

# 2010

***CSC Corporate Social  
Responsibility Report***





# 2010

***CSC Corporate Social Responsibility(CSR) Report***



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# 2010

*CSC Corporate Social Responsibility(CSR) Report*

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# MESSAGES FROM TOP MANAGEMENT



**Chairman of Board**

*Jo-chi Tsou*

Corporate Social Responsibility (CSR) has become a basic ideology and core value in business management. The CSR report is an important document to disclose corporate information in governance, energy and environmental issues and social cares, and to communicate with multi-stakeholders. Moreover, The CSR report is a good record of corporate evolution in CSR and a sound basis for self-evaluation.

China Steel Corporation (CSC) launched its first Environmental Report in 2002. Since then, CSC has published several reports in social responsibility field, with expanded focus and different titles. The 2010 CSR report is different from previous ones in the following aspects: (1) Follow the GRI (Global Reporting Initiative) Guidelines version 3.1 strictly, (2) Disclose future goals and directions in main issues, (3) Adopt external verification for the first time. Hence, this CSR report is presented to the society with a more professional, responsible and credible feature.

In 2010, CSC devised its corporate vision as “pursue growth, continue energy saving, environmental protection and value innovation, to be an accountable and premium steel enterprise globally”. With the added green elements, China Steel Group has positioned itself as “an enterprise group based in Taiwan, focused in Asia, excel in steel materials, engineering and services, minerals and resources, as well as in energy and environmental issues” to assert its endeavor in the emerging green economy.

In the first half of 2011, CSC introduced the following functions to enhance its realization of CSR:

- (1) Office of Energy and Environmental Affairs:  
To integrate our efforts in green business, low carbon economy and low carbon city by focusing on green processes, products and partnerships, with the aim of low carbon, low



partnerships, with the aim of low carbon, low pollution and high added value.

(2) Energy and Environmental Promotion Committee: Chaired by CSC Chairman, its goal is to enhance the strategic planning and implementation in green material, low-carbon energy, energy saving, low emissions, risk management and new business in energy and environmental fields for the whole CSC Group. Also included is the strategic cooperation with top level steel makers around the world and domestic enterprises in areas with common interests.

(3) Retirees Service Department: To enhance the services and care of retired employees with practical plans and actions.

In addition, CSC extended its social service activities from internal functions to external platforms such as Business Council for Sustainable Development(BCSD)-Taiwan, Taiwan Corporate Sustainability Forum (TCSF) and National Science and Technology Museum. Activities include aids after disasters, home re-build, support in performing art programs and cooperation in educational exhibitions for energy saving and greenhouse gas reduction. Through the expanding channels and activities it is believed that CSC's fulfillment of CSR will be gradually widened and deepened.

With the publication of this 2010 CSR Report, CSC intends to be more transparent to the society regarding its ideologies, actions, performances and future directions in CSR. We sincerely welcome stakeholders and opinion leaders to provide us with comments and opinions that surely will help us strive for better planning, actions and more appreciated performances in CSR.



President

A stylized, handwritten signature in black ink, appearing to read 'Chuan Hsiao'.

# 1



## Corporate Profile and Introduction

- OPERATIONS
- FUNDAMENTALS OF CSR
- FRAMEWORK OF REPORT
- REVIEW AND VERIFICATION OF REPORT
- USE OF REPORT

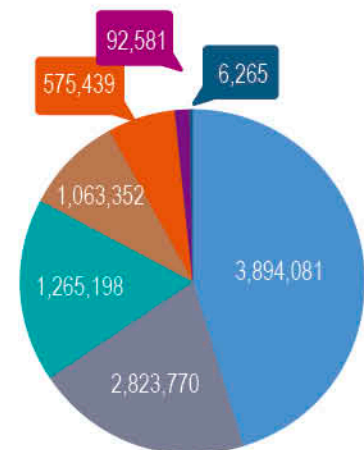
### 1.1 OPERATIONS

#### 1.1.1 Business and Scale

China Steel Corporation(CSC) is located at LinHai Industrial Park, Kaohsiung, with an area of 560 hectares. Established in December 1971, CSC is the first integrated steel mill and the largest in Taiwan. With blast furnaces for metal extraction and without electric arc furnace, its major raw materials are metallurgical coals and iron ores which are all purchased from overseas. The supplement raw materials are scrap metal and flux stones such as limestone, dolomite and serpentine.

Main products of CSC include hot and cold rolled coils, coated coils, plates, rods and bars. Its by-products include coal tar, crude light oil, blast furnace slag, basic oxygen furnace slag and iron oxide powder. The steel products and by-products of CSC are sold to many steel-using industries to manufacture vehicles, appliances, motors, ships, steel structures, mechanical parts, Hi-tech components, chemicals, consumer products and many others.

In 2010, CSC's production of crude steel was 9,582,450 tones. Its steel products include 3,894,081 tons of hot-roll , 2,823,770 tons of cold-roll , 1,265,198 tons of wire rods, 1,063,352 tons of plates, 575,439 tons of bars, 92,581 tons of commercial billet/slab/bloom, and 6,265 tons of pig iron, totaling 9,720,686 tons. The distribution of CSC's products is shown in the right figure:



PRODUCTION OF STEEL  
PRODUCTS IN 2010 (METRIC TONES)

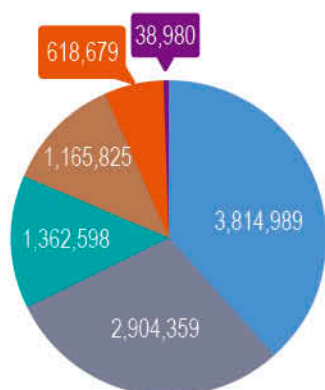
- hot rolled products (40.1%)
- cold rolled products (29%)
- wire rods (13%)
- sheets (10.9%)
- bars (5.9%)
- billet/slab/bloom(1.0%)
- pig iron (0.1%)



## 1.1.2 Product Sales

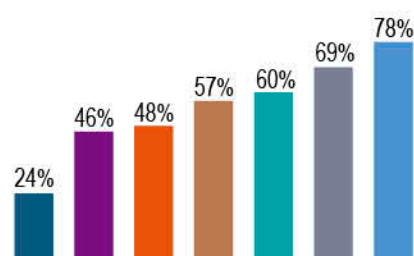
### (1) Steel Products

In 2010, CSC's steel product sales in domestic market amounted to 7.236 million tons (73.1%); while the overseas sales was 2.669 million tons (26.9%), totaling 9.905 million tons.. The main exporting markets are Mainland China, Japan and Southeast Asia. CSC had a share of 40.5% in domestic steel market. The market shares include 24% in hot-dip galvanized coils, 46% in hot rolled coils & sheets, 48% in wire rods & bars, 57% in electro galvanized sheets, 60% in cold-rolled coils & sheets, 69% in plates, and 78% in electrical sheets. Most of CSC's steel products are approaching saturated demand in Taiwan with only a few exeptions. In 2010, hot-rolled products has the largest sales volume with 3,814,989 tons, followed by cold-rolled with 2,904,359 tons. The rest are shown in the following figures:



