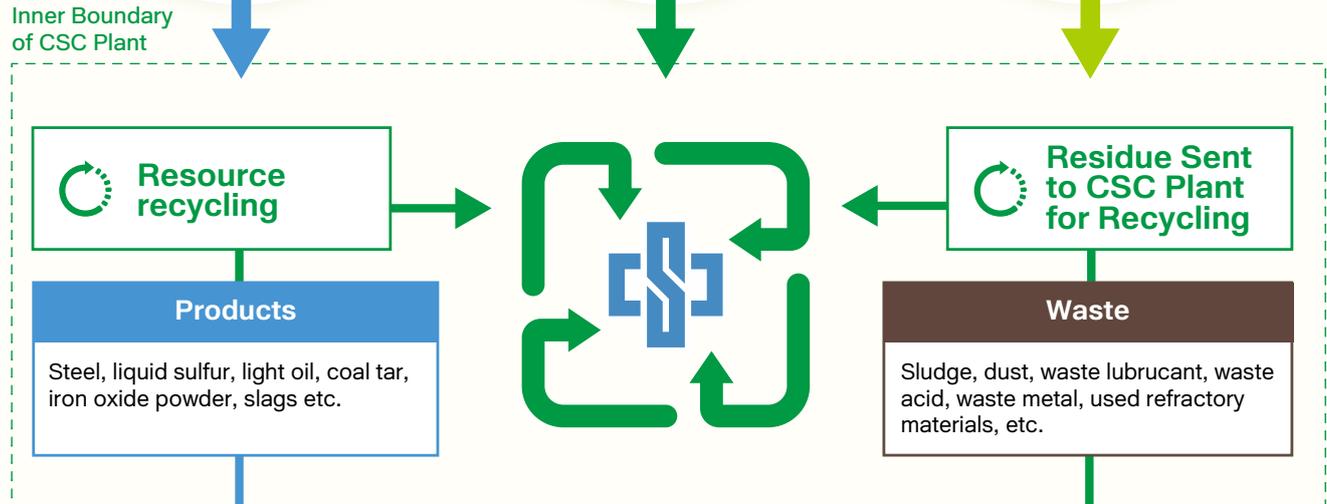
Implementation Results

CSC has reached the "zero-solidification landfill" milestone for the first time in July 2001. In 2022, CSC disposed of 559,806.7 tonnes of waste generated in total and produced 66.4 kg of waste per metric ton of crude steel. Approximately 86.8% is recycled in the plant, 13.2% is applied outside the plant, recycling 94.7% to reduce the burden on the environment. The main source of hazardous industrial waste was chromium-containing sludge produced from the steel rolling process, which were recycled and reused in manufacturing processes at CSC plants. Furthermore, legally registered disposal companies in Taiwan are commissioned to use lead-containing sludge to produce lead ingots and lead alloy, which are sold to domestic manufacturers of lead products, properly reusing recycled resources.

Material Management Process



Upstream Supply Chain



Downstream Supply Chain

Statistics of CSC waste clearance

Unit: tonnes

Item	Type of Waste	Quantity of Waste		
		2020	2021	2022
General Industrial Waste	Waste refractory	74,099.99	45,118.68	70,460.53
	Waste wood	3,038.44	3,107.71	3,574.04
	Sludge	237,899.37	235,566.42	236,562.38
	Fly ash	3,871.32	4,480.72	4,255.32
	Dust	248,714.35	264,037.83	227,849.00
	Boiler bottom ash	320.07	154.63	0
	Bottom ash	169.97	139.76	191.50
	Non-ferrous scrap metal	84.66	105.52	161.54
	Waste solvent	0.55	0.19	0.12
	Waste lubricant	4,737.18	3,789.48	4,560.42
	Municipal waste	7,063.67	6,107.67	6,035.86
	Non-infectious medical waste	0.64	0.56	0.56
	Waste metal	2,628.56	3,115.52	3,576.67
	Waste wire and cable	277.98	40.80	295.46
	Waste grinding wheel	30.46	24.11	19.35
	Waste acid	1,451.36	2,061.32	1,326.36
	Sandblasting waste	25.42	29.86	17.50
	Waste transformer	13.44	0	30.19
	Waste rubber	0	0	247.58
	Scrap iron	0	0	574.32
Scrap aluminum	0	0	9.68	
Total of General Industrial Waste		584,427.4	567,880.8	559,748.4
Hazardous Industrial Waste	Lead dross	0	0	14.69
	Chromic sludge	41.76	46.30	43.65
Total of Hazardous Industrial Waste		41.8	46.3	58.3
Total Waste		584,469.2	567,927.1	559,806.7

Note I: Power houses switched from coal to natural gas in 2022, so no boiler bottom ash was generated. The reconstruction of power houses generated scrap iron and aluminum.

Note II: Waste rubber was organized and planned to be outsourced for recycling in 2022.

Note III: Lead dross is the lead bath slag in the steel strip surface treatment process, which is only produced during equipment maintenance about every 3 years.

Percentage of CSC waste recycled

Item	2020	2021	2022	
General Industrial Waste	Incineration	4.8%	5.1%	5.3%
	Recycling	95.2%	94.9%	94.7%
Hazardous Industrial Waste	Recycling	100%	100%	100%
Waste production per tonne of crude steel (kg)		70.9	58.6	66.4
Waste is treated in-plant		87.3%	92.5%	86.8%
Waste is treated off-plant		12.7%	7.5%	13.2%

Statistics of waste directly disposed by CSC

Unit: tonnes

General Industrial Waste	2020		2021		2022	
	Onsite	Offsite	Onsite	Offsite	Onsite	Offsite
Incineration (with energy recovery)	26,944.4	1,342.4	27,711.1	1,225.7	28,310.4	1,105.7
Total of waste directly disposed	28,286.8		28,936.8		29,416.1	

Note: The direct disposal of general industrial waste is all incineration (with energy recovery), incineration (without energy recovery), landfill and other disposal operations.

• Resource Recycling and Reuse

Aside from developing and producing low-carbon steel, CSC has also engaged in a substantial amount of research on whether the raw materials used in manufacturing processes or waste generated from manufacturing processes can be recycled and reused effectively. In recent times, CSC has demonstrated relatively good performance in resource recycling as evidenced by a number of major cases described below:

▶ Cyclical use of pickling waste liquor and sludge

CSC recycles and reuses all the pickling waste liquor produced at its plants, thus reducing the cost of purchasing fresh hydrochloric acid. Meanwhile, over 98% of industrial water is re-cooled, filtered, dispersed, and coagulated to produce “sludge.” Sludge has great economic value because it contains various types of raw materials such as rust, iron ore, coke, and fluxes. Therefore, CSC recycles and reuses sludge upon dehydration to reduce the use of natural minerals, as well as sells the remaining iron-containing sludge to cement plants after processing and mixing them, thereby reducing the need for cement plants to purchase import iron slags from abroad. In 2022, CSC sold 71,000 tonnes of sludge-coal fly ash mixture in total.

▶ Cyclical use of used refractory materials

In order to protect high-temperature equipment in steel smelting and rolling processes (such as blast furnaces, basic oxygen furnaces, hot stoves, and reheating furnaces), CSC regularly replaces refractory materials in such equipment during the production process. Since refractory materials are mainly composed of aluminum, silicon, carbon, and magnesium, and meet the requirements of additional materials to be added to the smelting process, CSC sorts and processes used refractory materials based on their characteristics before recycling them into excipients for steelmaking and ironmaking at its plants. Used refractory materials are also recycled by suppliers or used as raw materials for low-strength concrete and cement outside CSC plants. In 2022, CSC recycled about 70,000 tonnes of used refractory materials, of which 92.5% were recycled within its plants and 7.5% were used outside its plants, thereby minimizing the impact of these materials on the environment.

+ For more details [Waste Recycling] https://www.csc.com.tw/csc_e/hr/csr/par/par3.htm

4.4.2 By-product Recycling Management

Action Plan

By-products from CSC productions include coal tar, light oil, BF slag, desulfurization slag, sludge-coal fly ash mixture, mill scale, liquid sulfur, and burnt lime. On the basis of the off-site recycling network built in the past, except for Granulated BF slag which is sold to domestic businesses, all others are recycled and processed by affiliate companies and then provided to chemical, construction, civil engineering, electrical, commodity, and other industries under the instructions of Environmental Protection Agency (EPA) and Industrial Development Bureau. The resources can be effectively reused, and the industrial ecosystem both inside and outside of the Kaohsiung Linhai Industrial Park is expanded. While improving the recycling rate, it also reduces the environmental burden caused by long-distance transport, thereby achieving carbon reduction.

Implementation Results

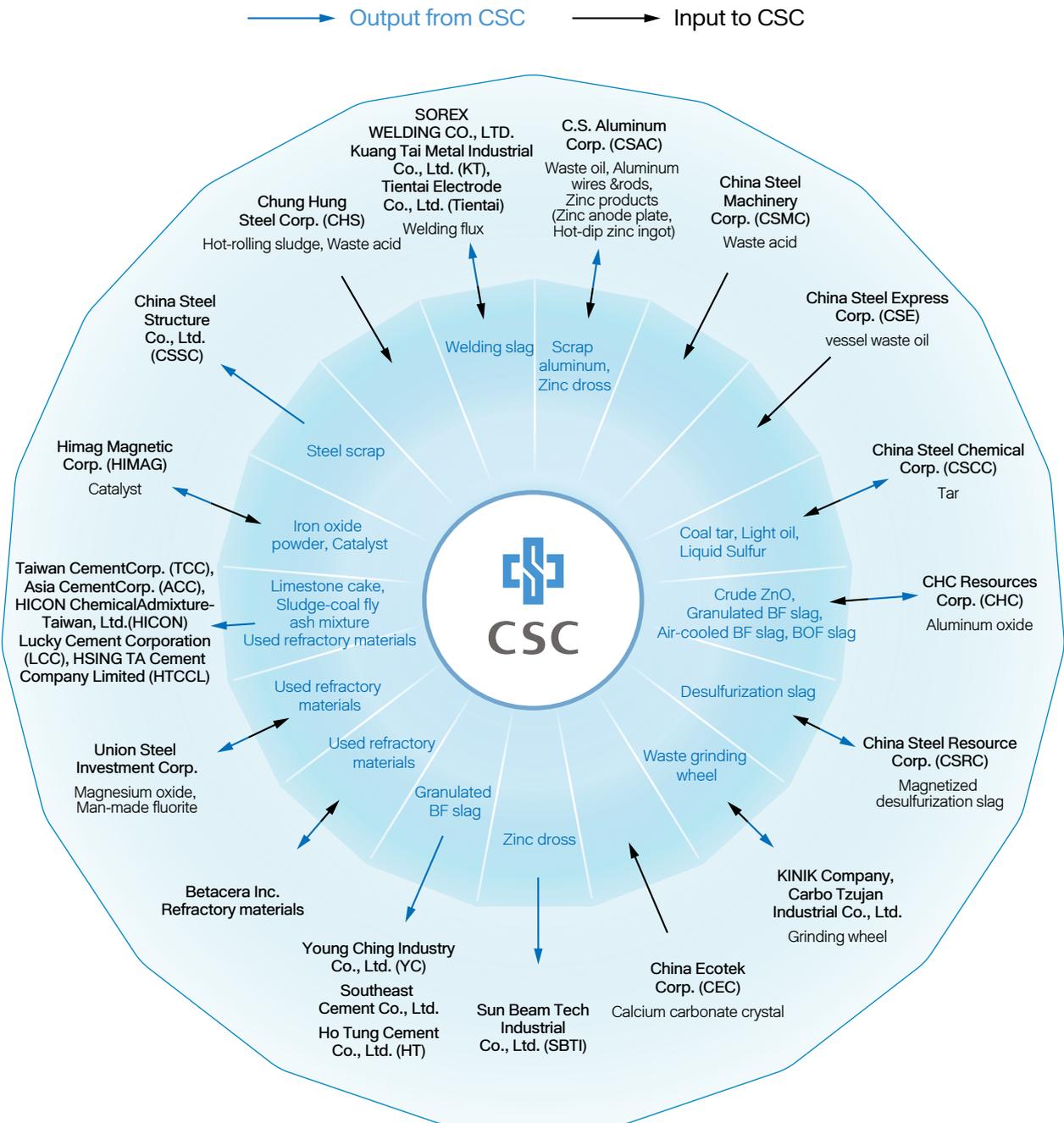
In 2022, CSC produced 4.744 million tonnes of by-products from manufacturing processes (wet basis), of which 13% and 87% were recycled within and outside its plants, respectively.

By-product Recycling Statistics

Category	Annual output (10,000 tonnes)	In-plant recycling rate (%)	Off-site recycling rate (%)	Recycling Purposes
BF Slag	282.0	1.0%	99.0%	It is used to produce slag powder after water quenching or as all types of engineering materials after air cooling.
BOF Slag	113.4	16.9%	83.1%	Cold steel scrap is recycled as raw materials for the sinter plant, and slag pot base layer. The rest is used as materials for temporary roads, asphalt concrete aggregate, cement raw meal, and reclamation material for marine engineering.
Desulfurization Slag	19.4	34.7%	65.3%	Salamander is recycled as raw materials for cement.
Sludge-coal Fly Ash Mixture	7.1	0%	100%	It is sold to cement plants as raw materials for cement manufacturing.
Mill Scale	27.3	99.9%	0.1%	It is recycled for ironmaking in the plant or used as magnetic materials off-site.
Iron Oxide Powder	2.2	0%	100%	Iron oxide powder produced from acid regeneration can be used in magnetic materials.
Coal Tar	15.6	0%	100%	It is used by CSCC as raw materials in manufacturing processes.
Light Oil	5.2	0%	100%	It is used by CSCC as raw materials in manufacturing processes.
Liquid Sulfur	0.5	0%	100%	It is used by CSCC as raw materials in manufacturing processes.
Burnt Lime	1.7	100%	0%	It is used by CSC as raw materials in manufacturing processes.
Total	474.4	13%	87%	

4.4.3 Industrial Ecology Network

In 2022, the industrial ecology network centered around CSC contained 27 companies. CSC will continue promoting the “Industrial Resource Integration Plan” in accordance with the government policy and expand the waste recycling operations in collaboration with the manufacturers of Linhai Industrial Park so as to construct a resource sharing and recycling network among industries in the industrial park, improve the operating conditions and competitiveness, and keep in line with the global trend of sustainable development.



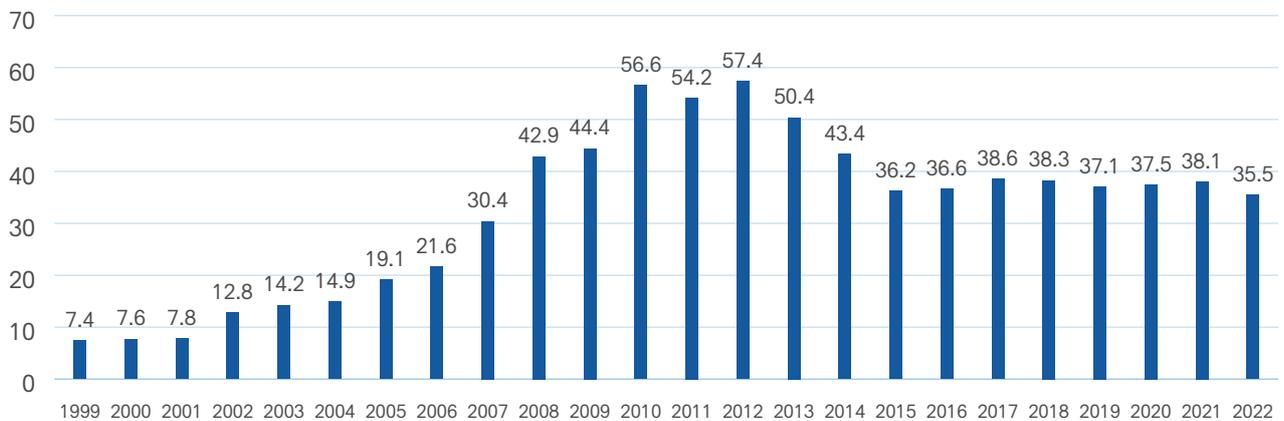
4.4.4 District Energy Integration

CSC is located in Kaohsiung LinHai Industrial Park, surrounded by a number of petrochemical and steel plants. CSC has long utilized steam produced from combined heat and power (CHP) and waste heat recovery as well as industrial gases produced from oxygen plants to share excess energy with neighboring plants. With the complementary uses of steam, oxygen, nitrogen, argon, plant air, coke oven gas, etc., energy and resources in the district is efficiently integrated. Users can turn off existing facilities with lower efficiency and higher GHG emissions or terminate new investments with lower efficiency and at same time achieve the objectives of improving energy utilization efficiency, reducing resource consumption, and lowering pollutant and GHG emissions to effectively mitigate environmental impact and improve environmental quality.

At present, a total of 14 manufacturers, including CSC, have joined the District Energy Integration. The energy that CSC sells includes steam and oxygen, nitrogen and argon produced by the Oxygen Plant. Among them, steam is the main item. The amount of steam sold in 2022 was 1.480 million tonnes, saving 4.51 million GJ (equivalent to 114,000 kL of low-sulphur oil.) In terms of reducing GHG emissions and improving air pollution, it reduced 355,000 tCO₂e of GHG, 1,082 tonnes of SO_x, 750 tonnes of NO_x, and 107 tonnes of particles^{(I)(II)(III)}, creating a multi-wins situation for CSC, customers, and the environment.

External GHG Reduction from Steam Sales

Unit: 10,000 tonnes of CO₂e



Note: I. GJ = 1 billion joules

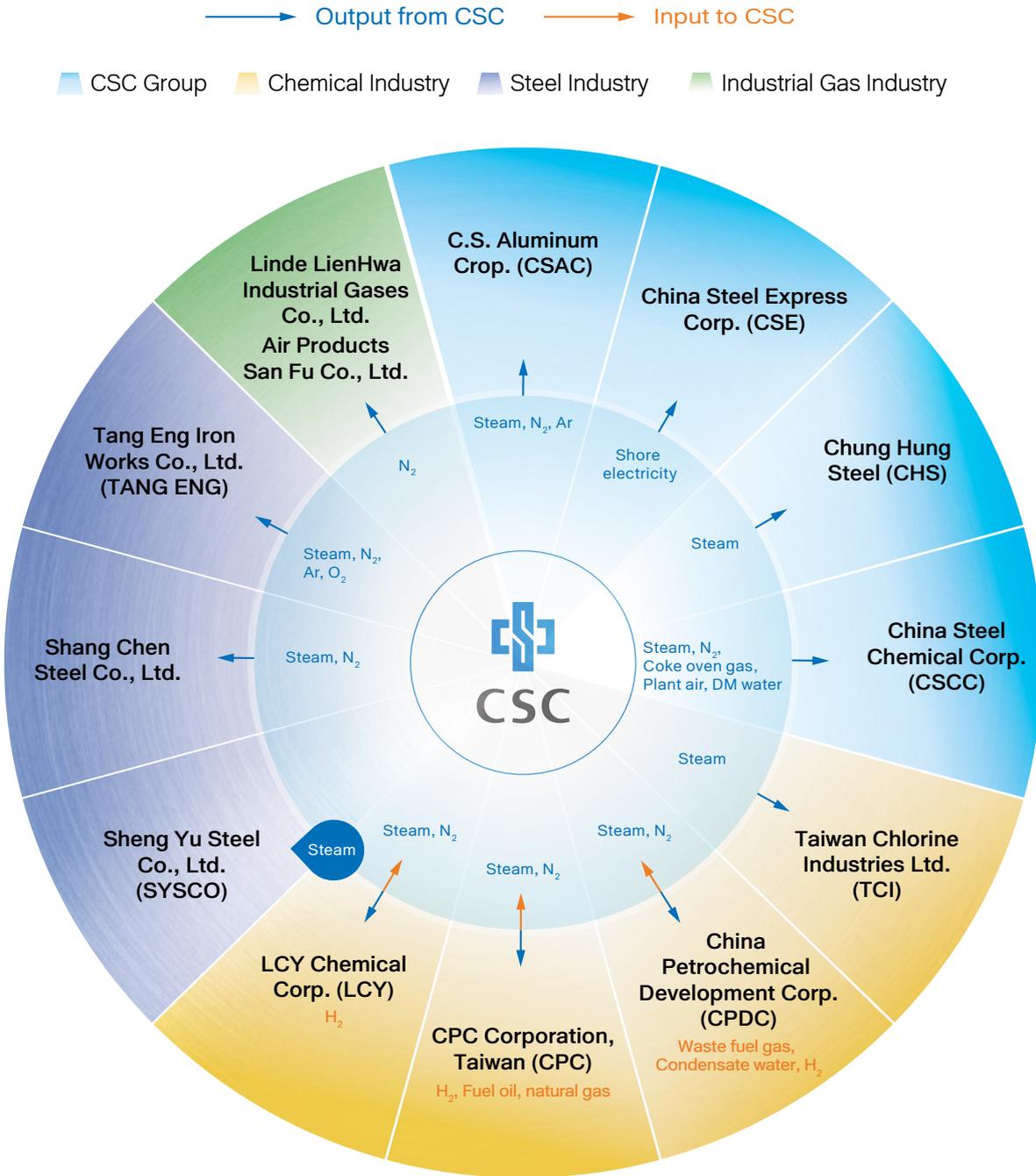
Note: II. With an estimated efficiency of 94% for the newly installed boilers, 1 kL fuel oil can produce 13 tonnes of steam. Thus, the 1.480 million tonnes of steam sold in 2022 is equivalent to the use of 114,000 kL of low-sulfur oil.

Note: III. The calculations of environmental benefits are as follows:

Energy saving: The heat value of low-sulfur oil conversion is cited from the average detected heat value of CSC in 2022, which was 9,454 Mcal/kL.

Air pollutant reduction: The calculation and coefficients were in line with the calculation of emission amount for the air pollution control fee of stationary sources by EPA.

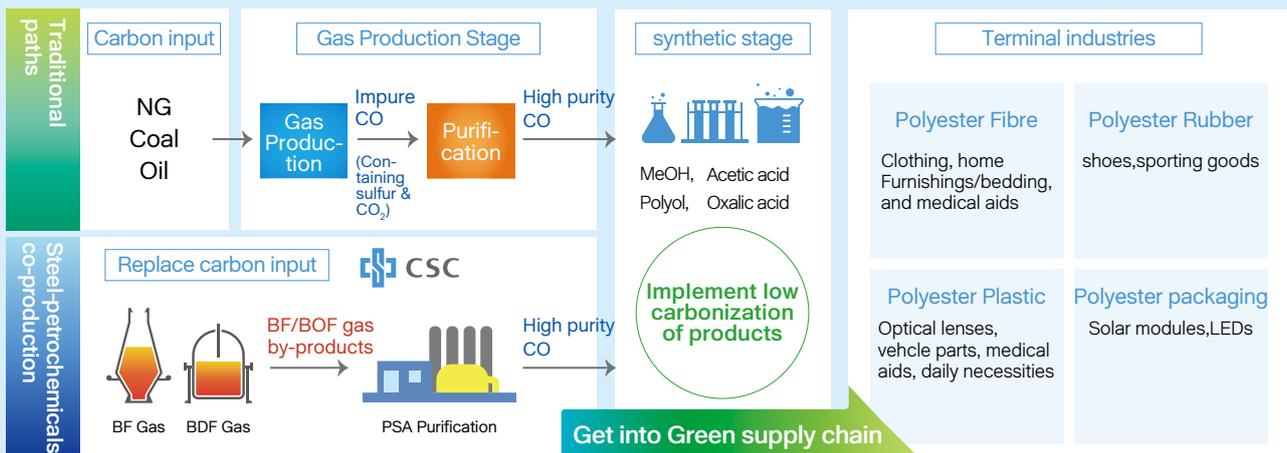
GHG emission reduction: The reduction only covered CO₂ emission before 2018, with the factors cited from the IPCC 2006 National Greenhouse Gas Inventory Guide-CO₂ emission coefficient of fuel oil. From 2019, N₂O and CH₄ were also involved in the calculation coverage, using the factors cited from the GHG emission coefficient list (version 6.0.4) announced by EPA.



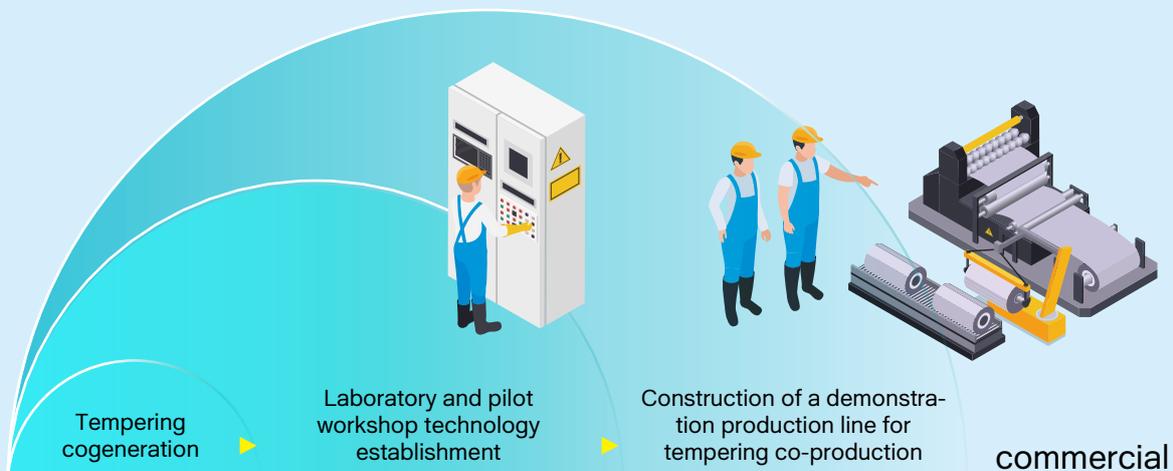
• The Three Stages of Carbon Reduction in “Coproductio between Steel and Petrochemical Plants”

The “Coproductio between Steel and Petrochemical Plants” initiative launched by CSC and the petrochemical industry is divided into three stages. In Stage 1 - “Establishing laboratory and pilot plant technology,” carbon capture from by-product gases and high-value utilization technologies are developed in collaboration with the Industrial Technology Research Institute (ITRI). In Stage 2 - “Building a demonstration production line for coproductio between steel and petrochemical plants,” the first demonstration production line will be built. Stage 3 involves extending the initiative to “commercial use,” where it is projected to reduce 2.9 million tonnes in carbon emissions each year, equivalent to the CO₂ uptake of 7,450 Da’ an Forest Parks⁽¹⁾.

The pilot plant was completed in September 2022. CSC collaborated with ITRI in conducting on-site verification of by-product gas carbon capture and high value utilization technologies.



Note: 1. The annual carbon absorption of a Daan Forest Park is about 389 tonnes CO₂e/year, which is based on the "2021 Solar Photovoltaic 6.5GW Standardization Plan of the Energy Bureau of the Ministry of Economic Affairs".



Environmental Protection

CHAPTER

5.1 Environmental Concepts and Management

5.2 Green Process

5.3 Respond to Climate Change

Feature

Dedicated to Energy Saving and Carbon Reduction -
Hot Metal Recovery in Torpedo Car Slag Removal Station

5.1 Environmental Concepts and Management

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

- ⊕ To be eco-friendly by achieving KPI (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 Best Available Techniques and renewable energy applications.
- ⊕ To support government's policy of low-carbon economy by developing energy-efficient and emission-reducing products and engaging in new green businesses.



• Environmental, Health and Safety (EHS) Management System

In 1997, CSC obtained ISO 14001-Environmental Management System (EMS) certification and received the approval of ISO 14001: 2015 certification in 2018. This system was integrated with ISO 45001 Occupational Safety and Health Management System into the EHS Management System. CSC also established an EHS Management Committee chaired by the executive vice president, and is responsible for making decisions related to EHS management. The assistant vice president of the Production Division serves as the EHS management representative and is responsible for supervising and coordinating EHS management work of related units. EHS policies are approved by the Chairman of the Board before implementation and subject to annual external audit.



EHS Policy

Care for Life

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

Risk Management

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

Training and Communication

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

Legal Compliance

Reinforce the identification and execution of legal requirements and strengthen correction and prevention actions, fully fulfill corporate social responsibility.

Improvement

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

• EHS Management Committee

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

• Environmental Loading Reduction Commitment

CSC has established a stringent environmental load assessment system aimed at effectively controlling the environmental load of investment projects. Based on this system, the environmental load of investment projects is assessed through division of labor among various units at the company, where these projects are either scaled up or scaled down based on the environmental load arising from the production capacity of existing equipment. At the same time, an energy boundary map is defined to calculate energy changes in investment projects and thus estimate CO₂ emissions from these projects, so that the environmental load of investment projects can be assessed in a comprehensive manner. The review of 4 project-based environmental load analysis, including the first milled steel bridge crane replacement, was completed in 2022.

• Environmental Accounting

By the end of 2022, CSC has invested 83.1 billion TWD. Amongst them, air pollution control accounted for 64%, water pollution control accounted for 16%, and energy saving and GHGs accounted for 11%, waste pollution control accounted for 7%, noise control accounted for 1%, and others accounted for 1%.

Energy and Environmental Investments

Items (100 million TWD)		2020	2021	2022
Capital Expenditure	Energy and Environmental Investments	53.5	28.9	39.1
Recurrent Expenses	Government Charges and Fees	2.4	2.5	2.2
	R&D	0.8	1.1	2.2
	Depreciation	15.0	13.1	12.5
	Operation and Maintenance	29.9	31.2	32.6

• Environmental Appeal

If there is any concern about an environmental pollution incident suspected to be connected to CSC, a complaint can be filed with the company through the available grievance channels by calling the environmental complaint hotline (0800-746-008) during normal working hours or the following number (07-802-1111 Ext: 2110) during non-working hours (i.e., Saturdays, Sundays, and public holidays). CSC will report and process the complaint according to its administrative system after learning about the complaint. At the same time, the unit involved in the complaint will also be asked to conduct inspections and investigations into the pollution incident and report their findings to managers at the relevant units and all divisions in accordance with the “Administrative Rules for Environmental, Safety and Health Communication, Participation, and Consultation Management.” If the pollution incident is found to have been caused by CSC, the complaint shall be processed in accordance with the “Administrative Rules for Environmental, Safety, and Health Incident Investigation, Non-compliance, and Corrective and Preventive Measures.”

• Legal Compliance

CSC did not receive any fines for violation of environmental protection in 2022. CSC not only requires on-site units to reinforce operation control and maintenance management, but also steps up monitoring and surveillance by adding surveillance cameras in areas prone to environmental anomalies. On top of that, the Company also assigns dedicated personnel to conduct inspections on equipment at its plants from time to time and implements “self-management and control” at on-site units in a bid to reduce the number of violation notices received by the Company.

Year	2020	2021	2022
Target	≤ 5 counts/year		
Pollution	Water pollution Air pollution	Air pollution	-
Issuer	KSEPB	KSEPB	-
Counts / Fine (TWD)	5 /3.507 million	1 ⁽⁰⁾ /1.35 million	0/0

Note: I. On September 4, 2021, a secondary baghouse of steelmaking process was out of order, which resulted in the dust generated during hot metal pouring could not be collected.

5.2 Green Process



Material Topic

5.2.1 Raw Materials Management



CORRESPONDING TAIWAN'S SDGS (T-SDGS):
CORE GOAL
8 · 12

2022 Highlights

- + 8 new sources for coal, iron ore and flux were developed in 2022.
- + To avoid the risk of Russia being sanctioned due to the Russo-Ukrainian War, metallurgical coal was sourced from alternative sources in other countries instead of the long-term contract with Russia. A total of 999,075 tonnes of scraps were recycled in 2022, of which 940,362 tonnes were used, making the recycle-using percentage reach to 94.1%.

Short-term goals (2023)	Mid-term goals (2025)	Long-term goals (2030)
→ The number of suppliers accepting the Supplier Code of Conduct ≥ 2,550	→ The number of suppliers accepting the Supplier Code of Conduct ≥ 3,000	→ The number of suppliers accepting the Supplier Code of Conduct ≥ 3,500

Policy or Commitment

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

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

Action Plan

Development of new material sources

CSC actively seeks new supply sources that satisfy the CSC's quality requirement. By closely tracking and reviewing the progress to diversify the risk, 8 new sources for coal, iron ore and flux were developed in 2022.

CSC also requires that the suppliers should comply with the relevant ESG clauses in procurement contracts signed with coal and iron ore suppliers. Furthermore, the CSC Supplier Code of Conduct was established in accordance with international regulations and standards, including code of ethics, labor and human rights, health and safety, environmental standards, and management system. Special clauses are added to contracts where necessary, in hopes that suppliers can adopt the same code of conduct. Please refer to Ch 4.1 Supply Chain Management and Appendix 2 Sustainability Accounting Standards Board (SASB) Steel Industry Indicators for more information on purchasing requirements.

▶ Steel Scrap Recycling

Scraps recycled by CSC are divided into two categories, scraps and residual liquid steel, in which scraps include crude steel with non-conforming quality, the head and tail cut when crude steel is produced, coils with non-conforming quality, head and tail cut from plates, and scraps. Residual liquid steel includes basic oxygen furnace, ladle, and dispenser residual liquid steel. The strategy used to increase scrap use by the Steelmaking Department is thermal balance and mass balance in furnace, torpedo car low weight production model, and adding a cover.

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

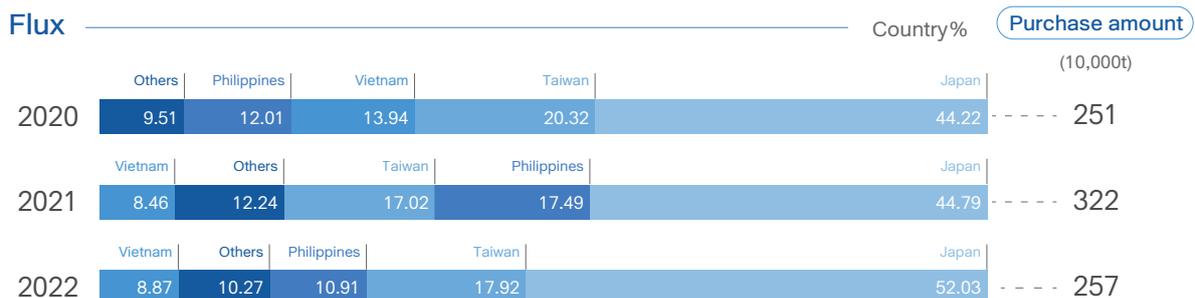
Implementation Results

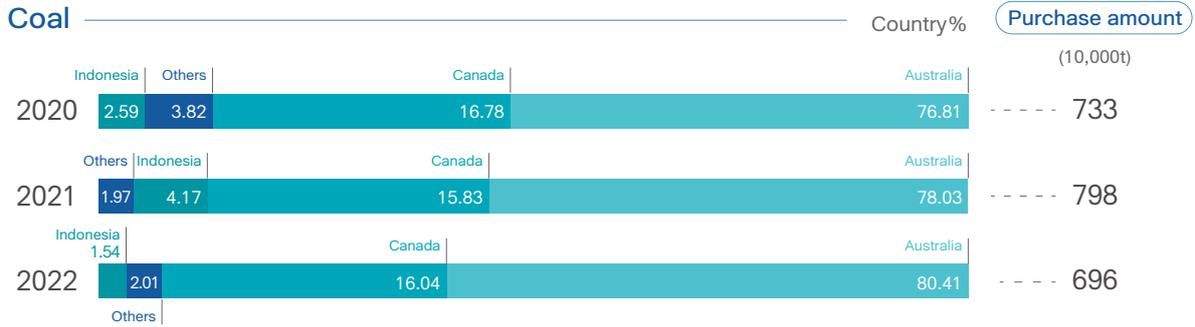
CSC is an integrated steel production plant. In the manufacturing process, more than 90% of raw materials are flux, coal and iron ore, and a small portion of steel scrap which accounted for 4.11% of materials used in 2022. The procurement of raw materials primarily focuses on non-renewable resources such as stone, coal, and iron ore. Any surplus waste steel produced internally is sold to Dragon Steel Corporation, thus adhering to the principles of a circular economy.

Category	Raw materials	2022 Usage (Unit: 10,000 tonnes)
Non-recyclable	Coal	604.9
	Iron Ore	1,333.4
	Flux	253.3
Recyclable	Steel Scrap	94.0

A total of 2.57 million tonnes (Mt) of the flux, 6.96 Mt of coal and 13.90 Mt of iron ore were purchased in 2022. Among them, about 82% of the flux was imported from abroad and serpentine and limestone from Hualien area accounted for about 18%. Coal and iron also need to be purchased from abroad.

Use of Raw Material and Percentage of Purchasing by Country from 2020 to 2022





Material Topic

5.2.2 Energy



CORRESPONDING TAIWAN' S SDGS (T-SDGS) :
CORE GOAL
7、8、11、12

* Energy-Saving Measures Cover Process Equipment And Buildings, Etc.

2022 Highlights

- + According to regulatory requirements, energy users are required to save at least 1% of electricity on average between 2015 and 2024. CSC has currently saved up to 1.89% of electricity on average from 2015 to 2022, which is higher than required by law.
- + The installed capacity of CSC's solar power system reached 62.0 MW; CSC installed 4 solar PV charging stations with a total of 30 kW for electric scooters in CSC's plants in 2019. In 2022, 24,795 kWh was generated for self-use in the plants, and CSC obtained 25 renewable energy certificates.
- + With the continuous promotion of District Energy Integration in Linhai Industrial Park, CSC sold 1.480 million tonnes of steam produced from district energy integration in 2022, which can reduce approximately 355,000 tonnes of CO₂e in greenhouse gas emissions.
- + The energy target in 2022 was 23.12 GJ/tCS (5,522 Mcal/tCS), and the actual performance was 22.96 GJ/tCS (5,485 Mcal/tCS), achieving the annual target.
- + The fourth Energy Saving Action Plan (2021 to 2025) has a target of saving 2.64 million GJ. From 2021 to 2022, CSC has saved up to 2.175 million GJ of energy, which accounted for 82% of the aforesaid target, thereby achieving its target for the year. The amount of energy saved was equivalent to a reduction of 174,700 tonnes of CO₂e in carbon emissions.

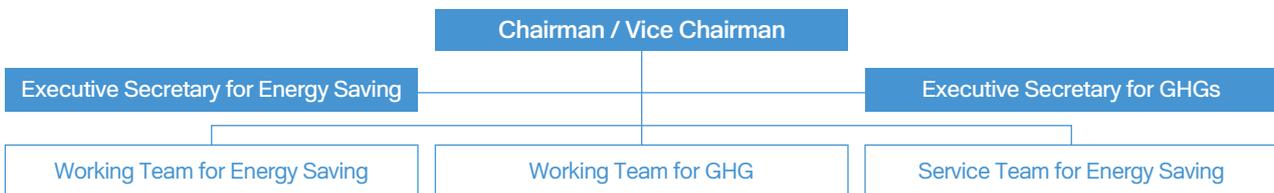
Policy or Commitment

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

Energy Policy

Continual Improvement	Legal Compliance	Performance Management	Energy Saving and Carbon Reduction	Knowledge Advancement
Improve energy performance, support energy-saving designs and green procurement, and commit to sustainable operations.	Implement legal identification, comply with energy regulations, and fulfill corporate social responsibility.	Perform energy reviews, fully provide resources and information to achieve goals/ targets, and eliminate potential energy waste.	Become an environmentally friendly steel company dedicated to improving energy efficiency, promoting district energy integration, developing green energy, and using clean energy.	Capture the latest energy technical opportunities, reach communication consensus and achieve widespread application.

The Energy Conservation Committee



In order to improve energy efficiency and achieve continuous improvement, CSC sets the energy intensity target (Mcal/tCS) according to the annual production plan and energy saving goals every year, as the energy performance indicator. The energy intensity target for 2023 is $\leq 5,436$ Mcal/tCS (22.76 GJ/tCS).

Energy Intensity Target

Item	2020	2021	2022	2023
Energy Intensity Target (Mcal/tCS)	≦ 5,614	≦ 5,390	≦ 5,522 ^{Note}	≦ 5,436
Energy Intensity Target (GJ/tCS)	≦ 23.50	≦ 22.57	≦ 23.12	≦ 22.76
Actual Energy Intensity (Mcal/tCS)	5,549	5,315	5,485	
Actual Energy Intensity (GJ/tCS)	23.23	22.25	22.96	
Accomplishment	Yes	Yes	Yes	

Note: The target of Energy Intensity is set based on production capacity and equipment maintenance that year. The steel market was still in poor condition in the second half of 2022, production of the blast furnace was adjusted accordingly, and the energy baseline has deviated from the original basis used for goal programming. Hence, the target value for Energy Intensity in 2022 was adjusted for management and to make the target feasible.

❖ Action Plan

CSC received the certificate of ISO 50001 from BSI on December 1st of 2021, and became the first steel company to implement ISO 50001 in Taiwan, and obtained ISO 50001:2018 certification in 2019. CSC continues to pass verifications by third party institutions each year, and achieves the purpose of energy conservation, carbon reduction, and continuous improvement goals through the control by management system and the implementation of the Energy Conservation Committee. °

▶ Five-year Energy Saving Action Plan and Targets

In order to achieve energy conservation and carbon reduction and respond to mandatory Greenhouse Gas (GHG) reductions in advance, CSC started the “Five-year Energy Saving Action Plan” in 2005, and has successively promoted three phases and every phase has reached the targets of the action plan. 553 energy-saving projects were completed in 2021-2022, contributing to 82% of the “Energy Saving Action Plan-Phase IV” target, which is equivalent to a reduction in carbon emissions of 174,700 tonnes CO₂e^{Note}. At the same time, CSC adheres to the government's energy saving targets and regulations “The average annual power-saving rate of energy user shall reach 1% or more from 2015 to 2024” . Currently, CSC has achieved a power-saving rate of 1.89% from 2015 to 2022.

Note I: The calculation coefficients are partially quoted from the CO₂ emission factors of the GHG inventory in the previous year, and the rest are calculated based on CSC's energy equipment efficiency coefficient in 2014 x previous year's electricity emission coefficient from the Bureau of Energy.

Phase	I Energy Saving Action Plan	II Energy Saving Action Plan	III Energy Saving Action Plan ^{Note}	IV Energy Saving Action Plan
Schedule	2005 - 2010	2011 - 2015	2016 - 2020	2021 - 2025
Energy-saving Target (GJ)	8,666,676	9,043,488	3,784,624	2,637,684
Number of Projects	372	658	662	553
Performances (GJ)	8,930,444	12,623,202	6,253,473	2,174,657
Achieving Rate	103%	139%	165%	82%

Note: Due to the diminishing energy-saving potential, the targets of Phase III and IV Energy Saving Action Plans are less than previous years. The number of projects, energy-saving performances and achieving rate are calculated until 2022.

▶ On-plant Energy Saving

- Set up Utilities Dispatching Center (UDC)

CSC established the UDC since factory completed and put into production. The UDC centrally monitors all energy sources, such as gas, electricity, steam, O₂, N₂, Ar, H₂, plant air, compressed air, etc., and also production plans. Then with the assistant of the integrated-Energy Management System (iEMS), UDC can execute dynamic dispatching in order to keep energy balancing in CSC and to minimize by-product gas emissions. UDC also manages the electricity load in CSC to avoid violating the contract with Taiwan Power Corp. (Taipower), and actively participates in the Taipower Demand Bidding Program. Furthermore, it compares the power generation cost of different fuels with Taipower tariff to adjust the self-generation amount to minimize the usage of high-priced fuels, such as low-sulfur oil and natural gas.

- Best Available Techniques (BAT)

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

- Guidelines of Energy Conservation

Energy-saving begins with design. CSC adds the “Guidelines of Energy Conservation” section to CSC Design Standard and indicates energy efficiency requirements of air conditioning, lighting, shifting mechanisms, water supply systems, etc. New plants should follow the design standard to choose equipment that is high efficiency, energy saving with long-term benefits. To promote energy conservation design standards, energy conservation examples are periodically shared during energy and environment meetings of the Energy Conservation Committee and CSC Group, in hopes of further improving energy conservation results.

+ [For more details \[Off-plant Energy Saving\]https://www.csc.com.tw/csc_e/hr/csr/env/env2.htm](https://www.csc.com.tw/csc_e/hr/csr/env/env2.htm)

+ [For more details \[District Energy Integration\], please refer to Chapter 4.4.4](#)

Implementation Results

▶ Energy Consumption

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

Category ^(I)	Item	2020 Usage (GJ)	2021 Usage (GJ)	2022 Usage(GJ) ^(II)
Primary Energy	Coal ^(III)	207,815,234	219,340,668	191,854,995
	NG	3,082,331	5,107,395	9,556,139
	Diesel Oil	103,292	111,916	104,733
	Gasoline	5,953	5,368	4,997
	Low-sulfur Oil	68,615	79,477	373,631
Secondary Energy	Purchased Electricity	8,918,640	9,600,438	9,991,953

Category ^(I)	Item	2020 Usage (GJ)	2021 Usage (GJ)	2022 Usage(GJ) ^(II)
Self-Produced secondary energy	Steam	11,692,499	10,755,248	10,791,457
	Coke Oven Gas (COG)	35,070,654	36,497,632	36,300,085
	Blast Furnace Gas (BFG)	40,424,444	47,792,494	40,306,703
	Linz-Donawitz Converter Gas (LDG)	6,982,838	8,129,416	6,816,953
	Cold Blast Air	7,793,058	8,765,847	7,765,506
	Oxygen	942,972	1,129,754	1,049,466
	Nitrogen	713,866	764,360	769,522
	Argon	95,064	100,735	90,431

Note I: Primary Energy consumption and Secondary Energy consumption were verified by DNV in CSC's annual GHG inventory. Energy consumption for each type of energy source each year is determined by calculating the product of annual consumption and average heating value in CSC's annual test each year.

Note II: Consumptions of natural gas, low-sulfur oil, and purchased electricity were higher in 2022 and 2021 than in 2020 due chiefly to the cessation of coal combustion in boilers at CSC's power houses in August 2021, which eventually led to higher consumption of purchased electricity within the company and increased use of natural gas and low-sulfur oil at the company's power houses.

Note III: Coal in 2020 and 2021 includes metallurgical coal and steam coal; coal in 2022 only includes metallurgical coal.

► Performance of Energy Saving and Carbon Reduction

In 2022, CSC completed a total of 234 energy saving projects, which saved a total of 1.317 million GJ, reduced carbon emissions by 86,000 tonnes CO₂e, and saved energy cost by 417 million TWD, main projects include Rolling Mill Department II- Hot Rolled Products "changing reheating furnace No.3 of the first hot roller to regenerative," and etc.

Energy Saving Category	2020		2021		2022	
	Items	Energy Saved (GJ)	Items	Energy Saved (GJ)	Items	Energy Saved (GJ)
Electricity	111	298,099	106	223,820	169	486,750
Fuel Gas	13	569,392	8	172,350	17	664,063
Industrial Gas	4	25,364	7	47,292	2	3,865
Steam	5	146,544	5	108,472	6	107,150
Water Systems	11	9,244	170	13,190	25	2,162
Others	12	13,882	23	285,941	15	52,853
Total	156	1,062,525	319	851,065	234	1,316,843

Material Topic

5.2.3 Air Pollutants



CORRESPONDING TAIWAN' S SDGS (T-SDGS) :
CORE GOAL
3、6、11

2022 Highlights

+ Achieved 2022 emission intensity targets.

Emission Intensity (kg/tCS)	Target value	Actual Value	Accomplishment
Sulfur Oxides (SOx)	0.63	0.50	Yes
Nitrogen Oxides (NOx)	0.73	0.66	Yes
Particulates (Par.)	0.37	0.23	Yes

+ In line with Kaohsiung City Government's policy for fall and winter, CSC proactively scheduled load curtailment for major manufacturing processes and annual maintenance of production equipment from September 2022 to March 2023, which can reduce 90.0 tonnes of Particulates (Par.), 169.3 tonnes of Sulfur Oxides (SOx), 184.8 tonnes of Nitrogen Oxides (NOx), and 4.4 tonnes of Volatile Organic Compounds (VOCs).

+ The Company completed the installation of desulfurization equipment at #1 sinter in 2021, and submitted an application to Kaohsiung City Government Environmental Protection Bureau for a certificate for actual emission offset in accordance with the Regulations of Air Pollutants Actual Emission Offset and Credit Trading for Stationary Sources. We received the certificate for actual emission offset of 637,864 kg/year in December 2022, and can use it to offset emissions of new investments in the Kaohsiung-Pingtung Total Air Pollution Control Zone.

Policy or Commitment

Air Pollution Management

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

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

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


Action Plan
Air Pollution Improvement Plan

In order to actively improve air quality, CSC expanded its investment of 44.709 billion TWD and planned an air pollution improvement plan for 2021-2026. In addition, CSC cooperates with the “Air Pollution Control Action Plan” promoted by the Executive Yuan, and participates in the quarterly state business air pollution control meeting.

Year of Completion	Improvement Project	Projected Reduction Results (Unit: tonnes/year)			
		Par.	SOx	NOx	VOCs
2020	#2 slab reheating furnace revamping for No.1 hot strip mill	-	3.6	11.5	-
	#2 dedusting system revamping for BOF plant I	100	-	-	-
2021	Flue-gas desulfurization equipment to #1 sinter	5.3	800	-	-
	1st phase of enclosed coal storage construction	14.9	-	-	-
2023	2nd phase of enclosed coal storage construction	16.7	-	-	-
2024	1st phase of coke oven and coke dry quenching construction	20.5	-	-	36.5
2025	2nd phase of coke oven and coke dry quenching construction	20.5	-	-	36.5
2026	Overhaul of Power Plant I	-	154.0	56.0	-
Total		177.9	957.6	67.5	73.0

Actively cooperate with emission reduction policies

CSC not only obeys the regulatory emission standard for all processes, but also sets emission target (emission intensity) based on air pollution control plans for next year and includes it in the environmental management system for tracking and inspection. CSC has complied with the policy of the Kaohsiung City Government for emission reduction in fall and winter, arranged the production reduction to reduce emission, and reduced Par. emission by 90.0 tonnes, SOx emission by 169.3 tonnes, NOx emission by 184.8 tonnes, and VOCs by 4.4 tonnes from September 2022 to March 2023.

Countermeasures for Various Regulated Items

Regulated items	Countermeasures
SOx	CSC has finished a number of air pollution improvement projects, such as FGD of #6~8 boiler and #1~4 sinter, #1 reheating furnace revamping for plate mill, and using low-sulfur content raw materials (anthracite and environmental coal etc.) to reduce SOx emission dramatically.
NOx	CSC has finished a number of air pollution improvement projects, such as De-NOx equipment of #6~8 boiler and #1~4 sinter, and low-NOx burners to reduce NOx emission dramatically.

Regulated items	Countermeasures
Par.	<ul style="list-style-type: none"> CSC has set up air pollution control equipment, such as bag filters and electrostatic precipitators, and budgeting annually to maintain the efficiency of control equipment. In order to reduce fugitive particulates emissions of raw material yards, a 20-meter high dust screen and automatic sprinkler equipment have been installed around the raw material yards and a chemical stabilizer spray is used. CSC has completed the construction of an automatic enclosed building at its sinter plant, the revamp of #2 Dust Collector at BOF plant I, the installation of desulfurization equipment at #1 sinter, and 1st phase construction of a new enclosed building at the coking coal storage yard, which can substantially reduce particulates emissions.
Dioxin	Activated carbon injection equipment was added to the rotary hearth furnace and by-product treatment plants, while dual function De-NOx and De-DXNS selective catalyst was added to the sinter plants to reduce Dioxin emissions.
PM2.5	Bag filters, electrostatic precipitators, wet scrubbers, and dust screens, and water and chemical stabilizers spraying equipment were installed to reduce PM2.5 emissions. De-SOx, De-NOx equipment are planned for sinter and power plants, and low-VOCs coatings are used in rolling mill department III to reduce PM2.5 precursor (SOx, NOx, VOCs) emissions.
Ozone Depleting Substances	To control ozone depleting substances, CSC integrates air conditioning, improves equipment maintenance, develops high efficiency models, uses eco-friendly coolants, and reuses recycled coolants.

► Environmental Monitoring and Testing

CSC Environmental Monitoring Center oversees 6 air quality monitoring stations and has 2 digital boards that display real-time air quality data for citizens. For stationary emission sources, 32 continuous emission monitoring systems (CEMS) serve to monitor traditional pollutants emission intensity and quantity, and 31 of them are connected to KSEPB for government supervision. The current average monthly effective monitoring rate of each instrument can reach 95% and above, which complies with regulatory standards.

If an abnormality is found, you can directly reach CSC by phone (business hours: +886-7-8021111 # 6572; outside business hours or during holiday: +886-7-8021111 #2110.)

Implementation Results

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

Emissions	2020	2021	2022	EIA Commitment Limit
SOx (tonnes/year)	4,943	5,579	4,257	34.9 tonnes/day
NOx (tonnes/year)	5,822	6,593	5,603	34.6 tonnes/day
Par. (tonnes/year)	2,188	2,164	1,921	19.5 tonnes/day
VOCs (tonnes/year)	483	409	356	--
Dioxin (g-TEQ/year)	3.92	2.12	3.50	-
Ozone Depletion Potential Values ^(I)	8.15 X 10 ⁻²	6.03 X 10 ⁻²	8.07 X 10 ⁻²	-
Total (tonnes, CFC-11 equivalent)				

Note I: The refrigerants used by Sinosteel, which are subject to the Montreal Protocol, include R-124 (2-chloro-1,1,1,2-tetrafluoroethane) and R-22 (chlorodifluoromethane) The Ozone Depletion Potential (ODP) has been calculated based on this principle since 2015. The coefficients are referenced from the Annex of the Montreal Protocol

Note II: Figures for SOx, NOx, par., and VOCs include the head office and flux processing plant.

AIR HoPE

CSC and the Aerosol Science Research Center of National Sun Yat-sen University Work Together for Blue Skies

AIR HoPE



CSC continues to engage in R&D for air pollution control based on the philosophy that "there is no best, only better when it comes to environmental protection," and thus formed a R&D team of experts and scholars with National Sun Yat-sen University to launch the Academic-Industry Research Hub of People and Earth (AIR HoPE) Project of the National Science and Technology Council. The Project has three themes: establish measurement methodology, develop new pollutant reduction technologies, and develop new filter technologies and high performance PM filters based on the characteristics of each steelwork process. Implementation of the AIR HoPE Project resolves air pollution reduction issues faced by CSC in each field, process, and production line, and allows CSC to play the traditional role of a raw material supplier. Moreover, innovations in the field of environmental protection and emission reduction will be provided in the form of consulting services to help downstream companies, partners, and even domestic and overseas steel companies improve the air pollution and PM2.5 issues in their processes.

AIR HoPE has already produced an abundance of results in the first year. In terms of measurement technologies, we have developed inorganic gas sensor chips and mobile mass spectrometer that can measure PM2.5 at any time and place. In terms of emission reduction technologies, we are conducting pilot experiments in sinter plants and have achieved significant preliminary results in removing PM2.5 through honeycomb wet scrubber(HWS) optimization and wet electrostatic precipitators(WESP).

+ For more details [Air Pollutants] https://www.csc.com.tw/csc_e/hr/csr/env/env4.htm



Material TopicW

5.2.4 Water

SUSTAINABLE DEVELOPMENT GOALS



CORRESPONDING TAIWAN' S SDGS (T-SDGS) :

CORE GOAL

6、8、11

2022 Highlights

- + Participated in the CDP water project and obtained the management level (B).
- + The recycling rate of processed water reached 98.5%.
- + CSC introduced the urban sewage reclaimed water project which recovered 21,514 million liters of reclaimed water from Fengshan Creek and Linhai Industrial Park in 2022.
- + Compared to the introduction of reclaimed water, the intensity of new water is reduced by 53.0%.
- + CSC's Rolling Mill Department III won the "2022 First Class Water-Saving Unit Award" in the 2022 Water-Saving Performance Competition organized by the Water Resources Agency, Ministry of Economic Affairs.
- + Effluent monitoring data are far more superior to effluent standards.

Policy or Commitment

CSC is located in Kaohsiung City. If CSC only relies on a single source of tap water, a cut or restriction in water supply will cause huge losses to the company and have a severe impact on production and even its equipment. Hence, CSC began keeping a beady eye on water issues many years ago. The company commissioned the Tainan Hydraulics Laboratory at NCKU to study its water use planning and strategy in 2011 and confirmed the water use strategy of diversifying its water resources in 2012. In an ongoing effort to move on from its reliance on a single source of tap water, CSC is currently working hard towards the development of new water resources aimed at mitigating the risk of water cuts or water rationing. Considering CSC's advantage arising from the fact that it is located in two areas under the urban sewage treatment and reclamation projects initiated by the Water Resources Agency, reclaimed water derived from urban sewage has been selected as the second source of water for the company's steel mills. CSC established a Utilities Department under the Production Division to effectively carry out water resource management. The department is responsible for handling water resource related affairs, formulating corresponding management strategies, and periodically reporting results. The vice president of the Production Division is responsible for supervising the Utilities Department.

Management Approach

While proactively developing a diverse range of water sources, CSC has not only built its own industrial-scale reverse osmosis (RO) water purification plant to recycle industrial wastewater produced at its plants, but also become the first in Taiwan to use reclaimed water in large quantities in 2018 in line with the government's Fengshan Creek Reclaimed Water Policy as the Company uses 40.5 million liters of reclaimed water every day, accounting 33% of its overall water consumption. On December 9, 2021, CSC began receiving 20 million liters of reclaimed water each day from Linhai Reclaimed Water Plant, thus reaching a new milestone in the

company's development of water resources as reclaimed water now constitutes up to 50% of its overall water consumption. CSC's water supply diversification policy can not only boost water supply stability at the company, but also increases the water company's flexibility to supply water for household use. On top of that, CSC has also planned ahead with the seawater desalination solution as it is now studying the feasibility of low-cost desalinated seawater as a water source on an ongoing basis.

Year		2020	2021	2022	2023
Water Intensity ^(I) (t/tCS)	Target value	4.80	4.60	4.60	4.90
	Actual value	5.06 ^(II)	4.32	4.86 ^(IV)	-
New Water Intensity (t/tCS)	Target value	3.60	3.50	2.50	2.50
	Actual value	3.58	2.65 ^(III)	2.31	-

Note I: Calculation of water intensity = (new water + reclaimed water-sold steam) ÷ annual output of crude steel. Calculation of new water intensity = (new water-sold steam) ÷ annual output of crude steel.

Note II: In 2020, the efficiency of waste water purifiers in the plants decreased, and the urban reclaimed water cannot stably provide water due to the impact of oil pollution upstream, and to respond to the COVID-19, the #2 blast furnace renovation project was implemented earlier starting from July to December 2020. The water intensity was thus increased.

Note III: In October 2021, the reclaimed water from Linhai Industrial Park was introduced.

Note IV: Due to poor market conditions, adjustments to production volume is expected to increase water consumption per unit crude steel.

► Diversified Sources of Water - Reclaimed Water Derived from Urban Sewage

- **Fengshan Creek Reclaimed Water Plant Demonstration Project:**

In August 2018, CSC began receiving 22 million liters of reclaimed water from Fengshan Creek Reclaimed Water Plant on a daily basis. Since the completion of capacity expansion at the reclaimed water plant in September 2019, CSC has been receiving around 40.5 million liters of reclaimed water from the plant each day, substantially lowering the risk of disruptions to its water supply. In 2022, CSC used approximately 14,647 million liters of reclaimed water from Fengshan River; approximately 53,670 million liters of reclaimed water from Fengshan River was used in 2018-2022.

- **Linhai Reclaimed Water Plant Demonstration Project:**

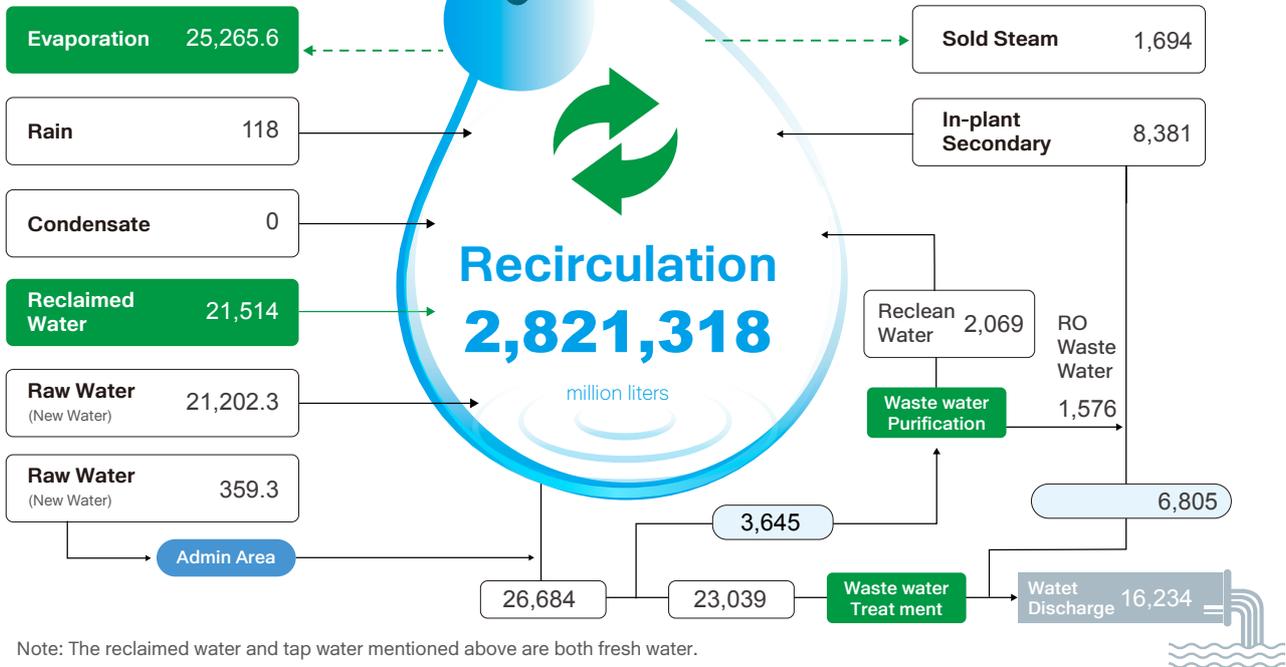
The construction of transmission and distribution pipelines for the Linhai Reclaimed Water Plant Project has been completed as scheduled. After a functional test was conducted by the Water Resources Bureau of Kaohsiung City Government and DEC-CTCI (Linhai Corporation at Linhai Reclaimed Water Plant between September 28 to October 29, 2021, the plant was put into trial operation from November 1 to December 8 and officially began supplying reclaimed water on December 9, 2021. CSC used 6,867 million liters of reclaimed water from Linhai Reclaimed Water Plant in 2022, and used a total of 8,816 million liters of reclaimed water from Linhai Reclaimed Water Plant in 2021-2022.

The main source of reclaimed water is Kaohsiung City's domestic sewage, which is deaminated with nitrogen, and treated with UF and RO. In 2022, CSC collected approximately 14,647 million liters of reclaimed water from Fengshan Creek and and 6,867 million liters of reclaimed water from Linhai Industrial Park. In 2022, the average daily new water consumption of CSC has decreased by about 59.4 million liters, and the new water consumption per unit of steel billets is 2.31 tonnes/tCS, which is dramatically lower than the last year value of 2.65 tonnes/tCS.

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

CSC Water Balance 2022

Unit : million liters / year



Year (Unit : Million liters)	2020	2021	2022
Production Process Water Recirculation	2,809,637	2,849,595	2,821,318
Processing Water Recycling Rate ^(I) (%)	98.4%	98.4%	98.5%
New Water Withdrawal	31,622	27,842	21,562
Urban Reclaimed Water ^(II) Usage	12,226	16,205	21,514
Water Discharge	15,133	14,202	16,234
Water Consumption ^(III)	28,715	29,845	26,842

Note I: Processing water recycling rate = production process water recirculation ÷ total water use in process x100%, total water use in process do not include admin area raw water.

Total water use in process = production process water recirculation + (raw water (new water) use + urban reclaimed water usage - admin area raw water).

Note II: CSC has 4 original water pools with a total water storage capacity of 177 million liters, which has been maintained at a high water level throughout the year. The Fengshan Creek Reclaimed Water was implemented in 2018, and the supply of reclaimed water reached 41 million liters per day. During the Taiwan Water Corporation's water outage, the flexibility of the water supply in the plant can be improved to reduce the risk of water limitation/stoppage.

Note III: Water Consumption=Total Water Withdrawal-Water Discharge, the Total Water Withdrawal=New Water Withdrawal+ Urban Reclaimed WaterUsage.

▶ Water Pollution Prevention

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

Aside from installing a wastewater treatment facility with a total capacity of 147 million liters per day, CSC has also built a runoff wastewater retention pond with a total capacity of 42 million liters for runoff wastewater from the raw material storage yard and a treatment plant capable of processing 36 million liters per day to ensure the quality of treated wastewater meets the effluent standards before discharging them to the sea via Yanshuigang River, and thus effectively minimizing wastewater pollution.

In 2022, the total discharge was 16,234 million liters, the Chemical Oxygen Demand (COD) and Suspended Solids (SS) were 44.2 mg/L and 7.3 mg/L respectively, which are superior than statutory effluent standards. EPA announced “Industrial Effluent Standard Draft” in June 2013, which includes the coking industry in industries with high ammonia nitrogen. In response to the new requirements of this regulation, the plan is to start from two aspects: upstream process reduction and downstream wastewater treatment. CSC filed a reduction plan with upstream process reduction (NH₃-N from 800-1,000 mg/L to <300 mg/L) and downstream wastewater treatment (NH₃-N from 300mg/L to <20 mg/L). The reconstruction of the COD removal basin and two nitrification basins were completed in 2015 and 2016, and the reconstruction of the denitrification basin was completed in February 2017. The improvement project completed the functional test in September 2017 and the ammonia concentration in the discharge water was 9.1 mg/L. In 2022, the concentration of ammonia nitrogen in the discharge water is 5.5 mg/L, which is all far superior to the statutory standard (ammonia nitrogen <20 mg/L).

Year	2020	2021	2022	Statutory Standards
COD mg/L	40.9	44.2	44.2	<100 mg/L
SS mg/L	7.8	5.3	7.3	<30 mg/L
Ammonia mg/L	8.6	6.8	5.5	<20 mg/L

Material Topic

5.3 Respond to Climate Change



CORRESPONDING TAIWAN'S SDGS (T-SDGS) : CORE GOAL

12 \ 13

2022 Highlights

- + CSC participated in the Carbon Disclosure Project (CDP) Climate Change Questionnaire in 2021 and was given a Grade B (management level) in the “Climate Change” sector, which was slightly better than the global and Asian average score of Grade C as well as Grade C for the steel industry.
- + CSC was awarded Top-performing Manufacturer in the Industrial Development Bureau’s Selection of Top-performing Manufacturers in Greenhouse Gas Voluntary Reduction in 2022, thereby winning the award for 10 years in a row.
- + The “Offset Program for Energy Saving by Hot-charge Rolling at CSC” and “Offset Program for Change in Mode of Transportation at Hualien Quarry” were passed the review by the EPA, and CSC obtained 17,202 tonnes CO₂e in GHG reduction credits in 2022.

Policy or Commitment

CSC set short-, medium-, and long-term carbon reduction targets in 2021 with the long-term goal of achieving carbon neutrality by 2050. CSC has preliminarily formulated a number of strategies and mapped its pathway towards carbon neutrality, in hopes of realizing a sustainable society, leading Taiwanese companies with its actions and helping the government achieve the goal of carbon neutrality. Hence, CSC increases its value by continuing to reduce its GHG emissions, and faces risks and opportunities on the path of low carbon transition. CSC makes disclosures based on the Task Force on Climate-related Financial Disclosures (TCFD) framework, so that stakeholders can fully understand CSC's efforts in the formulation of risk controls and countermeasures to cope with climate change. This concept is also disseminated to CSC's senior executives and employees at all level.

Climate Governance Hierarchy

In CSC's climate governance hierarchy, the Board of Directors is the top climate governance, the Corporate Governance and Sustainability Committee is the management unit. The Sustainable Environment Development team and Risk Management team of Corporate Governance and Sustainability Committee, which have vice presidents of departments as the convener are responsible to climate change issues faced by CSC, and periodically report their progress to the Corporate Governance and Sustainability Committee based on implementation results.

Furthermore, in response to net zero emissions, CSC established the Task Force on Energy Saving & Carbon Reduction and Carbon Neutrality in February 2021, the chairman of the Board is the person in charge. The task force convenes meetings once a quarter and periodically reports its progress to the Board of Directors.



+ * Implementation results: event records of the Task Force on Energy Saving & Carbon Reduction and Carbon Neutrality: https://www.csc.com.tw/csc_e/hr/csr/env/env3.htm

Assessment of climate change risks and opportunities



CSC identifies the risks and opportunities brought by climate change to all divisions based on TCFD recommendations, thereby CSC is able to effectively respond to a wide range of issues arising from climate change. We also integrated climate-related risks into the company's overall risk management framework, please refer to the chapter on "Risk Management" for details. The process for identifying material climate change risks and opportunities of CSC is described in detail below:

→ **Step1: Scenario analysis**

CSC referenced research reports of the International Energy Agency (IEA) and Intergovernmental Panel on Climate Change (IPCC) to analyze the impact of climate-related risks and opportunities on our business strategy. After considering the characteristics of our operations and external market changes, we introduced the IEA's Announced Pledges Scenarios (APS) and (Net Zero Emissions (NZE)). For extreme weather factors, we used the IPCC's extremely high emissions scenario (SSP5-8.5) for simulation analysis.

→ **Step2: Identification of climate risks and opportunities**

To identify industry characteristics of CSC and to align with international sustainability standards, we referenced the TCFD guidance and international reports on the steel industry, and selected risks and opportunities that we might face due to climate change. The scope taken into consideration covers product applications, supply chain, adaptation and mitigation activities, R&D and investment in emerging technologies, and operations and processes. As a result, a total of 7 transition risks, 4 physical risks, and 7 opportunities were identified.

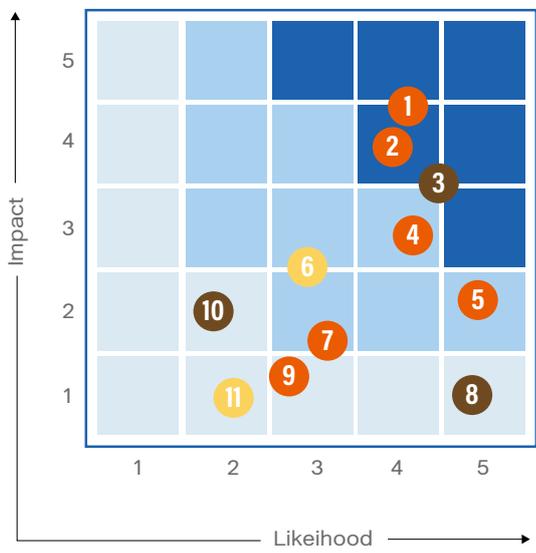
→ **Step3: Identification of material risks and opportunities**

Based on the risks and opportunities described above, risks are identified based on the time interval of occurrence, likelihood of occurrence, and level of impact. The importance of climate change related risks and opportunities to CSC is determined based on the experience of department heads and employees of the production, business, technology, finance, and planning departments. "Time interval of occurrence" is set as follows: Short-term (2022-2023), mid-term (2023-2030), and long-term (2030-2050). "Likelihood of occurrence" and "level of impact" is determined by the departments interviewed based on their responsibilities and scope of business. A matrix of climate change risks and opportunities is then drawn to complete material topic identification.

→ **Step4: Establishment of risk management countermeasures and track of the countermeasures through Metrics and Targets**

Related departments establish countermeasures for material climate risks and opportunities, track metrics and short-term, mid-term, and long-term targets, and understand how to respond to risks and opportunities brought by climate change.

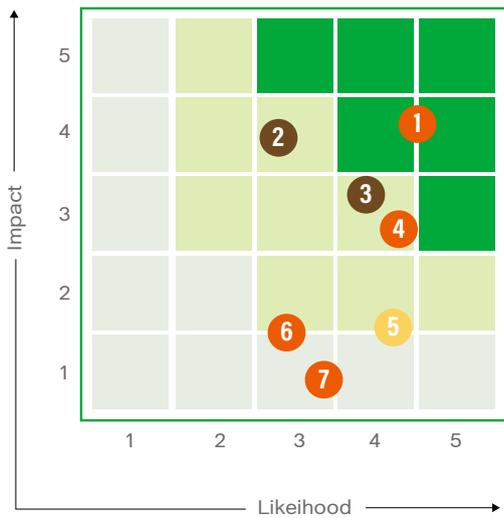
Climate-related risks matrix



● 2022-2023 Short-term ● 2023-2030 Mid-term ● 2030-2050 Long-term
■ Low Impact ■ Medium Impact ■ High Impact

Sequence	Type of Risk	Risk-related Issue
1	Transition risk	Payment of carbon fees in accordance with new carbon fee-related regulations (e.g., the Carbon Border Adjustment Mechanism, CBAM) could increase operating costs.
2		Low-carbon transition may result in cost increase due to tight supply of raw materials.
3		Steel demand among customers could change due to climate change.
4		Active development of new steelmaking techniques in response to the trend of low-carbon development could result in cost increase.
5		Raising energy and resource efficiency standards for various assets in response to the trend of low-carbon development, such as replacing equipment with high-efficiency ones, could increase operating costs.
6	Physical risk	Suppliers' inability to normally produce or distribute raw materials due to increased frequency and severity of extreme weather events such as typhoons and floods could affect operations.
7		Increased frequency and severity of extreme weather events such as typhoons and floods could affect operations.
8	Transition risk	Laws and regulations, customer and international initiatives, and carbon reduction targets set by the company could lead to a continuous increase in the proportion of renewable energy in overall energy consumption.
9	Physical risk	Increased frequency and severity of extreme weather events such as typhoons and floods could affect operations.
10		Coastal flooding in port areas due to global sea level rise could cause damages to assets.
11		Risks could arise from environment-related news and public opinion and response.

Climate-related opportunities Matrix



● 2022-2023 Short-term ● 2023-2030 Mid-term ● 2030-2050 Long-term
■ Low Impact ■ Medium Impact ■ High Impact

Sequence	Opportunity-related Issue
1	Provide wind power-related materials, produce top-grade electrical sheets, and expand into the electric vehicle supply chain to expand the scope of business.
2	Continuously develop and expand the company's low emission technologies as well as provide low-carbon products to gain favor from customers.
3	Strengthen climate resilience to increase profits as countries respond to climate change.
4	Engage in low-carbon transition in collaboration with industry chains and reduce product life cycle footprint to gain favor with customers.
5	Reduce the consumption of product resources through the development of new technologies.
6	Continue to develop a diverse range of renewable energy sources in response to low-carbon transition to increase resilience to carbon fees.
7	Actively engage in energy conservation and carbon reduction, develop carbon rights, and participate in the carbon market.

+ Mitigate low-carbon transition risk and seize corresponding opportunities

Transition risks/opportunities	Scenario	Scenario analysis
<p>+ Transition risk</p> <p>Payment of carbon fees in accordance with new carbon fee-related regulations (e.g., the Carbon Border Adjustment Mechanism, CBAM) could increase operating costs.</p>	<p>Temperature rise of 1.8°C (IEA APS)</p>	<ul style="list-style-type: none"> Considering that domestic carbon fees are still unclear, CSC considers international carbon tax and carbon trades to assess the impact.
<p>+ Transition risk</p> <p>Low-carbon transition may result in cost increase due to tight supply of raw materials.</p>		<ul style="list-style-type: none"> In the low carbon emission scenario, scraps and reduced iron may become an important source of raw materials and cause raw material prices to fluctuate.
<p>+ Transition risk</p> <p>Steel demand among customers could change due to climate change.</p>		<ul style="list-style-type: none"> The installed capacity of wind power worldwide increases 164% in 2030; electric vehicles account for 30% of the vehicle market in 2030.
<p>+ Opportunity</p> <p>Provide wind power-related materials, produce top-grade electrical sheets, and expand into the electric vehicle supply chain to expand the scope of business.</p>	<p>Temperature rise of 1.5°C (IEA NZE)</p>	
<p>+ Transition risk</p> <p>Active development of new steelmaking techniques in response to the trend of low-carbon development could result in cost increase.</p>		<ul style="list-style-type: none"> In the low carbon emission scenario, CSC transitions to low carbon steel making technologies, and other industries also prioritize the use of low-carbon emission steel.
<p>+ Opportunity</p> <p>Continuously develop and expand the company's low emission technologies as well as provide low-carbon emission products to gain favor from customers.</p>		

+ Climate change adaptation strategies

Physical risks	Scenario	Scenario analysis
<p>+ Suppliers' inability to normally produce or distribute raw materials due to increased frequency and severity of extreme weather events such as typhoons and floods could affect operations.</p>	<p>Temperature rise of 2.4°C (SSP5-8.5)</p>	<ul style="list-style-type: none"> IPCC AR6 pointed out that the frequency and intensity of extreme weather events will increase at the place of origin for some raw materials
<p>+ Increased risk of water scarcity arising from extreme changes in weather patterns could affect production.</p>		<ul style="list-style-type: none"> According to the Taiwan Climate Change Analysis Update Report, the maximum number of consecutive days without rainfall in Taiwan shows an upward trend, and will increase 5.5% in 2050 in the worst case scenario for climate change (SSP5-8.5).

* Each scenario considers the maximum temperature rise with 50% confidence level in 2050

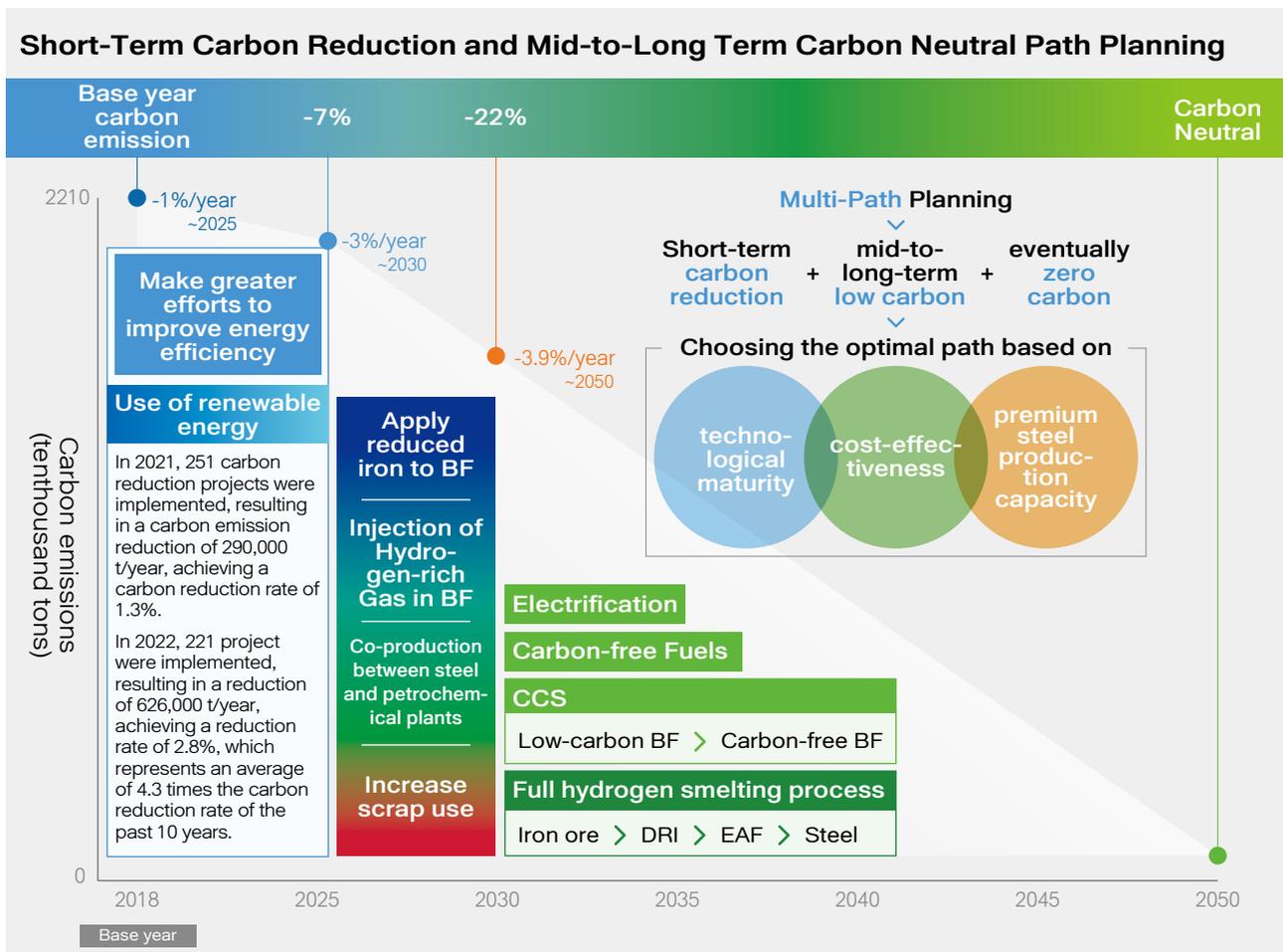
Impact on CSC operations	Countermeasures	Targets
<ul style="list-style-type: none"> ● Products need to bear the cost of carbon emissions, resulting in an increase in operating costs ● Carbon price needs to be paid for products of CSC or downstream customers that are exported, resulting in an increase in operating costs 	<ul style="list-style-type: none"> ● Continue to reduce carbon emissions to mitigate the impact of carbon pricing on CSC and downstream customers ● Reduce process carbon emissions and continue to invest in the R&D of corresponding technologies ● Improve power house performance, reduce the use of purchased electricity, and increase the percentage of green electricity use 	<p>Carbon emission targets of CSC:</p> <ul style="list-style-type: none"> ● Reduce carbon emissions by 7% in 2025 ● Reduce carbon emissions by 22% in 2030 ● Achieve carbon neutrality in 2050 <p>*The baseline year is 2018*</p>
<ul style="list-style-type: none"> ● The industry has higher demand on emerging raw materials and causes prices to increase, which further causes operating costs to increase 	<ul style="list-style-type: none"> ● Continue to expand alternative material sources ● Prepare for new raw materials and resources 	<ul style="list-style-type: none"> ● Aim to develop one type of new material each year under CSC's new material source development policy (C1)
<ul style="list-style-type: none"> ● The renewable energy and electric vehicle markets are flourishing, and if CSC fails to develop products aligned with market trends or its production capacity cannot meet market demand, it may cause the revenue to decrease 	<ul style="list-style-type: none"> ● Improve the product quality of ES for electric vehicles (such as: magnetic and mechanical properties and thickness), actively conduct product related tests and certificate verification. Further to implement production capacity expansion projects ● Help domestic automobile manufacturers adopt ES for electric vehicle motors, and enhance their competitiveness in the domestic electric vehicle market 	
<ul style="list-style-type: none"> ● If CSC successfully develops products that align with the market trend in renewable energy and electric vehicles and its production capacity can meet market demand, it may make an increase in revenue 		<ul style="list-style-type: none"> ● Sales ratio of premium steel \geq 50.4% in 2025 ● Sales ratio of premium steel \geq 51.9% in 2030
<ul style="list-style-type: none"> ● Investing in the R&D of new steel making technologies causes R&D cost to increase 	<ul style="list-style-type: none"> ● Actively engage in industry-academia collaboration projects and focus on emerging low-carbon steel making technologies, including: Replace a portion of iron ores with reduced iron, replace coal injection with hydrogen injection, and carbon capture and applications ● Continue to promote potential markets for selling low-carbon emission steel, such as increasing the percentage of steel scraps used in galvanized steel for electronic product users 	
<ul style="list-style-type: none"> ● Continue to develop and expand the Company's low carbon emission technologies, and provide low-carbon emission products aligned with market trends to increase revenue 		

*The scenario considers the temperature rise in the middle of the 21st century

Impact on CSC operations	Countermeasures	Targets
<ul style="list-style-type: none"> ● Raw material supply issues caused by extreme weather events may result in broken supply chains or impact production 	<ul style="list-style-type: none"> ● Weather monitoring and supply chain maintenance are included in routine management work based on the concept of business continuity, in order to immediately respond to any potential climate changes and raw material production and transportation risks ● With consideration to supply chain transportation risks, locations that are less impacted by the weather are selected as the transit base for raw materials transportation 	<ul style="list-style-type: none"> ● Maintain raw materials supply capacity and stability to ensure the balance between transportation and cost in the supply chain
<ul style="list-style-type: none"> ● Extreme weather increases the risk of water shortage, and further affects production processes of plants 	<ul style="list-style-type: none"> ● Continue to increase the ratio of process water recycling, strive to diversify water sources, and increase the percentage of reclaimed water used ● Use the reservoir in plants for flexible supply to lower the impact of tap water supply 	<ul style="list-style-type: none"> ● Plan the introduction of (alternative sources of) reclaimed water from Hefa industrial parks, and reduce new water consumption by 54.4% in 2025 ● Continuously assess the feasibility of consuming 13,000 cubic meters of desalinated seawater per day in a move towards diversification of water sources, with the expectation of reducing new water consumption by 64.4% in 2030

+ Low carbon transition plan

CSC has set short-term, mid-term, and long-term carbon reduction targets. With the long-term goal of achieving carbon neutrality by 2050, CSC has preliminarily formulated a number of strategies and mapped its pathway towards carbon neutrality. In the short-term, we mainly plan to increase the use of renewable energy and step up efforts to improve energy efficiency. We completed 251 carbon reduction action plans in 2021 and reduced carbon emissions by 1.3% or 290,000 tonnes/year. We completed 221 carbon reduction action plans in 2022 and reduced carbon emissions by 2.8% or 626,000 tonnes/year. As for the mid-term and long-term pathway towards carbon neutrality, we will reach the goal of reducing carbon emissions in 2030 by 22% compared to 2018 (planning an ambitious target of 25%) by "applying reduced iron to BF," "injection of hydrogen-rich gas in BF," "co-production between steel and petrochemical plants," and "increasing scrap use." There are 4 pathways towards carbon neutrality after 2030, namely electrification, carbon-free fuels, CCS, and full hydrogen smelting process, with carbon reduction tasks in 10 aspects.



● CSC's management strategy for the pathway to carbon neutrality – Internal carbon pricing

We currently plan to use external prices as the basis for CSC's internal carbon pricing. External prices include domestic carbon tax and overseas carbon tariffs. Besides calculating carbon emission related costs and conducting sensitivity analysis, we will also be able to effectively evaluate the benefits of carbon reduction related capital expenditures or R&D expenses. The internal carbon price will be able to effectively control the Company's overall carbon emissions, and drive the development of production processes and technologies with lower carbon emissions, or readjustment of internal operations and production processes.

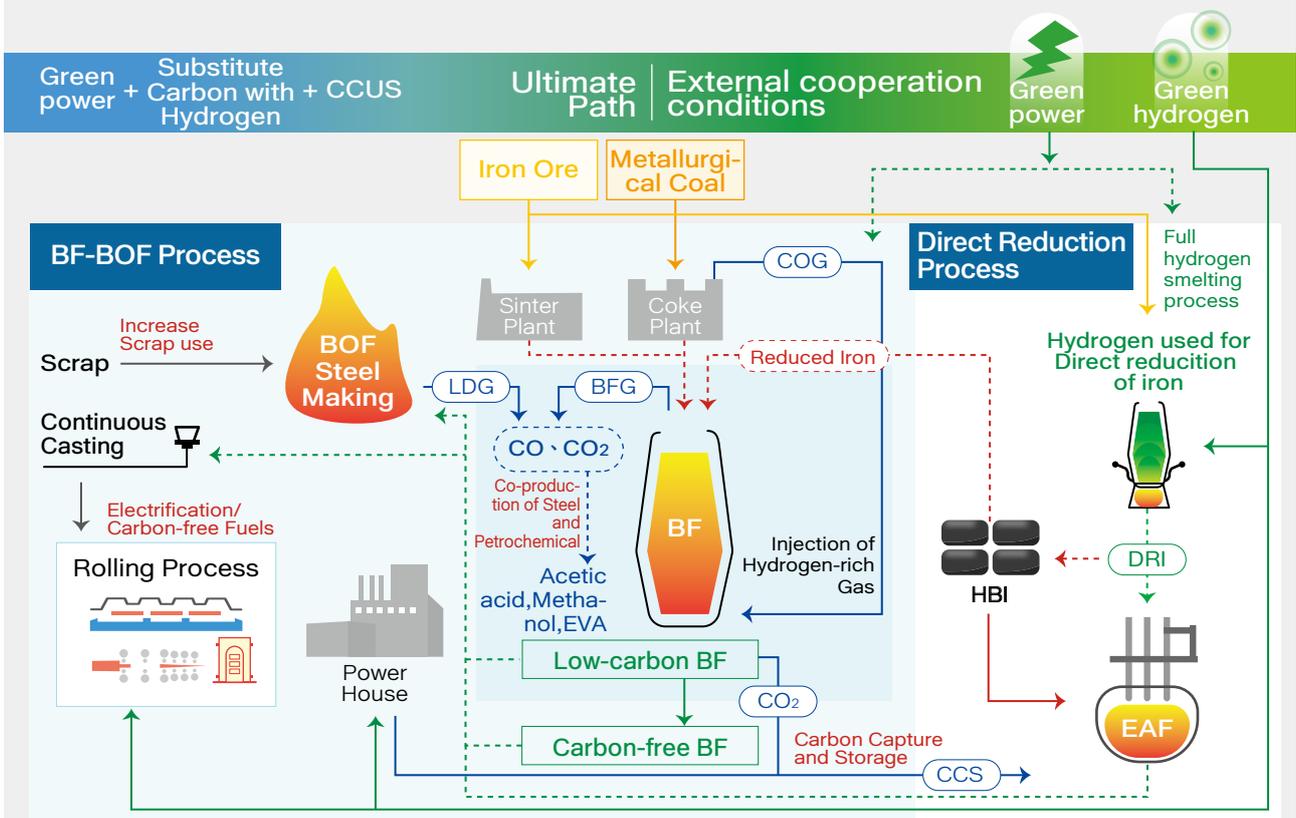
● CSC's GHG reduction results

The Environmental Protection Dept. consolidates the GHG reduction projects implemented in the previous year and verification by second-party from IDB; the verification results are registered and recorded on the Bureau's voluntary reduction platform. The records can be used as evidence that shows CSC's efforts before the national GHG Cap system enters been implement in order to ease down the pressure from GHG reduction. Since 2005, CSC has been cooperating with IDB and as of 2022 a total of 1,318 reduction projects were implemented and the cumulative reduction reached 1.531 million tCO₂e/year. Due to our outstanding performance in reducing emissions, CSC has been awarded by IDB over the years and was honored as one of the best performers in 2022.

Action Plan 1 Pathway to Carbon Neutrality and Carbon Reduction Strategy Planning

CSC has also drawn up a two-stage pathway to ensure that it can achieve carbon neutrality. However, CSC currently encounters a number of problems in some of its strategies, such as a lack of mature technology and hydrogen resources and the need for equipment revamp, and will eventually face challenges in three areas - technology, resources, and costs, which are also similar to other steel mills across the globe. Therefore, CSC will actively engage in R&D operations while reviewing and adjusting the progress of each strategy on a rolling basis.

Innovative Green Process: Mid-to-Long Term Two-Stage Carbon Neutral Path Planning



◆ Considering the lack of mature technology and green resources and the need for equipment upgrading, CSC will face three major challenges : technology, resources, and capital.

● Participated in the Kaohsiung City Government's Greenhouse Gas Reduction Project Across Departments

In recent years, CSC has continued to cooperate with Environmental Protection Bureau Kaohsiung City Government in handling the "Greenhouse Gas Reduction Project Across Departments", assisting rural area and underprivileged groups to replace energy-saving equipments. The number of projects, the amount of subsidy, and benefit of carbon reduction in the past 5 years are as follows:

Year	2018	2019	2020	2021	2022	Total
Number of projects	3	7	5	7	6	28
Amount of subsidies (TWD)	527,758	503,509	625,900	692,684	788,459	3,138,310
Carbon reduction	34,091	16,895	16,331	6,767	145,251	219,335

+ Low carbon transition plan

Action Plan 2

Product carbon footprint inventory

Compiling and disclosing the carbon footprint of a company has gradually become a material topic of concern to stakeholders due to climate change. CSC compiled the carbon footprint inventory of 23 product categories, such as hot-rolled coils, to update its information and establish more comprehensive carbon management mechanisms, which was successfully completed with the collective efforts of production units and passed external verification by the BSI. The assurance statement was obtained on November 23, 2022.

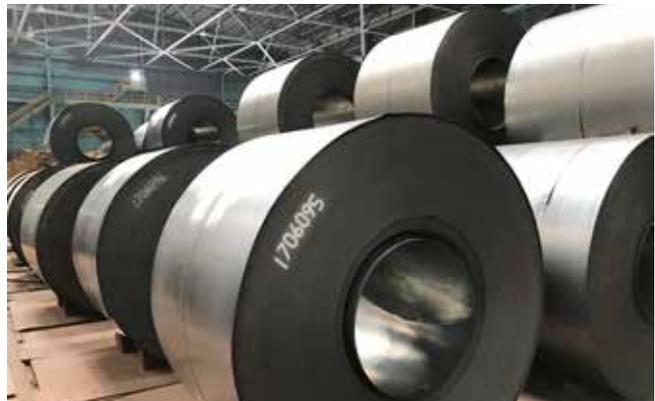
During the internal verification process, inconsistent sources of supporting documents was frequently encountered, which inspired the idea to link existing information systems into an inventory management system that will accelerate the calculation of carbon footprint and lift the burden on personnel. The system is used to manage and monitor carbon emissions of production plants, and serves as an important management tool. In response to the rise of carbon tariffs and trend of net zero emissions, brands in each industry are setting goals to achieve net zero emissions, which has gained the support of their supply chain, and the companies have joined the ranks of setting a product carbon emission baseline for carbon reduction. As a major international supplier of steel products, CSC naturally cannot sit on the sidelines and will continue to compile its carbon footprint inventory to more effectively understand its carbon exposure, while meeting the expectations of the competent authority, customers, and supply chain, working together to achieve sustainability and carbon neutrality. CSC also responds to questions from investors or customers to more effectively understand its carbon exposure risk.



Assurance Statement



Internal verification process



The carbon footprint of hot-rolled coils is 2.151 kgCO₂e/kg

+ Low carbon transition plan

Action Plan 3

Carbon credits management and GHG offset project

CSC has formulated the “Carbon Trading and Management Regulations” in accordance with EPA's rules and regulations as well as international practices, with the relevant operations incorporated into ISO 14001 Environmental Management Systems. Meanwhile, applications for GHG offset credits are submitted by the Environmental Protection Department at CSC to the competent authority. As of the end of 2022, CSC has 4.5172 million tonnes of CO₂e in GHG offset credit balance.

• Greenhouse Gas Inventory (Scope 1~3)

Every year, CSC entrusts a third-party agency certificated by the EPA to verify CSC's annual GHGs emission inventory, and obtains statement documents. During the verification, CSC continues to enrich the relevant information. GHG information of 2022 ^(I) is shown below.

			Unit: tCO ₂ e
GHG emissions	2020	2021 ^(III)	2022
Direct GHG emissions (Scope 1)	18,318,428	20,939,573	18,248,901
Indirect GHG emissions from imported energy (Scope 2)	1,243,430	1,357,456 ^(II)	1,412,524
Total emission ^(I)	19,561,858	22,297,029	19,661,425
Total other indirect GHG emissions (Scope 3)	11,114,462	12,055,837	11,216,225

				Unit: Tonnes CO ₂ e/1,000 TWD in revenue
GHG emissions intensity	2020	2021	2022	
Direct emissions (Scope 1)	0.09964	0.08060	0.07282	
Indirect GHG emissions from imported energy (Scope 2)	0.00676	0.00523	0.00564	
Other indirect (Scope 3)	0.06046	0.04641	0.04476	

Note I: The boundary of CSC GHG emissions refers to the Operation Control Approach, including important operating sites such as Head Office and China Steel Building. The emissions are calculated using Emission Factors Methodology, and the GHG considered include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and nitrogen trifluoride. After completing the brand new CSC China Steel Building in 2013, we adjusted our GHG inventory boundary in accordance with ISO 14064-1 and redefined our base year to 2014. The GHG emissions of 2014 is 20,629,824 tCO₂e, based on the GWP value from the IPCC's Fourth Assessment Report. The source of the coefficient includes the emission coefficient management table announced by the EPA, the World Steel Association coefficient, and the estimated emission coefficient of the carbon content measured by the plant.

Note II: The data of scope 2 is recalculated based on the electricity emission factor of 2021.

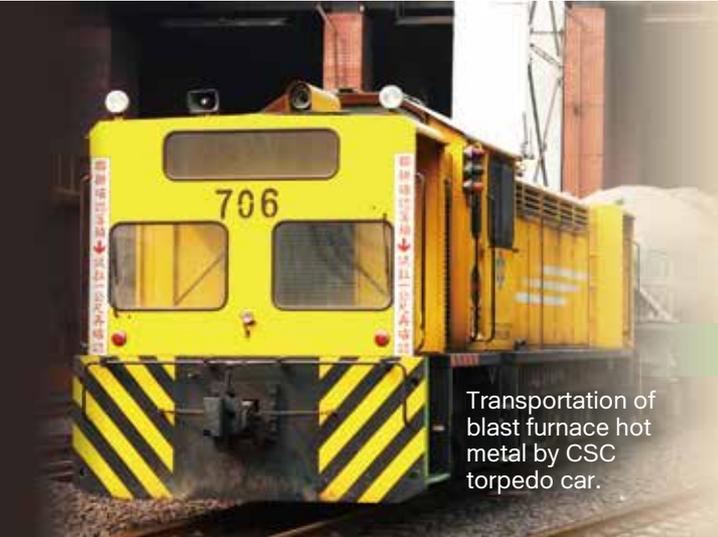
Note III: Since 2021, CSC conducted its GHG inventory according to ISO 14064-1:2018.

Note IV: CSC is a steel company with revenue exceeding 10 billion TWD, and is required to disclose standalone figures for the parent company according to the Roadmap for the Sustainable Development of Listed Companies.

+ For more details [The Scope 3 Emission] https://www.csc.com.tw/csc_e/hr/csr/env/env3.htm

Feature

Dedicated to Energy Saving and Carbon Reduction - Hot Metal Recovery in Torpedo Car Slag Removal Station



Transportation of blast furnace hot metal by CSC torpedo car.

Maximizing Energy saving benefit

Add recycle ladle and fuel-gas pipes

Select full oxygen preheater

Install electric control equipment



CSC was awarded for excellent manufacturer of voluntary reduction of GHGs in 2022, and listed 136 voluntary GHG reduction projects, including reheating furnace replacement and production allocation optimization. The Industrial Development Bureau verified that carbon emissions were reduced by 79,216 tonnes CO₂e, which is 204 times the carbon absorption of Da'an Forest Park. The project for "hot metal recovery in torpedo car slag removal station" had the most significant carbon reduction effect.

Implementation process

Torpedo cars are responsible for carrying hot metal from the blast furnace to be discharged at the basic oxygen furnace. Due to slag accumulation at the mouth of the torpedo car and limited rotation angle, residual hot metal was not cleared from the torpedo car. Before the hot metal recovery equipment was installed, after using machinery to remove the slag in a torpedo car, residual hot metal will be dumped with the slag on the ground for cooling, resulting in heat loss of the hot metal. Material transport in the subsequent hot metal process also consumes electricity. Hence, CSC plans to install hot metal recovery equipment at the slag removal station, in order to increase the amount of hot metal recovered from torpedo cars and reduce electricity consumption.

Implementation plan and progress

A ladle needs to be added to temporarily store hot metal when recovering residual hot metal from torpedo cars at the slag removal station. To prevent the hot metal from solidifying, a preheating system must be installed to heat the ladle to 1,200°C and above. Hence, CSC invested in a ladle preheating system, fuel-gas pipes, electrical control system, CO safety concentration detection system, and transport equipment. During the design phase, considering that traditional air pre-heaters use COG and air for preheating, the relatively low oxygen concentration in air results in relatively low heat value and is more energy-consuming, CSC selected the best preheating technology available after evaluation, and will use a full oxygen preheater in the latest revamp, using COG and oxygen for preheating, which will significantly reduce fuel-gas consumption when preheating the ladle.

ESG benefits



From an environmental perspective, CSC can reduce hot metal consumption and repetitive use of energy through the optimization project, which will reduce GHG emissions by 31,059 tonnes CO₂e per year and save 1.03 million kWh of electricity from transporting raw materials. From a social perspective, improvement methods of the project will first be used by domestic steel companies, and CSC hopes to promote the methods to other steel companies through regular exchange events on energy conservation technologies, helping achieve a low carbon society. From an economic perspective, the project reduces cost by nearly 55 million TWD and provides benefits in energy conservation, carbon reduction, and cost reduction.

5.3.1 Process Improvement

CSC has been devoted to process improvement, which includes production development, energy saving technology implementation, energy efficiency optimization, energy generation improvement, pollution reduction and operation development. The methods are:

▶ Development of low-carbon ironmaking :

At CSC, 3 core technologies has been arranged for the development of low-carbon blast furnace ironmaking technology, including (1) charging low carbon iron-bearing materials ; (2) hydrogen-rich gas injection; (3) top gas refined by the removal of CO₂. CSC has successfully developed the technology to charge the reduced iron nuggets into blast furnace.

Before the green hydrogen becomes available, the coke oven gas which has a high hydrogen content will be injected into the blast furnaces of CSC as the replacement of coal for the reduction of CO₂ emissions. To evaluate the performance of injection lance configurations and the safety operation arrangements, the Technology Division of CSC has set a budget for the one tuyere hydrogen-rich gas injection project from the end of 2023 to 2024. In association with academic resources, CSC has organised a research team for the project entitled low carbon blast furnace ironmaking technology. The project has been approved and funded by National Science and Technology Council as the Forward-Looking Technology and Industry-Academia Collaboration Project (Large Alliance). The project has been carried since November 2022 with 16 research works included in the 3 core technologies mentioned above.

▶ Process improvement for energy conservation and carbon reduction:

Appropriately relaxed restrictions on high-strength structural steel, hot-rolled peritectic steel, and cold-rolled premium IF steel, and stabilize downstream product quality by raising liquid surface and controlling liquid steel overheating and pouring speed, which reduced CO₂ emissions by 5,078.2 tonnes CO₂e/year; lowered the straightening temperature of SCM440, high hardenability steel for molds and dies, from 905 °C to 680 °C , and reduced CO₂ emissions by approximately 0.007 tonnes CO₂e /tonne of steel; optimized the structure before bar and rod rolling through a process with rolling and cold control, saving fuel and electricity fees of fans when combined with the shortened spheroidizing process, which shortened the time of 50BV30 spheroidizing by 2 hours per furnace and is estimated to reduce CO₂ emissions by 48.1 tonnes CO₂e/year. Continued to optimize hot charging during hot-rolling and DHCR, set up a steel-making and rolling platform in sync with DHCR, and lowered energy consumption for heating; 140,000 tonnes of GHG offset credits were obtained by the Company through GHG reduction methodology in 2022, which is equal to 36 times the carbon absorption of Da'an Forest Park.

▶ Saving electricity and reducing fuel consumption:

CSC will develop the flue gas desulfurization (FGD) pump control technology for power houses to reduce electricity use in pumps, as well as the cross-process equipment control technology in the cooling water system for power houses to reduce the cost of purchased electricity. At the same time, the company will also develop the heating value prediction technology using production schedule and process data for basic oxygen furnaces and apply this technology to feed-forward control for Boilers #9 to #11 in Power Plant II. This technology can not only reduce main steam fluctuations and lower the opportunities for carbon emissions from main steam, but also increase boiler load. In 2022, CSC expanded the scope of application of the ladle pure oxygen preheating system, and added one more pure oxygen ladle preheating stand. Furthermore, energy conservation was extended to preheating of the liquid steel distributor. Adjustment to the combustion system reduced fuel consumption by 15%. CSC developed core technologies for centrifugal compressor, including performance analysis technology and vibration strength analysis technology. The level 1-3 blisks of the TAE120 in #4 compressed air station was used for verification, and analyzed that the margin of error in efficiency and measurements was less than 5%; average modal assurance criterion is greater than 0.7. A design method for improving efficiency by 2% was proposed and will be applied in 2023.

+ For more details [Green Life] https://www.csc.com.tw/csc_e/hr/csr/env/env12.htm

+ For more details [Green Building] https://www.csc.com.tw/csc_e/hr/csr/env/env7.htm

+ For more details [Biodiversity] https://www.csc.com.tw/csc_e/hr/csr/env/soc3.htm



Employees Care

CHAPTER



- 
- 6.1 Recruitment and Retention
 - 6.2 Joyful Workplace
 - 6.3 Employee Rights
 - 6.4 Competency Development
 - 6.5 Occupational Safety and Health

6.1 Recruitment and Retention

Human resources are the foundation of business operations. CSC protects employee rights with a sound system to attract and retain talents. The employees are allowed to give full scope to their talents in the right positions to keep the competitiveness of the company. CSC strictly follows the Labor Standards Act and never hires underage employees. To ensure the basic human rights of employment equality, employees are hired only based on expertise and experience. Discrimination based on ethnic origin, thought, religion, political affiliation, place of origin, place of birth, gender, sexual orientation, marital status, appearance, disability, or past labor union membership is prohibited.

By the end of 2022, the CSC workforce consisted of 17,434 people, of whom 9,668 were regular employees (9,324 males and 344 females), 7,721 were contractors (6,333 males and 1,388 females; mainly maintenance and operations contractors), and 45 were dispatched workers (2 males and 43 females, mainly for paperwork and general affairs). The contractors account for a large proportion of the CSC workforce mainly because CSC's industrial structure has many short-term outsourcing projects.

The average age of employees was 42.6 and the average tenure was 14.81 years. All of the regular employees are from Taiwan, no foreign employees were hired. CSC is an integrated steel plant. There are more male employees than female employees due to the industrial characteristic, resulting in an unbalanced gender ratio. However, CSC remains steadfast in building a diverse workplace. The female employee ratio rises every year. In the department other than production functions, such as administration, finance, and planning, female employees account for 29%.

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

Total <small>Note</small>	2020		2021		2022	
	Employees	Ratio	Employees	Ratio	Employees	Ratio
	9,961	100%	9,794	100%	9,668	100%
Gender						
Male	9620	96.58%	9,452	96.51%	9,324	96.44%
Female	341	3.42%	342	3.49%	344	3.56%
Region						
Kaohsiung	9815	98.53%	9,682	98.86%	9,559	98.87%
Taipei	15	0.15%	16	0.16%	14	0.15%
New Taipei	57	0.57%	40	0.41%	39	0.4%
Hualien	16	0.16%	16	0.16%	15	0.16%
Overseas	58	0.58%	40	0.41%	41	0.42%
Age						
18-29	1,330	13.36%	1,421	14.51%	1,472	15.22%
30-39	3,054	30.66%	2,963	30.25%	2,956	30.58%
40-49	2,158	21.66%	2,475	25.27%	2,777	28.72%
50-59	1,626	16.32%	1,360	13.89%	1,071	11.08%
≥ 60	1,793	18.00%	1,575	16.08%	1,392	14.40%

	2020		2021		2022	
	Employees	Ratio	Employees	Ratio	Employees	Ratio
Education						
Doctorate	184	1.85%	191	1.95%	191	1.97%
Master	1,948	19.56%	1,939	19.8%	1,977	20.45%
Bachelor	4,151	41.67%	4,453	45.28%	4,749	49.12%
Junior college	920	9.24%	875	8.93%	811	8.39%
Senior high/ Vocational and below	2,758	27.68%	2,354	24.04%	1,940	20.07%

Note: All the employees at CSC are permanent (full-time) employees. Hence, there are no temporary, non-guaranteed hours or part-time employees at the company. The numbers are calculated based on the figures available on December 31 of the current year.

Item	Category	Contractors			Dispatched workers		
		2020	2021	2022	2020	2021	2022
Total number of non-employees		8,148	8,238	7,721	36	37	45
Gender	Male	7,479	6,781	6,333	2	2	2
	Female	769	1,457	1,388	34	35	43
Contractual relationship with CSC		Indirectly employed via contractors			Dispatched via dispatch work agencies		
Type of work		In-plant projects or labor work			Administrative affairs		

Note: The numbers are calculated based on the figures available on December 31 of the current year.

6.1.1 Workforce

The total number of new employees in 2022 was 527, mainly in the 20 to 30-years-old age group from the southern region of Taiwan, which helped increase local youth employment opportunities. From 2011 on, an average of 576 people have been employed each year, and the new hire turnover rate was 2.66% in 2022.

New Hires Distribution	New Hires Distribution in 2020-2022					
	2020		2021		2022	
	Employees	Ratio (%)	Employees	Ratio (%)	Employees	Ratio (%)
	406	4.08%	487	4.97%	527	5.45%
Gender						
Male	392	3.94%	469	4.79%	512	5.30%
Female	14	0.14%	18	0.18%	15	0.15%
Region						
Northern	13	0.13%	22	0.22%	16	0.16%
Central	22	0.22%	30	0.31%	22	0.23%
Southern	370	3.71%	432	4.41%	488	5.05%
Eastern	1	0.01%	2	0.02%	1	0.01%
Others	0	0%	1	0.01%	0	0.00%
Age						
18-29	244	2.45%	333	3.4%	298	3.08%
30-39	141	1.42%	135	1.38%	199	2.06%
≥ 40	21	0.21%	19	0.19%	30	0.31%

Note: General Employees Rate = number of new hires ÷ total regular employees x100%.

6.1.2 Workforce Structure

Employee Position Distribution

Position	Year	Female employees	Male employees	Local employees ^(I)	Total
Share of all employees	2022	3.56%	96.44%	79.52%	9,668
	2021	3.49%	96.51%	80.30%	9,794
	2020	3.42%	96.58%	81.03%	9,961

Share of management positions	2022	1.66%	98.34%	81.88%	1,264
	2021	1.38%	98.62%	81.22%	1,230
	2020	1.19%	98.81%	81.11%	1,260

Share of junior management positions	2022	1.08%	98.92%	79.44%	647
	2021	0.78%	99.22%	78.81%	637
	2020	0.74%	99.26%	78.31%	673

Share of senior management positions (CEO ≤ Two job levels)	2022	1.22%	98.78%	84.15%	82
	2021	2.41%	97.59%	86.75%	83
	2020	2.38%	97.62%	89.29%	84

Share of management positions in revenue-generating functions	2022	0.92%	99.08%	81.83%	1,200
	2021	0.76%	99.24%	81.70%	1,186
	2020	0.49%	99.51%	81.44%	1,218

Note: The revenue-generating functions refer to the company's Commercial Division, Production Division, Technology Division, and Engineering Division.

Share of STEM (Science, Technology, Engineering, Mathematics) related positions	2022	5.22%	94.78%	73.71%	1,206
	2021	5.53%	94.47%	73.57%	976
	2020	5.75%	94.25%	75.35%	1,270

Note I: Local employees refers to the number of employees whose permanent address is in Kaohsiung.

6.1.3 Turnover

The personnel change, resignation, and retirement of employees are handled according to relevant CSC regulations. Regular employees can apply for retirement at the age 65 or for voluntary retirement at an earlier age with reference to the Labor Standards Act. Personnel change is discussed by the line manager with the employee before the change and will be announced only after and with employee consent. In the case of difficulties in labor service performance arising from a personnel change, employees may request for termination of employment contract or file a grievance within 30 calendar days of personnel change. If grievance is rejected, employees can request for termination of employment contract within 10 calendar days of grievance rejection.

CSC has established the “Directions for Handling Employee Voluntary Resignation and Retirement” and the “Directions for Handling Compensations for Retirement, Relief, Occupational Accidents, and Layoffs” to institutionalize applications for voluntary resignation and retirement. In 2022, a total of 621 people left the company, representing a turnover rate of 6.42%. 532 of them, who were 60 years old or above, exited the company mainly because they have reached the retirement age.

General Employees Turnover Rate in 2020-2022						
General employee attrition number	2020		2021		2022	
	Employees	Ratio (%)	Employees	Ratio (%)	Employees	Ratio (%)
		658	6.61%	742	7.57%	621
Voluntary turnover rate	656	6.59%	742	7.57%	619	6.40%
Gender						
Male	643	6.46%	719	7.34%	604	6.25%
Female	15	0.15%	23	0.23%	17	0.17%
Region						
Northern	6	0.06%	2	0.02%	7	0.07%
Central	3	0.03%	0	0%	1	0.01%
Southern	645	6.48%	738	7.53%	611	6.32%
Eastern	3	0.03%	2	0.02%	2	0.02%
Others	1	0.01%	0	0%	0	0.00%
Age						
18-29	20	0.20%	38	0.39%	27	0.28%
30-39	27	0.27%	31	0.31%	37	0.38%
40-49	9	0.09%	29	0.3%	19	0.20%
50-59	13	0.13%	17	0.17%	6	0.06%
≥ 60	589	5.92%	627	6.4%	532	5.50%

Note I : General employee turnover rate = number of turnover ÷ number of total regular employee x 100%.

Note II : General employee turnover excluding retirement in 2022 was: 91 people; the turnover rate was 0.94%.

• Maternal Leave and Parental Leave

CSC policies regarding maternal leave and parental leave comply with government regulations. The rate of employees returning to work after maternal/parental leave is 100% in 2022 which shows the friendliness and the adaptability of colleagues when they return to the workplace.

6.2 Joyful Workplace

+ For more details [Joyful Workplace] https://www.csc.com.tw/csc_e/hr/csr/em/em2.htm

6.2.1 Compensation Management

Employee remuneration includes basic salary (base salary, meal allowance, and allowance for special work environments or special maintenance), year-end bonus, and production/sales profit bonus. Employees are remunerated based on their duty, current market wage standards, the company financial status, and organizational structure. Pay is determined without gender-based differences, and the basic salary paid to women and men of the same position and level is the same. In 2022, the average remuneration of regular employees in non-managerial positions (senior management level and below) is 1.595 million TWD, and median is 1.495 million TWD.

Item	2020	2021	2022
(1) Annual total compensation for the organization's highest paid-individual / Median annual total compensation for all of the organization's employees excluding the highest-paid individual	4.2~8.4	6.7~13.5	6.7~10
(2) Percentage increase in annual total compensation for the organization's highest-paid individual / Median percentage increase in annual total compensation for all of the organization's employees excluding the highest-paid individual	0	1.9	1.2~1.8

6.2.2 Welfare

CSC Employee Welfare Committee, which comprises 27 members from the employers and employees, was established to provide welfare facilities such as employee convenience shop, cafeteria, resort, single dormitory, gym, commute bus, laundry service and reading room (employee convenience shop, cafeteria, gym, kindergarten, and reading room are also opened to contractors and local residents). CSC Employee Welfare Section handles welfare services and conducts satisfaction surveys. The average satisfaction score in 2022 was 85.1.

Furthermore, to make it more convenient for employees to take care of their families and pick up/drop off their children, the Company implements flexible working hours. Day shift employees can adjust their

working hours in increments of 30 minutes after obtaining approval from their supervisor. Apart from setting up breastfeeding and lactation rooms, CSC has also drawn up a group insurance for employees. Starting in 2021, CSC has not only added overseas outpatient insurance coverage to the aforesaid group insurance, but also taken out the “Notifiable Communicable Disease Health Insurance” in Taiwan for this group of employees, which covers COVID-19 and other communicable diseases announced by the Ministry of Health and Welfare.

CSC established the “Regulations Governing Leave and Subsidies for COVID-19 Quarantine and Isolation” after reaching a consensus with the Labor Union of China Steel Corporation (LUCSC) in a labor-management meeting, in order to ensure that employees can undergo isolation or quarantine for non-work-related reasons with peace of mind. According to these regulations, employees who apply for unpaid COVID-19 isolation or quarantine leave over the period from the beginning of Level 2 COVID-19 alert to December 31, 2022 are entitled to receive a daily subsidy of 1,000 TWD for a maximum of 14 days each time. A total of 1,213 people applied for subsidies with total subsidy amount reaching 4.23 million TWD. The Company divided employees into different groups and implemented work from home in coordination with the government's epidemic prevention policy in 2022 to prevent cluster infections. The Company also provided employees diagnosed with COVID-19 with sick leave that does not affect their attendance. If an employee still tests positive after the statutory quarantine period has ended, an additional 2 days of paid quarantine leave is provided, so that all employees will have less to worry about at work.

Event	Summary
Cafeteria	<ul style="list-style-type: none"> CSC Employee Welfare Committee operates a cafeteria, Ming Pang Hall, and restaurants in the CSC Group Resort. These facilities offer a variety of dining options, including Chinese and Western-style buffets, boxed meals, and banquet.
Store (Shopping center and convenience store)	<ul style="list-style-type: none"> The shopping center at CSC operates like a supermarket and includes a bakery section offering a variety of bread, pastries, and cakes. Additionally, both the CSC Group Resort and the shopping center feature convenience stores to meet the needs of employees.
Employees Residence	<ul style="list-style-type: none"> Priority will be given to new employees whose original residence is outside Kaohsiung city; there were 1,002 applications in 2022.
Shuttle Bus	<ul style="list-style-type: none"> CSC encourages employees to take public transportation to work for energy conservation and carbon reduction. The Employee Welfare Committee signed a contract with a bus company and provided subsidies for commute fare. Currently, there are currently 20 routes serving approximately 700 employees who take the commute buses.
Gym	<ul style="list-style-type: none"> The fitness center has a SPA, a heated swimming pool, a billiard room, a basketball court, a badminton court, a table tennis room, and a ballroom for employees, their family members, and residents of Xiaogang District. The center was temporarily closed in May 2022 due to COVID-19 restrictions but reopened to specific members in July 2022.
Childbirth Gifts	<ul style="list-style-type: none"> In 2022, CSC Employee Welfare Committee distributed childbirth cash gifts to a total of 1.39 million TWD.
Education Scholarships	<ul style="list-style-type: none"> CSC offers scholarships for employees' children at all education levels from elementary school. In 2022, CSC received a total of 9,981 scholarship applications and awarded a total of 19.86 million TWD in scholarships (of which 890,000 TWD were allocated to CSC employees).

Event	Summary
Group Insurance from the Employee Welfare Committee	<ul style="list-style-type: none"> In order to improve the rights and benefits of all employees, the CSC Employee Welfare Committee engaged in negotiations with insurance companies to establish a group insurance plan specifically for union members. This comprehensive group insurance covers not only union members but also their spouses, children, and parents. The insurance package includes group life insurance, accident insurance, medical and hospitalization insurance, as well as coverage for cancer-related medical expenses. Additionally, in response to a significant local COVID-19 outbreak in May 2021, union members were provided with COVID-19 insurance that covers the duration of one year to address the pandemic situation.
CSC Kindergarten	<ul style="list-style-type: none"> The kindergarten was established with the support and guidance of CSC Employee Welfare Committee. It aims to create a nurturing and friendly environment for children, with priority given to the enrollment of children of CSC employees.
Club activities	<ul style="list-style-type: none"> CSC Employee Welfare Committee has set up 41 clubs and allots a budget to organize various activities, including sports, fitness, leisure, art and religion events. These initiatives aim to promote club activities and enhance the mental and physical well-being of their members.
Flexible welfare points subsidies	<ul style="list-style-type: none"> CSC Employee Welfare Committee annually distributes welfare points from its budget and allows employees to choose benefits according to their individual needs. Currently, there are 16 items available for selection. Particularly, provisions have been made to cater for the needs of elderly employees, including whole body health examinations, nursing services, optional additional catastrophic illness insurance, and access to telemedicine.
Health examination	<ul style="list-style-type: none"> The items and frequency of employee health examinations are better than required by law, please refer to the Chapter 6.5.2 Health Care for details.

6.2.3 Work-life Balance

- Regulations on employee leaves are superior to regulatory standards**

Leave	Number of day	Explanation
Children' s Wedding Hosting Leave	2	<ul style="list-style-type: none"> Not clearly stated in current regulations.
Marriage Leave	9	<ul style="list-style-type: none"> Superior to the 8-day leave stated by the Labor Standards Act of the Ministry of Labor.
Leave for Prenatal Visit	8	<ul style="list-style-type: none"> Superior to the 7 days stated by the Labor Standards Act of the Ministry of Labor.
Special Leave for New Employees	One day annual leave will be given after 3 months of employment	<ul style="list-style-type: none"> Superior to the 3-day leave given for new employees after 6 months of employment stated by the Labor Standards Act of the Ministry of Labor.
Funeral Leave	1 ~ 14	<ul style="list-style-type: none"> Depending on whom the funeral is for, the number of days may vary. If the funeral is held for a (foster) parent or spouse, 14 days are given, which is superior to the 10-day leave stated by the Regulations of Leave-Taking of Workers of MOL.

• Employee Assistance Program

CSC arranged for professional counselors from the Teacher Chang Foundation to provide counseling sessions at its plants, and offered distance consultation during the pandemic on a trial basis. Information on "Combating the COVID-19 Mental Health Crisis among the Public" was published, and two psychological adaptation seminars on "family relationship" and "interpersonal communication in the workplace" were organized to help employees relieve psychological stress. In addition to providing legal advice, the Employee Welfare Committee has also set up a mediation committee to help employees and their dependents mediate civil cases or other matters.

• Family Bonding Activities - Organized by CSC

CSC has formulated the Rules for Family Bonding Activities aimed at inviting employees and their dependents to participate in various outdoor activities, such as mountaineering, hiking and trekking, outside its plants. In 2022, a total of 9,576 people applied for subsidies for family bonding activities, which benefited domestic travel.

• CSC 51st Anniversary Celebration and Year-end Raffle

In 2022, CSC celebrated its 51st anniversary with a special event held at Kaohsiung's Shoushan Zoo on December 10. The event was themed "CSC WE 51 CAN" and aimed to inspire all employees to contribute towards a sustainable future and embrace environmental, social, and governance (ESG) practices. 7,300 employees and their family members participated in the event, and created a joyful and inclusive atmosphere.

• Club Activities

CSC places great importance on enhancing employees' engagement through club activities. By the end of 2022, CSC Employee Welfare Committee had established a total of 41 clubs, along with dedicated leisure sports venues.



6.2.4 Services for Retired Employees

In response to the coming retirement wave, CSC Retirees Services Section was established. For retirees to contribute to society, the Services Section encourages them to attend senior citizens learning centers or voluntary activities. In addition, CSC Retirees LOHAS Society was established by CSC Group retirees for healthy lifestyles and social welfare activities.

6.3 Employee Rights



6.3.1 Labor/management Relations

Owing to its strong commitment to labor relations, CSC holds labor-management meetings monthly. A total of 12 labor-management meetings were convened throughout the year to strengthen labor-management cooperation and improve work efficiency on an ongoing basis. On top of that, with a view to encouraging exchange of ideas and uncovering problems at its plants (or departments) (including second echelon units of subordinate departments), each plant (or department) is required to organize forums to communicate with employees every two (or three) months. These forums are intended to gather opinions from employees and seek solutions together, thereby enhancing employees' sense of belonging to the company. A total of 212 communication forums (approximately 3,938 participants) were held in 2022.

- **Collective Agreements**

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

5th collective agreement was held on August 15, 2019. In the meeting, labor benefits that are better than the regulations were added, which includes one day plus in wedding leave, marriage Leave, children' s wedding hosting leave, and leave for prenatal visit to meet the needs of members in different age groups. Meanwhile, this revision aims to be in line with national policy to raise fertility. It is hoped that the employer and employees, through stable Labor/management relations, can create a positive and friendly workplace to enhance corporate competitiveness.

6.3.2 Labor Union of CSC

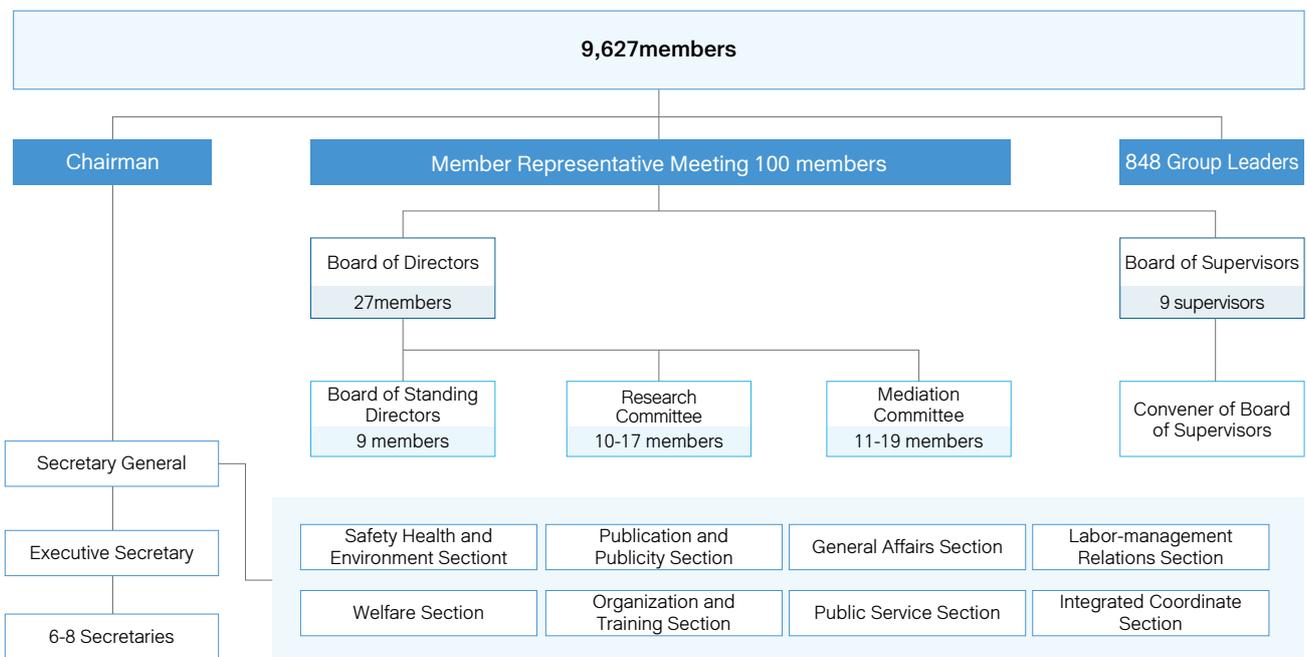
Founded on December 30, 1980 with a vision to “develop the production business, promote unity among members, safeguard members' rights, improve members' lives, and enhance members' competencies,”

the Labor Union of China Steel Corporation (LUCSC) is made up of employees who hold the positions of second echelon manager and assistant manager or below at each department. Having been established for 40 years, LUCSC is not only one of the largest labor union for “a single factory” in Taiwan at present, but also the first in the country to realize union democracy. LUCSC faces demand from its members with an open attitude, pioneers the direct election approach in the election of chairman, enhances the bargaining power of labor unions, and fights for the best welfare benefits for its members.

• **Organization**

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

The Labor Union of CSC Organization Framework



• **Pursuit of Labor Rights and Benefits**

The Labor Union of CSC pursues labor rights and benefits, including labor-management meetings, seminars with directors and management, and collective bargaining.

+ For more details [CSC Labor Union] https://www.csc.com.tw/csc_e/hr/csr/em/em3.htm#em-uni

6.3.3 Human Rights Protection

+ For more details [Human Rights Protection] https://www.csc.com.tw/csc_e/hr/csr/em/em3.htm

• CSC Human Rights Policy

CSC complies with local laws and regulations of its business locations worldwide, and supports and complies with principles and spirit set forth in the Universal Declaration of Human Rights, International Covenant on Economic, Social and Cultural Rights (ICESCR), International Covenant on Civil and Political Rights, UN Global Compact (UNGC), and International Labour Organization Declaration on Fundamental Principles and Rights at Work. We treat our employees and the personnel of our contractors with dignity and respect, and prevent any conduct that infringes upon and violates human rights.

CSC’s Human Rights Policy is applicable to units at all levels. Ongoing improvements are also made to the management of human rights issues at the company. CSC pays particular attention to the following issues:



Human rights due diligence flowchart



We conducted company-wide human rights due diligence in 2022, and proposed improvement measures based on results, in hopes of lowering the probability of human rights risks.

Human rights due diligence results

Topic of concern	Investigation subjects	Preventive and mitigation measures	2022 Investigation results
Eliminate discrimination and ensure equal employment opportunity	Employees	<ul style="list-style-type: none"> We provide interview training to interviewers, stress that unlawful discrimination is prohibited, and comply with the Employment Service Act and relevant laws and regulations. 	Did not receive internal or external complaints or receive fines from the government during the year.
Prohibit the use of child labor		<ul style="list-style-type: none"> Applicants provide their personal data for verification during the registration stage, and their identity is verified during interviews and when they report for duty. 	
Ban on forced labor		<ul style="list-style-type: none"> Working hours is managed by a system according to government laws. Employees are encouraged to take leave during the off-peak period to relax their body and mind. 	
Freedom of association and collective bargaining rights		<ul style="list-style-type: none"> CSC labor union covers 100% of its full-time employees.. Labor/management meetings are convened on a monthly basis, and there is a website regarding labor/management meeting for employees to inquire about the progress of agenda items. 	

Topic of concern	Investigation subjects	Preventive and mitigation measures	2022 Investigation results
Provide a safe and healthy work environment	Employees	<ul style="list-style-type: none"> The inspection guidance project was implemented in 13 factories and 17 subsidiaries of the CSC Group. Daily deployment of personnel to conduct audits of high-risk operations within the company, with occasional nighttime inspections. Organizing training programs for supervisory personnel responsible for overseeing high-risk operations of subcontractors, and conducting "Frontline Supervisor Safety and Health Training" for company supervisors at the grassroots level. Providing guidance and support to contractors with a higher incidence of accidents to enhance their self-management capabilities in safety and health. 	CSC was fined a total of 360,000 TWD by the Labor Standards Inspection Office of Kaohsiung City Government in 2022

In accordance with the Regulations for Prevention Measures, Complaints, Correction and Punishment of Sexual Harassment promulgated by the Social Affairs Bureau of Kaohsiung City Government, the amendments made by the company comprised the introduction of an investigation team and an external expert mechanism. On top of that, sexual harassment prevention announcement are carried out via electronic documents sent to all employees. Each unit at the company is also required to put up written statements and stickers regarding the prohibition and prevention of sexual harassment in appropriate places at the unit, so as to prohibit any sexual harassment incidents. With a view to safeguarding employees' rights, CSC has also set up grievance channels in place, which can be used by employees when their legitimate rights are violated, they suffer from improper treatment, or their problems cannot be resolved. The Company's regulations governing the complaint system and sexual harassment complaints, as well as complaint forms are available on the internal website. Sexual harassment prevention is communicated during new employee training, and employees can express their opinions through the following channels:

Topic of concern	2022 Investigation Results
Grievance System/Hotline	<ul style="list-style-type: none"> For employees who feel their rights have been violated, or when their problems are not reasonably solved after they have followed the standard administrative procedures to file complaints about difficulties in work. The regulation stipulate that the contents of complaints must be kept strictly confidential and may not be leaked. The contents are handled as confidential documents to ensure that the human rights of complainants are protected.
Labor Union of CSC	<ul style="list-style-type: none"> Members can submit the complaint to the union.
Periodic communication meetings of factories	<ul style="list-style-type: none"> Discusses benefits, rights, and improvements that each unit needs to make
Labor/management meetings	<ul style="list-style-type: none"> Discusses the improvement of work conditions, improvement of benefits, improvement of work efficiency, coordinating labor-management relations, and facilitating cooperation between labor and management.
Occupational Safety & Hygiene Committee	<ul style="list-style-type: none"> Regarding safety, health, environmental protection, etc.
Employee Welfare Committee	<ul style="list-style-type: none"> Employee Welfare and Benefits.
Employees' Retirement Reserve Fund Supervisory Committee	<ul style="list-style-type: none"> Storing, using, and managing retire reserve funds.
Sexual Harassment Grievance Committee	<ul style="list-style-type: none"> The Committee is responsible for handling sexual harassment grievances in the workplace and providing a work environment without sexual harassment. The regulations expressly state that personnel participating in the investigation, review, resolution, and handling of sexual harassment complaints shall maintain the confidentiality of the contents of the complaint. The case shall be handled as a confidential document to protect the human rights of the parties.

Human rights requirements set forth in the Supplier Code of Conduct include requiring suppliers to ensure that their products do not use minerals that directly or indirectly finance violence, violation of human rights, or criminals or crime organizations; human rights of laborers, freedom of employment, prohibit the use of child labor, work hours shall not exceed the limit set forth by local laws, humane treatment, anti-discrimination, etc.

Meanwhile, each plant (or department) organizes forums to communicate with employees every two to three months, while union representatives are also invited to attend these forums. The items discussed in these forums are also tracked on an ongoing basis. All new employees are required to undergo human rights-related training (including contents such as anti-harassment and anti-discrimination) as part of new employee training, whereas all senior employees have attended human rights-related training. In 2022, CSC conducted 1,539 hours of human rights-related training with 513 attendees; on the other hand, 10,769 hours of related communication and awareness sessions were also conducted.

6.4 Competency Development

+ For more details [Competency Development] https://www.csc.com.tw/csc_e/hr/csr/em/em6.htm#em-Car

6.4.1 Training Framework

In response to senior employees' retirement trend, younger generation recruitment, and digital transformation in plants, CSC focuses on four main pillars in talent cultivation: general training, professional skills handover, cultivate AI talents, and learning organization setup. Training courses in 2022 mainly include AI training, management, language, professional studies (technology, quality management), computer, EHS, new employee training, management training, and general training. Training expenses in 2022 reached 49,186,812 TWD and average training expenses per person was 5,065 TWD. Not only will the employees be educated and trained immediately after onboarding, but they will also continue to explore and review organizational and personal needs during the development process, and gradually carry out necessary training at any time to enhance the knowledge and skills required for personal career development.

6.4.2 Career Development

- ▶ **Promotion for technical positions** : CSC established channels for entry-level employees to be promoted to professional-level positions and entry-level managers; a total of 17 entry-level employees were promoted to level 4 managers in 2022.
- ▶ **Internal hires** : Based on the philosophy of putting the right talent in the right position for career development, CSC also provides internal recruitment channels, and a total of 15 employees were transferred to other job positions through internal hires in 2022.
- ▶ **Domestic and overseas training** : To enhance production, R&D, technology, management, and foreign language abilities, CSC selects qualified employees, professionals, and managers needed for its strategy of diversification and internationalization every year to take a paid leave to study in academic institutions in Taiwan or overseas. The Company bears the tuition, necessary travel

expenses, and meals and miscellaneous expenses of selected employees. 3 employees were sent for domestic Ph.D. study in 2021. The overseas program was suspended due to COVID-19 in 2022.

6.5 Occupational Safety and Health


Material Topic

6.5.1 Occupational Safety



CORRESPONDING TAIWAN' S SDGS (T-SDGS) :
CORE GOAL
3 · 8 · 9

2022 Highlights

- + Development of hot work training system for multi-user immersive collaboration
- + Implementation of the large vehicle blind spot detection system installation project

Policy or Commitment

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

Management Approach

The occupational safety and health management in CSC is mainly based on the occupational safety and health management system (ISO 45001 & CNS 45001). With the continuous improvement of the PDCA, the “Occupational Safety and Health Committee (OSH Committee)” also convenes meetings regularly to review the performance indicators of each unit, improve the working and environmental safety of colleagues, and promote health care.

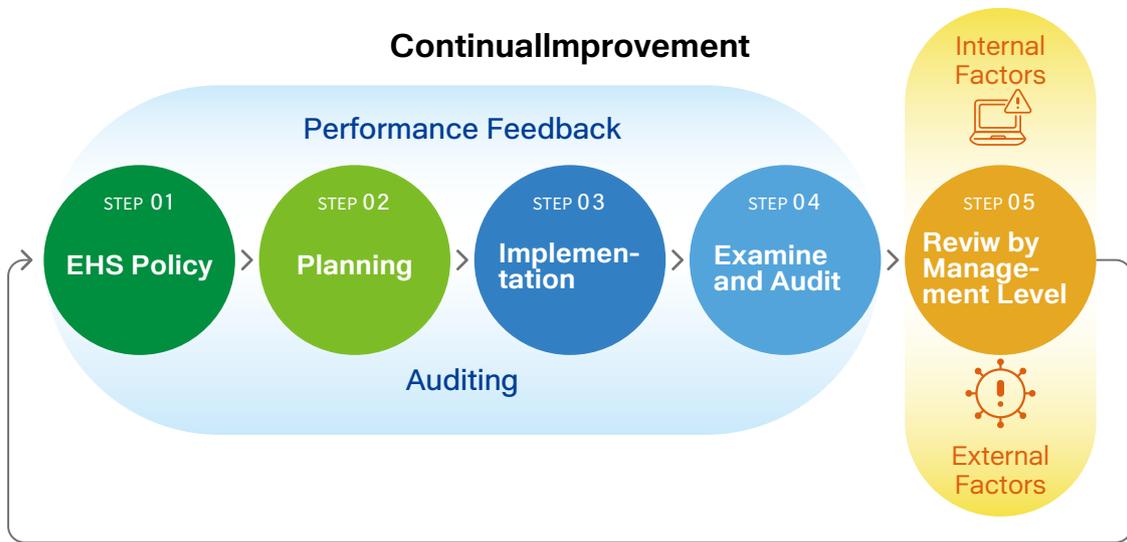
There are two performance indicators for assessing occupational safety and health: One is an active indicator such as near miss incidents or proposal of safety and health; the other is a passive indicator such as accident experience, administrative sanction, and audit results. Apart from compliance with occupational safety regulations, CSC has increased the frequency of health check-ups with more tests added, and requested each employee to take the physical safety training. These measures, superior to the current legislation, can help increase employees' safety awareness and promote health caring.

+ [For more details \[Contractor Occupational Safety and Health Management\], please refer to 4.1.4](#)

► Occupational Safety and Health Management System

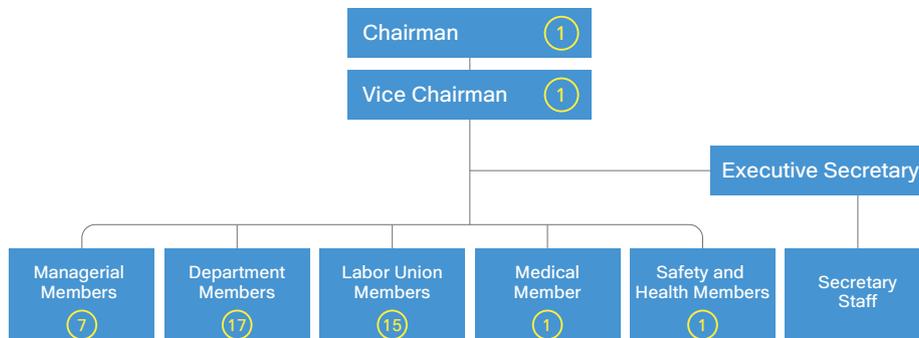
For continual improvement on our management in occupation safety and health, CSC introduced the occupational safety and health management system (OSHMS) in 2000, and obtained certifications on OHSAS 18001 (2002) and TOSHMS (2008, TOSHMS is also known as CNS 15506). The scope of safety and health management system applies to all employees and workers in CSC. Contractors have to follow the CSC safety regulations as well. To comply with the new ISO 45001:2018/TOSHMS (CNS 45001:2018), CSC revised the current regulation and obtained the new certification from BSI in June 2020.

► CSC Occupational Safety and Health Management System Flow Chart



► Occupational Safety & Health Committee

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



► Liability and Grievance Mechanism

Each factory and department convenes a meeting with Occupational Safety and Health Committee every month to communicate opinions and publicize company policies. If the relevant opinions are company-

related, they can be raised during the quarterly communication session between the Industrial Safety & Hygiene Dept and Safety & Health Planning Engineers.

▶ **Annual Goal for OHS**

Year	2020		2021		2022	
Type	Target	Performance	Target	Performance	Target	Performance
Employee Disabling Frequency Rate (FR)	0.2	0.14	0.18	0.14	0.18	0.05
Number of Employee Disabling by Traffic Accidents in Commute	9	21	9	21	9	13
Contractor Disabling Frequency Rate (FR)	0.3	0.31	0.3	0.40	0.3	0.20
Zero major occupation accident	Zero Fatality	Achieved	Zero Fatality	Not Achieved	Zero Fatality	Achieved

Note I: One contractor fatal accident was reported on April 19, 2021.

 **Action Plan**

▶ **Safety Culture**

The goal of occupational safety management is to instill safety awareness and knowledge into every employee and form a so-called “workplace safety culture”. Employees are inspired to improve the environment and equipment by Employee Suggestion Program and Creative Development Activities. Employees and contractors formulate the workplace safety procedures after discussions and together ensure the compliance with the procedures. CSC offers “Non-disabling Reward.” If the company can reach 5 million man hours without disabling events, employees will be rewarded. The bonus raises as the non-disabling man hour accumulates. This encourages employees to value more about workplace safety.

CSC's safety culture is composed of the following three aspects.

Policy	Management	Individuals
Safety policy statement, organization management, and resources provision.	Building the corporate system framework by with responsibility, control of safe practices, licenses and training, rewards and punishment, audits, improvement results, and promotion of safety concerns plans.	Changing employee safety concept and improving personal safety culture with trainings, employee involvement, safety concerns, health caring, and interactive communication.

▶ **Training and Publicity**

CSC utilizes a computerized Safety and Health Training Management System to oversee the individual training records of all employees. In addition, CSC actively promotes bottom-up Safety SOP Revision to effectively control risks and minimize the probability of hazardous events.

CSC set up the “Physical safety Training Classroom” for physical safety training in 2009. Employees can combine theory and practice by experiencing the simulation in person and understand the hazards in workplace. A total of 441 new employees received training in 2022. CSC also helps subsidiaries, government agencies, and external organizations offer training or organize visits to raise awareness of

labor safety and fulfill corporate social responsibility. CSC assisted subsidiaries in offering 5 courses with a total of 64 trainees in 2022. In addition, CSC's affiliated Vocational Training Center (Physical Safety Center) achieved a Silver Award in the biennial Talent Quality-management System (TTSQ) assessment conducted by the Workforce Development Agency, Ministry of Labor in September 2022. This accomplishment underscores our commitment to regularly reviewing and continuously improving the quality of training.

Employees and Contractors

Course	2020		2021		2022	
	Sessions	Persons	Sessions	Persons	Sessions	Persons
On-the-job training for radiation protection staff, radiation staff and inspection staff for radioactive steel building materials	4	416	4	435	5	450
Transportation Safety Training	6	468	4	24	8	84
Basic training on safety management of explosion-proof electrical equipment	2	119	1	46	1	43
TS Certification Introduction and explosion-proof safety training	2	115	2	92	-	-
Production safety basic training	2	169	2	85	1	42
New work permit seminar	6	534	-	-	-	-

Employees

Course	2020		2021		2022	
	Sessions	Persons	Sessions	Persons	Sessions	Persons
Physical safety Training	63 (4 types)	629	15 (3 types)	141	41 (3 types)	460
OHS Internal auditor training	1	32	2	55	1	33
ISO 45001 Transition Promotion Meeting (Comparative Analysis)	1	31	2	17	1	29
Occupational Safety and Health Act	61 (11 types)	2,099	71 (11 types)	2,455	67 (15 types)	2,106

Contractors

Course	2020		2021		2022	
	Sessions	Persons	Sessions	Persons	Sessions	Persons
Training for replacing contractor certificates	63	2,855	69	2,130	106	3139
Physical safety training for replacing contractor certificates	1	11	1	7	0	0
Training for supervisors in contractor high-hazard operations	36 ^(I)	1,441	23	638	13	250

Note: I. This course started in August 2019. Since December 2019, the registration approach was changed from on-site registration to appointment registration based on demand. Students become qualified managers only after passing the test. The passing rate was 75%. Thus the course sessions increased.

II. The scope for all courses is the entire workforce of CSC.

Year	2020		2021		2022	
Category	Employee	Contractor	Contractor	Contractor	Employee	Contractor
Working Hours	21,801,886	25,417,493	20,921,313	22,690,862	20,976,151	19,519,409
Fatality	0	0	0	1	0	0
Disabling	3	8	3	8	1	4
Minor injuries	18	18	9	13	10	9
Medical treatment	17	13	11	12	10	12
Fatality rate ^(I)	0	0	0	0.04	0	0
LTIFR ^(II)	0.14	0.31	0.14	0.35	0.05	0.20
Disabling Frequency Rate ^(III)	0.14	0.31	0.14	0.40	0.05	0.20
TRIFR ^(IV)	1.74	1.53	1.10	1.50	1.00	1.28

Note: I. Fatality rate means the number of deaths per million working hours, the formula: Number of deaths caused by occupational injuries x 1,000,000 ÷ Total hours worked.

Note: II Using lost time injury frequency rate (LTIFR) to represent serious occupation injury rate. The LTIFR is the number of lost time injuries (disabling injuries) per million hours worked, calculated using the formula: Number of lost time injuries (disabling injuries) x 1,000,000 ÷ Total hours worked.

Note: III. Disabling Frequency Rate (F.R.) means the number of disabling (include deaths) per million working hour, the formula: Number of disabling caused by occupational injuries x 1,000,000 ÷ Total hours worked.

Note: IV. Total Recordable Injury Frequency Rate, TRIFR means the number of total recordable injury (include deaths, disabling, minor injuries and medical treatments) per million working hour, the formula: Number of total recordable injury x 1,000,000 ÷ Total hours worked.

Occupational Accident statistics

Total Disabling (excluding fatality)

Category	Falling	Pinch	Scald	Cut & Bruise	Collision	In-plant Traffic Accidents	Objects Drop	Others
Employee	1	0	0	0	0	0	0	0
Contractor	2	0	0	1	1	0	0	1

Minor Injuries

Category	Falling	Pinch	Rolling	Cut & Bruise	Improper action	scald	Collision	In-plant Traffic Accidents	Objects Drop	Others
Employee	0	3	0	2	0	0	4	0	1	0
Contractor	1	1	0	1	0	0	2	1	2	1

Medical treatment

Category	Falling	Pinch	Rolling	Electric shock	Cut & Bruise	Improper action	scald	Collision	In-plant Traffic Accidents	Objects Drop	Inhalation	Others
Employee	2	1	0	0	0	1	4	0	0	1	1	0
Contractor	5	0	0	0	0	0	1	2	4	0	0	0

In the occupational safety and health management system, companies are required to commit to regulatory compliance and identify relevant laws and regulations. CSC sends information about safety and health regulations to each dedicated unit using the legal compliance system, with the intention of identifying relevant laws and regulations to determine the regulations and places for which compliance is needed and prepare in advance. The Labor Inspection Office conducted a total of 53 on-site inspections in 2022, no negligence was found during the routine inspections, but fines of 360,000 TWD were imposed after incident investigations.

	Issuer	Count/Fine (TWD)
2020	-	0
2021	KLSIO	3/510,000
2022	KLSIO	3/360,000

In 2022, CSC received a number of fines totaling 360,000 TWD from the Labor Standards Inspection Office of Kaohsiung City Government, which conducted an on-site investigation on December 13, 2021 of the disabling injury incident involving a contractor of the Steelmaking Department on January 24, 2019. The investigation result found the Company in violation of Articles 26 and 27 of the Occupational Safety and Health Act, and the Company was fined 60,000 TWD and 150,000 TWD. The Labor Standards Inspection Office of Kaohsiung City Government on December 28, 2021 investigated the disabling injury of Vanguard Hyunion, a contractor of the rolling and utilizes department, and found the Company in violation of Article 27 of the Occupational Safety and Health Act, imposing a fine of 150,000 TWD.

To improve contractor management of the CSC Group, CSC's Safety and Health Department selected 13 factories and 17 subsidiaries of the CSC Group to implement the inspection guidance project in accordance with Articles 26 and 27 of the Occupational Safety and Health Act.

The project is implemented in six stages, including preliminary planning to diagnose the current status of contractor management. Each unit conducts a self-inspection, review, makes improvements and adjustments, and an on-site visit is made to provide guidance and understand the actual implementation by the affiliate. Examples of improvements completed by each unit are used as a template to inspect the compliance of other construction projects, and effective methods for improving contractor management are implemented.

Improvement Highlights

1. Establishment of a platform for promotional videos on labor safety

CSC established a video platform to integrate promotional videos on labor safety. Basic functions of the platform include select file source, search for type of operation or hazard, watch online, and number of views. The platform will be formally launched after it is optimized.

2. Large vehicle blind spot detection system installation project

The "CSC Large Vehicle Blind Spot Detection System Installation Project" was planned and implemented with Ada Automotive Electronic LTD. and InfoChamp Systems Corporation in two types of blind spot detection technologies, namely mmGHz and AI image recognition, for on-site units to use based on their actual needs.

The Project is implemented in three stages. In the first stage, large vehicle management and maintenance units are invited to on-site demonstrations. In the second stage, the system is installed in seven types of large vehicles common in CSC on a trial basis. In the final stage, 16 systems will be installed for promotion.

CSC drafts the fourth stage to continue promotion and continue to monitor the legislation progress for large vehicle blind spot detection systems.

6.5.2 Health Care

To provide comprehensive care for employees, CSC Clinic takes care of labor health protection matters on-site, offering all-inclusive services such as health management, occupational disease prevention, and health promotion. Our primary responsibilities include providing first aid, conducting health examinations, organizing health management and promotion activities, and delivering medical and health services to employees.

In addition to health examinations and the analysis and classification of examination results, our Occupational Medicine doctors carry out on-site occupational suitability assessments. These assessments include evaluating the fitness of injured or sick workers and making recommendations for job reassignment or adjustments.

CSC Clinic has developed an online health management system that is integrated with the Safety and Health Management System. This system allows employees to schedule appointments with the professional team and receive notifications regarding health check-up appointments. It also sends reminders to employees regarding abnormal results. Additionally, with the support of the internal occupational safety database, the health management online system monitors employees in special working environments who require specific health check-ups. It also regularly tracks the health of employees working in high-risk work environments.

Since 2018, we have installed 60 Automatic External Defibrillators (AEDs) in each plants, and the total number of AEDs available until 2022 is 69. We have provided AED operation education and training to first-aid personnel to strengthen CSC's emergency response network.

• Medical Services

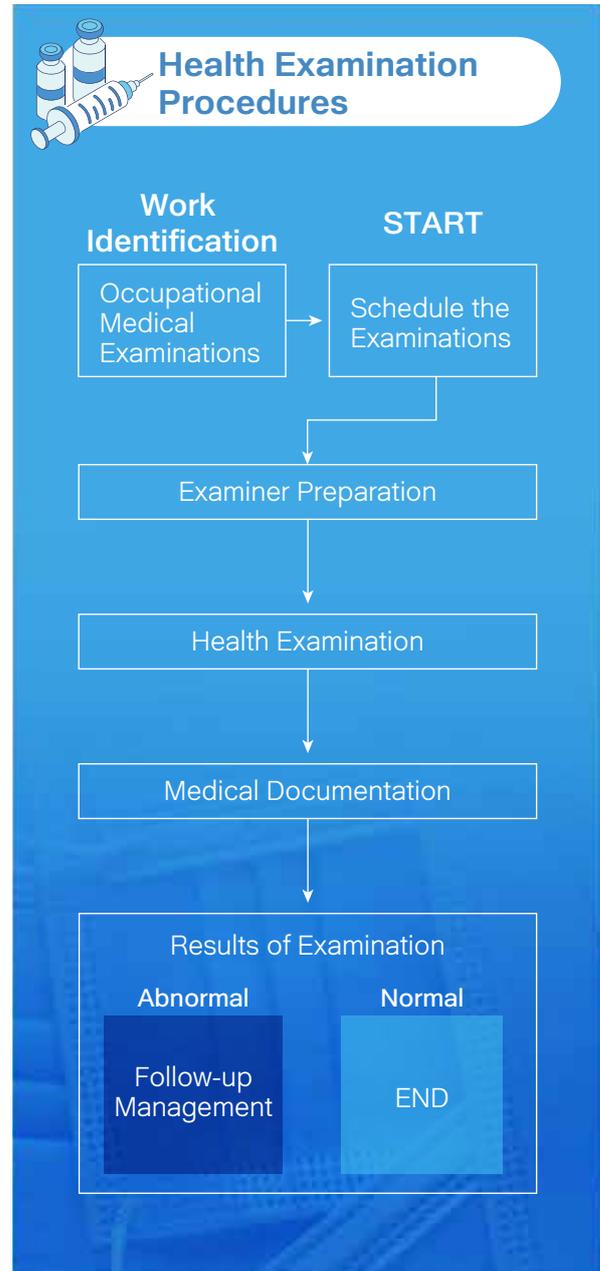
CSC Clinic employs professional medical and nursing teams from KMUH, KMSH, and Kaohsiung Armed Forces General Hospital to provide primary diagnosis/treatment, chronic disease prevention, and basic medical services. The number of medical visits in 2022 was 30,234. Having a close relationship with local hospitals, the clinic provides referral service for patients.

The employee clinic health management website provides online health consultation services. As of December 31, 2022, the website of the health management center had been visited 574 thousand times. A shortcut to access the clinic was also added in the internal mobile phone app, allowing employees to check their health examination reports over the years or make appointments for the clinic at any time.

• Health examination

To provide proper care for employees, CSC Clinic offers comprehensive health check-ups so that employees don't have to spend time visiting other clinics. The health examination items and frequency offered by the clinic exceed the current regulatory requirements. Medical staffs at CSC Clinic manage the health conditions of employees based on the examination results. The Clinic offers cancer screening that focus on common cancers such as lung cancer, liver cancer, and colorectal cancer. Additionally, the health examination items have included the lateral view of chest X-ray, abdominal ultrasound, quantitative immunoassay, and fecal occult blood tests to enable early detection.

Moreover, CSC Clinic implements health management measures based on the health examination results and offers services such as consulting, primary diagnosis and treatment, and referrals. In 2022, a total of 7,580 employees received health examinations. Personnel in special workplaces underwent specialized health examinations as planned. In 2022, 3,676 employees participated in Special Health Checks for Personnel in Special Workplaces. Among them, 7 individuals (working in environments with loud noise) were classified under level 4 health management. Review meetings have been conducted, and improvement measures have been implemented.



Social Participation

CHAPTER

7.1 Concepts and Management

7.2 Local First

7.3 The CSC Group Education Foundation

Feature

Promote Female Science and Technology
Talent Cultivation Program

Feature

Promote Female Science and Technology Talent Cultivation Program

Abstract



The CSC Group Education Foundation collaborated with IBM and National Sun Yat-sen University to develop a program to cultivate female talents in the field of natural science and technology, bringing technology activities to the campus. CSC personnel were invited to interact with students in their classes. Example: EWeek, lab visits and life seminars by women in science and technology.

Over a hundred sessions have been held already, allowing tens of thousands of students to experience the integration of technology to the future lifestyle. After the feedback from the students, most of them have a different understanding of “nature technology” after participating in this activity, and they also understood that there is no limitation between men and women in learning “nature technology”.

EWeek (Engineers Week) was first initiated by IBM to stimulate students’ motivation to learn in the field of natural science and technology through hands-on work, and then to engage in related fields to achieve the goal of fostering technological talents. In 2012, IBM sought corporate partners in southern Taiwan to participate in this project, and CSC began to invest in the training, matchmaking, and implementation of related activities, which has been promoted by the Foundation since 2013. Every year, about 60 CSC employees are sent to schools to interact with high school students, and CSC has held a national competition in Taichung with students from all over the country for three consecutive years since 2018.

According to a survey in recent years, only about 30% of professionals in science-related careers in Taiwan are women. In line with the social atmosphere, the word “female” has been added to the main theme of the event in recent years to highlight the gender differences in the field of natural science and technology and the stereotype that “science is a masculine discipline.”

At the same time, CSC Group Education Foundation started to collaborate with the National Sun Yat-sen University to conduct laboratory visits and seminars with female speakers.

Based on research that female students can enhance their sense of self-identity by observing female role models, CSC Foundation invited female engineers from CSC to the schools to share their personal experiences and career anecdotes.



▲ Group photo after the course



▼ Students during the class

7.1 Concepts and Management

7.1.1 Concepts of Participation

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

Case highlights	Supporting the city government's new zoo campaign
<p>Supporting the city government's new zoo campaign: Shou Shan Zoo is an important ecological education site in southern Taiwan. In addition to its functions of animal research, conservation and education, the park also preserves the fond memories of Kaohsiung as a civilized city for all citizens. The new recreational experience provided by the renovation will create new and permanent memory for the next generation of children.</p> <p>As a local enterprise in Kaohsiung, CSC has a strong emotional connection to Shoushan. Therefore, we supported the city government's initiative to build a new zoo, and held our annual celebration event in the completed park to enhance the sense of belonging among our employees and to promote awareness of the importance of conservation.</p>	
 	

• Diversified Social Involvement

Job Category	Organizer	Diversification
Central and Local Public Affairs	Public Affairs Dept.	<ul style="list-style-type: none"> • Good neighborliness, social care, and assisting with local education • Positive interactions between public representatives, administrative agencies, the media, and opinion leaders.
Social Education	CSC Group Education Foundation	<ul style="list-style-type: none"> • Promote general education and application in steel. • Sponsoring activities regarding science and technology, social education, arts and culture, etc.
Social Care and Art Activities	CSC, the CSC Group Education Foundation, Labor Union of CSC, and employee clubs	<ul style="list-style-type: none"> • Post-disaster emergency relief and reconstruction. • Caring for the disadvantaged. • Caring for the ecological environment. • Enhancement of humanistic quality and cultivation of art.
Human Rights and Workforce Development	Human Resources Dept.	<ul style="list-style-type: none"> • Negotiate and formulate reasonable workplace policies.
Safety and Health	Industrial Safety & Hygiene Dept.	<ul style="list-style-type: none"> • Prevent incidents and diseases derived from the corporate operation. • Prevention of epidemic diseases • Domestic and international exchanges
Labor Policy	Labor Union of CSC	<ul style="list-style-type: none"> • National labor rights, benefits, and welfare policies. • Exchanges, collaboration, and interactions with other union groups.
Environmental Protection	Utilities Dept. and Environmental Protection Dept.	<ul style="list-style-type: none"> • Provide enterprise energy-saving technology diagnostic services in collaboration with the Energy-Saving and Carbon Reduction Technology Counseling Team promoted by Kaohsiung City • Promote exchange of knowledge on environmental protection through visits. • Participate in the water environment patrol team promoted by the government to fulfill corporate social responsibility and safeguard water resources.

7.1.3 Expenditures of Social Responsibility

Event	Summary	Amount of 2020	Amount of 2021	Amount in 2022
		Unit: million TWD		
Social charity donations	Social and local charitable support and assistance of relief in emergencies.	55.56	102.36	122.56
Donations to the CSC Group Education Foundation	Implementation of cultural education and promotion of education and nurturing of new talent in steel-related fields.	0 (0)	12.54	2.81
Donations for institutes and associations	Sponsorship for seminars, conferences, and advertisements.	1.405	1.92	1.871
CSC Retirees Services Sec.	Retiree benefits reserve.	13.06	12.52	12.06
Total		70.025	129.34	139.301

Note: 1. Many activities were suspended in 2020 due to the pandemic. After the evaluation of the foundation, the 2019 balance was enough to support 2020 activities, thus there was no donation to the CSC Group Education Foundation in 2020.

7.2 Local First



7.2.1 Community Care

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

- Distributed funds for social relief and gifts of money during the Taiwan traditional festivals to assist low-income families in Hsiao Kang District

- According to “the Guidelines for new recruitment”, the candidates who are Hsiao Kang residents are given a certain percentage of bonus points in their written tests when applying for positions in CSC.

- CSC provides merit scholarships for students and tuition assistance to students from low-income families in Hsiao Kang.

- The CSC Employee Welfare Committee operates a CSC Kindergarten, which recruits children of employees from which recruits children from employees of CSC group companies as well as residents in the nearby areas.

- CSC assisted 17 elementary and junior high schools in Hsiao Kang District, Kaohsiung City, in upgrading their teaching equipment to enhance students’ learning efficiency.

7.2.2 Cultural Heritage

CSC adheres to the concept of “Proactivity and Responsibility, Diversified involvement, Local First, and Accountability”, and invests in the selection of resources for continuing cultural heritage to the students. To promote the traditional merit of filial piety, CSC holds the ceremony of Xiaogang District Merit Scholarship Ceremony every year. Yet due to COVID-19 in 2022, the mass gathering was halted. The ceremony was held in respective schools instead to advocate the Chinese tradition.

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

7.3 The CSC Group Education Foundation

CSC, as a leader in Taiwan's steel industry, established the CSC Group Education Foundation in 2006 through the CSC board of directors to further expand and implement corporate social responsibility, which aims to promote education and cultivate talents in steel-related fields, care for ecological conservation, enhance the humanistic spirit, and pursue sustainable development as its mission to promote the concept of holistic education.

Event	Amount of 2020 (10,000 TWD)	Amount of 2021 (10,000 TWD)	Amount of 2022 (10,000 TWD)
Administrative expenses	76	84	78
Expanded activities related to steel	34	55	44
Grants to the nurturing of research talent	129	145	135
Promotion of sustainable development of the environment	458	424	466
Promotion of educational activities of arts	355	484	449
Other charitable educational affairs	46	45	103
Total	1,098	1,237	1,275

Promote steel-related educational activities

- + **Popular Science Education Activities**
 - Collaborated with National Sun Yat-sen University to invite high school students to visit laboratories as to encourage women to participate in the field of natural science and technology. A series of visits were held on 2/10 in the first half of the year and on 7/4-8 in the second half of the year, introducing 14 research laboratories including the Toxicology Rapid Screening Center, Underwater Vehicle Research and Development Center, and Marine Animal Physiology, attracting nearly 800 students from over 60 high schools across Taiwan. Through understanding the research direction and future development of the laboratories, students were encouraged to pursue their dreams.
- + **Steel Journey Activity**
 - The Steel Journey activity was organized in collaboration with CSC's Public Affairs Department in 2022. In view of CSC's suspension of external visits due to the COVID-19 outbreak over the past two years, an online learning system was designed for students to overcome different obstacles via remote learning. Students who got full marks can receive exclusive souvenirs from the CSC Group Education Foundation. This activity was participated by 1,200 students in total.

Awards and scholarships for science and technology related to steel and environmental protection

- + **Steel Talent Scholarship**
 - Students from the Department of Materials Science and Engineering and the Department of Mechanical Engineering at five universities for the 2022 Steel Talent Scholarship at the China Steel Building, namely National Taiwan University, National Tsing Hua University, National Chung Hsing University, National Cheng Kung University, and National Sun Yat-sen University. Scholarships were awarded to 18 students upon multiple rounds of test and interviews, and 191 students have received the Steel Talent Scholarship since 2007.
- + **World Steel Making Challenge**
 - Assisted the college students of Taiwan to participate in the preliminaries of the World Steel Association Steel Making Challenge (Asia Pacific). The top three students in the student group will receive scholarships as an incentive to participate in the event. In particular, the Department of Materials of National Chung Hsing University trains students to participate in this competition, and its students have won the world championship in the student category in both 2017 and 2019.

Environmental Conservation and Care for Sustainable Environmental Development

- + **Summer Ecology Camp**
 - In 2022, the Summer Ecology Camp were held twice at the National Museum of Marine Biology & Aquarium in Pingtung. We combined environmental education, life practices, and stargazing courses to enrich the students' learning, allowing participants to have a better understanding of the relationship between marine ecosystem and humans. 80 Students from elementary participated the camp.
- + **Light Up and Spread the Love**
 - We sponsored the National Science and Technology Museum to organize the "2022 Light Up and Spread the Love Tour" to promote disadvantaged students to visit the Museum and to balance educational resources to enhance the effectiveness of school teaching. In addition, CSC group has set up a climate change exhibition hall in the Museum for students to learn about our efforts in environmental issues such as circular economy.

Passing on traditional craftsmanship

- + **Traditional Art Development at Nanan Elementary School**
 - Nanan Elementary School has long been committed to promoting shadow puppetry and the performance of traditional stringed and woodwind with excellent results. CSC Group Education Foundation has been sponsoring their traditional art development activities since the 2018 academic year to help inherit and preserve art heritage and culture.
- + **Traditional Art Development at Guangxing Elementary School**
 - In order to promote the preservation of traditional culture and arts, CSC Group Education Foundation partnered with Guangxing Elementary School in Meinong District to hold the "Traditional Craft - Recreating Indigo Dyeing" course. The hands-on experience of learning about Hakka culture and the completion of a piece of artwork by parents and children added a lot of warmth to the event.



- + **Traditional Art Development at Fu'an Elementary School**
 - In collaboration with Fu'an Elementary School in Meinong District, the "Hup Hup Pull Out the Turnip" course was held to learn about the relationship between crops and people through local history, and to experience the taste of nature by picking and pickling turnips.

Other public welfare education affairs in line with the establishment purpose

- + **Environmental Classroom**
 - In collaboration with Professor Tsai Chih-Chung of the Institute of Environmental Education, National Kaohsiung Normal University, an environmental classroom was set in Fu'an Elementary School in Meinong District. This classroom incorporates the concepts of water recirculation piggy bank and BOF Slag to help develop the school's special curriculum, such as: circular economy - BOF Slag pot plant, circular economy - waste soil into gold, popular science - and exploring the experience of circular economy. The environmental classroom was used to organize activities that gave students and people from the nearby community the opportunity to learn more about the meaning of circular economy and the environmental efforts of CSC.

Appendix

- Appendix 1** GRI Standards Content Index
- Appendix 2** Sustainability Accounting Standards Board (SASB)
- Appendix 3** TCFD Content Index
- Appendix 4** Climate-Related Information of CSC
- Appendix 5** Assurance Statement

Appendix 1 GRI Standards Content Index

General Disclosures

GRI Standards	Disclosure	Page	Chapter	Note/Reasons for Omissions	
GRI 2 General Disclosures 2021	The organization and its reporting practices				
	2-1	Organizational details	1	0.1	Reasons for omission are not permitted
	2-2	Entities included in the organization's sustainability reporting	1	0.1	
	2-3	Reporting period, frequency and contact point	1	0.1	
	2-4	Restatements of information	-	Explanations to all the restatement are denoted in the report	
	2-5	External assurance	1	0.1	
	Activities and workers				
	2-6	Activities, value chain and other business relationships	2	0.2.2	
	2-7	Employees	131	6.1	
	2-8	Workers who are not employees	131	6.1	
	Governance				
	2-9	Governance structure and composition	41	2.3	
	2-10	Nomination and selection of the highest governance body	41	2.3	
	2-11	Chair of the highest governance body	41	2.3	
	2-12	Role of the highest governance body in overseeing the management of impacts	45	2.4	
	2-13	Delegation of responsibility for managing impacts	45	2.4	
	2-14	Role of the highest governance body in sustainability reporting	1	0.1	
	2-15	Conflicts of interest	46	2.5	
	2-16	Communication of critical concerns	45	2.4	
	2-17	Collective knowledge of the highest governance body	44	2.3.2	
	2-18	Evaluation of the performance of the highest governance body	44	2.3.2	
	2-19	Remuneration policies	43	2.3.1	
	2-20	Process to determine remuneration	43	2.3.1	
	2-21	Annual total compensation ratio	135	6.2	
	Strategy, policies and practices				
2-22	Statement on sustainable development strategy	13-24	1.1 ∙ 1.2 ∙ 1.3		
2-23	Policy commitments	99 ∙ 140	5.1 ∙ 6.3.3		
2-24	Embedding policy commitments	99 ∙ 140	5.1 ∙ 6.3.3		
2-25	Processes to remediate negative impacts	99 ∙ 140	5.1 ∙ 6.3.3		

GRI Standards	Disclosure		Page	Chapter	Note/Reasons for Omissions
GRI 2 General Disclosures 2021	2-26	Mechanisms for seeking advice and raising concerns	46	2.5.1	
	2-27	Compliance with laws and regulations	99 · 144	5.1 · 6.5.1	
	2-28	Membership associations	86	4.3	
	Stakeholder engagement				
	2-29	Approach to stakeholder engagement	25	1.4	
	2-30	Collective bargaining agreements	139	6.3	

Material Topics

The following table shows corresponding GRI topic-specific disclosures of CSC's material topics identified in 2022.

Material Topic					
GRI Standards	Disclosure		Page	Chapter	Note/Reasons for Omissions
GRI 3 : Material Topics 2021	3-1 Process to determine material topics		29	1.5	Reasons for omission are not permitted
	3-2 List of material topics		31	1.5	
Research Innovation					
GRI 3 : Material Topics 2021	3-3	Management of material topics	29 · 61	1.5 · 3.3.1	
CSC indicators		Delivery of premium products	61	3.3.1	
Quality Control and Hazardous Substance Management of Products					
GRI 3 : Material Topics 2021	3-3	Management of material topics	31 · 65 · 67	1.5 · 3.3.2 · 3.3.3	
CSC indicators	Obtain product quality certificates used in different countries		65	3.3.2	
	Certified steel grades for Recycled Content Validation		65	3.3.2	
	Completion of training on the hazardous substance management system		67	3.3.3	
Green Product / Business Development *CSC specific topic					
GRI 3 : Material Topics 2021	3-3	Management of material topics	31 · 70	1.5 · 3.4	
CSC indicators		The capacity of the solar photovoltaic system	72	3.4.2	
Respond to Climate Change					
GRI 3 : Material Topics 2021	3-3	Management of material topics	31 · 117	1.5 · 5.3	
Circular Economy					
GRI 3 : Material Topics 2021	3-3	Management of material topics	16 · 31 · 87	1.3 · 1.5 · 4.4	
CSC indicators		Co- production between Steel and Petrochemical Plants: Establish carbon monoxide purification technology	24	1.3	

Material Topic						
GRI Standards		Disclosure		Page	Chapter	Note/Reasons for Omissions
Water and Wastewater						
GRI 3 : Material Topics 2021		3-3	Management of material topics	24 · 31 · 114	1.3 · 1.5 · 5.2.4	
GRI 303: Water and Effluents 2018	Management approach	303-1	Interactions with water as a shared resource	114	5.2.4	AA 1000 AS Type 2
		303-2	Management of water discharge-related impacts	116	5.2.4	
	Topic-specific	303-3	Water withdrawal	116	5.2.4	
		303-4	Water discharge	116	5.2.4	
		303-5	Water consumption	116	5.2.4	
CSC indicators			New water intensity (tonnes water / tCS)	115	5.2.4	AA 1000 AS Type 2
			Production process water recirculation	116	5.2.4	
			Processing water recycling rate (%)	116	5.2.4	
			Water quality of water discharge	116	5.2.4	
Greenhouse Gas Emissions						
GRI 3 : Material Topics 2021		3-3	Management of material topics	24 · 31 · 117	1.3 · 1.5 · 5.3	
GRI 305: Emissions 2016		305-1	Direct (Scope 1) GHG emissions	126	5.3	
		305-2	Energy indirect (Scope 2) GHG emissions	126	5.3	
		305-3	Other indirect (Scope 3) GHG emissions	126	5.3	
		305-4	GHG emissions intensity	126 · 5	5.3 · 0.3.1	
Air Pollutants						
GRI 3 : Material Topics 2021		3-3	Management of material topics	24 · 31 · 110	1.3 · 1.5 · 5.2.3	
GRI 305 : Emissions 2016		305-6	Emissions of ozone-depleting substances (ODS)	112	5.2.3	AA 1000 AS Type 2
		305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	112	5.2.3	
CSC indicators			SOx, NOx and Par. emission intensity (kg / tCS)	112	5.2.3	
Raw Materials						
GRI 3 : Material Topics 2021		3-3	Management of material topics	31 · 103	1.5 · 5.2.1	
GRI 301: Materials 2016		301-1	Materials used by weight or volume	102	5.2	
		301-2	Recycled input materials used	104	5.2.1	
GRI 308: Supplier Environmental Assessment 2016		308-1	New suppliers that were screened using environmental criteria	103	5.2.1	

Material Topic						
GRI Standards	Disclosure		Page	Chapter	Note/Reasons for Omissions	
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	103	5.2.1		
Energy Consumption						
GRI 3 : Material Topics 2021	3-3	Management of material topics	24 、 31 、 105	1.3 、 1.5 、 5.2.2		
GRI 302: Energy 2016	302-1	Energy consumption within the organization	108	5.2.2		
	302-3	Energy intensity	107	5.2.2		
	302-4	Reduction of energy consumption	107	5.2.2		
Waste						
GRI 3 : Material Topics 2021	3-3	Management of material topics	24 、 31 、 88	1.3 、 1.5 、 4.4.1		
GRI 306: WASTE 2020	Management approach	306-1	Waste generation and significant waste-related impacts	88	4.4.1	
		306-2	Management of significant waste-related impacts	88	4.4.1	
	Topic-specific	306-3	Waste generated	90	4.4.1	AA 1000 AS Type 2
		306-5	Waste directed to disposal	91	4.4.1	
CSC indicators	The output of waste per unit of CS (kg / tCS)		90	4.4.1		
	The ratio of waste treated in-plant		90	4.4.1		
	The ratio of waste recycled and reused		90	4.4.1		
Occupational Safety and Health						
GRI 3 : Material Topics 2021	3-3	Management of material topics	24 、 31 、 144	1.3 、 1.5 、 6.5.1		
GRI 403: Occupational Health and Safety 2018	Management approach	403-1	Occupational health and safety management system	145	6.5.1	
		403-2	Hazard identification, risk assessment, and incident investigation	148	6.5.1	
		403-3	Occupational health services	151	6.5.2	
		403-4	Worker participation, consultation, and communication on occupational health and safety	137 、 151	6.2.3 、 6.5.2	
		403-5	Worker training on occupational health and safety	146	6.5.1	
		403-6	Promotion of worker health	151	6.5.2	
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	150	6.5.1	
	Topic-specific	403-9	Work-related injuries	149	6.5.1	AA 1000 AS Type 2

The following table shows corresponding GRI voluntary disclosures of CSC' s non-material topics.

Non-material Topics					
GRI Standards		Disclosure	Page	Chapter	Note
GRI 204-1 Procurement Practices	204-1	Proportion of spending on local suppliers	78 · 83	4.1.1 · 4.1.5	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	132 · 134	6.1.1/6.1.3	
GRI 402: Labor/Management Relations 2016	402-1	Minimum notice periods regarding operational changes	134	6.1.3	
GRI 406: Non-discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	131	6.1	No violation
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	80	4.1.4	No violation
GRI 408 Child labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	80 · 131	4.1.4/6.1	Prohibition of child labor
GRI 409: Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced	80	4.1.4	No violation
GRI 410 : Security practices 2016	410-1	Security personnel trained in human rights policies or procedures	79	4.1.3	100%
GRI 411 : Rights of indigenous Peoples 2016	411-1	Incidents of violations involving rights of indigenous peoples	-	-	No violation
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	99 · 158	5.1/7.2.1	
GRI 415 : Public policy 2016	415-1	Political contributions	46	2.5.1	Prohibition of political contributions
GRI 416: Customer Health and Safety 2016	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	67	3.3.3	No violation

Index of Iron & Steel Producers			
Topic	Code	Accounting Metric	CSC' s Response
Aspect	Environment		
Water Management	EM-IS-140a.1	(1) Total fresh water withdrawn (thousand cubic meters) (2) Percentage recycled (%) (3) Percentage in regions with High (40-80%) or Extremely High (>80%) Baseline Water Stress (%)	(1) 43,076 thousand cubic meters* (including 21,562 thousand cubic meters of tap water and 21,514 thousand cubic meters of reclaimed water) (2) 98.5% (plant-wide water recovery rate) (3) According to the Aqueduct Water Risk Atlas provided by the World Resources Institute, Kaohsiung City' s overall water risk is low to medium (1 to 2). Therefore, there is no water withdrawal in areas of high or extremely high water stress in Kaohsiung City. Note: Water consumption = 26,842 thousand cubic meters * >>For more information, please refer to Ch 5.2.4 Water
	EM-IS-150a.1	(1) Amount of waste generated (tonnes) (2) Percentage hazardous (%) (3) Percentage recycled (%)	(1) 559,806.7 tonnes * (2) 0.01% * (3) 94.7% * >>For more information, please refer to Ch 4.4.1 Waste Recycling
Aspect	Human Capital		
Workforce Health & Safety	EM-IS-320a.1	(1) Total recordable incident rate (TRIR) (2) Fatality rate (3) Near miss frequency rate (NMFR) for (a) full-time employees and (b) contract employees	(1) employee =0.2 contractor =0.26 (2) employee =0 contractor =0 (3) employee =40.06 contractor: no record available Note: rates are calculated as: (statistic count × 200,000) / hours worked Number of Occupational Disasters (Employees) = 21* Ratio = 21/9,688 = 0.22% * >>For more information, please refer to Ch 6.5.1 Occupational Safety

Index of Iron & Steel Producers			
Topic	Code	Accounting Metric	CSC' s Response
Aspect	Business Model & Innovation		
Supply Chain Management	EM-IS-430a.1	Discussion of the process for managing iron ore and/or coking coal sourcing risks arising from environmental and social issues	<p>At present, CSC sources its raw materials, such as coal and iron ores, from the world' s largest miners with which it has signed long-term supply contracts, such as BHP, Rio Tinto, Teck, and Vale. The mines, which produce these raw materials are located in advanced mining countries such as Australia, Canada, and Brazil, and subject to stringent inspections in accordance with local laws and regulations before mining can be maintained over the long run. These mines primarily serve the top steel mills in the world, which also pay attention to ESG management issues associated with their suppliers.</p> <p>Meanwhile, in the procurement contracts with coal and iron raw material suppliers, CSC has also required the suppliers to comply with the relevant ESG terms. In addition, the CSC Code of Conduct for Suppliers was formulated with reference to international norms and standards, such as the Responsible Business Alliance (RBA) Code of Conduct Version 7.0 and the United Nations Supplier Code of Conduct Rev. 06. The Code contains five parts on ethics, labor and human rights, health and safety, environmental standards, and management system. In addition, special clauses will be added to the contracts as necessary to We expect our suppliers to adopt the same standards and to comply with these standards and the laws and regulations of the countries in which they operate in all their business activities.</p> <p>>>For more information, please refer to Ch 4.1 Supply Chain Management</p>

Code	Activity Metric	CSC' s Response
EM-IS-000.A	Raw steel production (tonnes), percentage from: (1) basic oxygen furnace processes, (2) electric arc furnace processes	8,803,592 tonnes * (1) 100% (2) Not Applicable >>For more information, please refer to Ch 5.2.1 Raw Materials Management
EM-IS-000.B	Total iron ore production ^(I) (tonnes)	Not Applicable, CSC relies on foreign imports for the iron ores used in its businesses. >>For more information, please refer to Ch 5.2.1 Raw Materials Management
EM-IS-000.C	Total coking coal production ^(II) (tonnes)	Not Applicable, CSC imports coking coal from abroad for use in its businesses. >>For more information, please refer to Ch 5.2.1 Raw Materials Management

Note: I. The scope of production includes iron ore consumed internally and that which is made available for sale.

Note: II. The scope of production includes coking coal consumed internally and that which is made available for sale.

Note III: * indicates the disclosure metrics required in Schedule 1-6 of the "Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies".

Appendix 3

TCFD Content Index

Framework	Disclosures	Page
Governance	Describe the board' s oversight of climate-related risks and opportunities.	41 · 118
	Describe management' s role in assessing and managing climate-related risks and opportunities.	41 · 118
Strategy	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	120-122
	Describe the impact of climate-related risks and opportunities on the organization' s businesses, strategy, and financial planning.	
	Describe the resilience of the organization' s strategy, taking into consideration different climate-related scenarios, including a 2° C or lower scenario.	
Risk Management	Describe the organization' s processes for identifying and assessing climate-related risks.	118-119
	Describe the organization' s processes for managing climate-related risks.	118-122
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization' s overall risk management.	50-54 · 119
Metrics and Targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	120-122
	Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	126
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	120-122

Appendix 4

Climate-Related Information of CSC

Risks and opportunities posed by climate change to CSC and the relevant countermeasures taken by CSC

Code	Item	Page
1	Describe the board of directors' and management's oversight and governance of climate-related risks and opportunities.	118
2	Describe how the identified climate risks and opportunities affect the business, strategy, and finances of the business (short, medium, and long term).	120-122
3	Describe the financial impact of extreme weather events and transformative actions.	120-122
4	Describe how climate risk identification, assessment, and management processes are integrated into the overall risk management system.	50-54 · 119
5	If scenario analysis is used to assess resilience to climate change risks, the scenarios, parameters, assumptions, analysis factors and major financial impacts used should be described.	120-122
6	If there is a transition plan for managing climate-related risks, describe the content of the plan, and the indicators and targets used to identify and manage physical risks and transition risks.	123-126
7	If internal carbon pricing is used as a planning tool, the basis for setting the price should be stated.	123
8	If climate-related targets have been set, the activities covered, the scope of greenhouse gas emissions, the planning horizon, and the progress achieved each year should be specified. If carbon credits or renewable energy certificates (RECs) are used to achieve relevant targets, the source and quantity of carbon credits or RECs to be offset should be specified.	120-122 · 126
9	Greenhouse gas inventory and assurance status.	126

* Prepared in accordance with the "Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies" .

Appendix 5

Assurance Statement



INDEPENDENT ASSURANCE OPINION STATEMENT

China Steel Corporation 2022 Sustainability Report

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

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

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

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

Scope

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

1. The assurance scope is consistent with the description of China Steel Corporation 2022 Sustainability Report.
2. The evaluation of the nature and extent of the CSC's adherence to AA1000 AccountAbility Principles (2018) and the reliability of specified sustainability performance information in this report as conducted in accordance with type 1/ type 2 of AA1000AS v3 sustainability assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process expect for data relating waste recycling, air pollutants, water, and occupational safety topics.

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

Opinion Statement

We conclude that the China Steel Corporation 2022 Sustainability Report provides a fair view of the CSC sustainability programmes and performances during 2022. The sustainability report subject to assurance is materially correct without voluntary omissions based upon testing within the limitations of the scope of the assurance, the information and data provided by the CSC and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are correctly represented. The sustainability performance information disclosed in the report demonstrate CSC's efforts recognized by its stakeholders.

Our work was carried out by a team of sustainability report assurers in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that CSC's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards were fairly stated.

Methodology

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

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

- review of supporting evidence relating waste recycling, air pollutants, water, and occupational safety topics for claims made in the reports
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018)

Conclusions

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

Inclusivity

In this report, it reflects that CSC has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) 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 and has demonstrated sustainable conduct supported by top management and implemented in all levels among organization.

Materiality

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

Responsiveness

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

Impact

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

Performance information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, CSC and BSI have agreed upon to include in the scope. In our view, the data and information contained within China Steel Corporation 2022 Sustainability Report are reliable.

GRI Sustainability Reporting Standards (GRI Standards)

CSC provided us with their self-declaration of in accordance with GRI Standards 2021 (For each material topic covered in the applicable GRI Sector Standard and relevant GRI Topic-specific Standard, comply with all reporting requirements for disclosures). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the CSC's sustainability topics.

Assurance level

The moderate and partial high level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

Responsibility

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

Competency and Independence

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



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2023-05-08

For and on behalf of BSI:



Peter Pu, Managing Director BSI Taiwan

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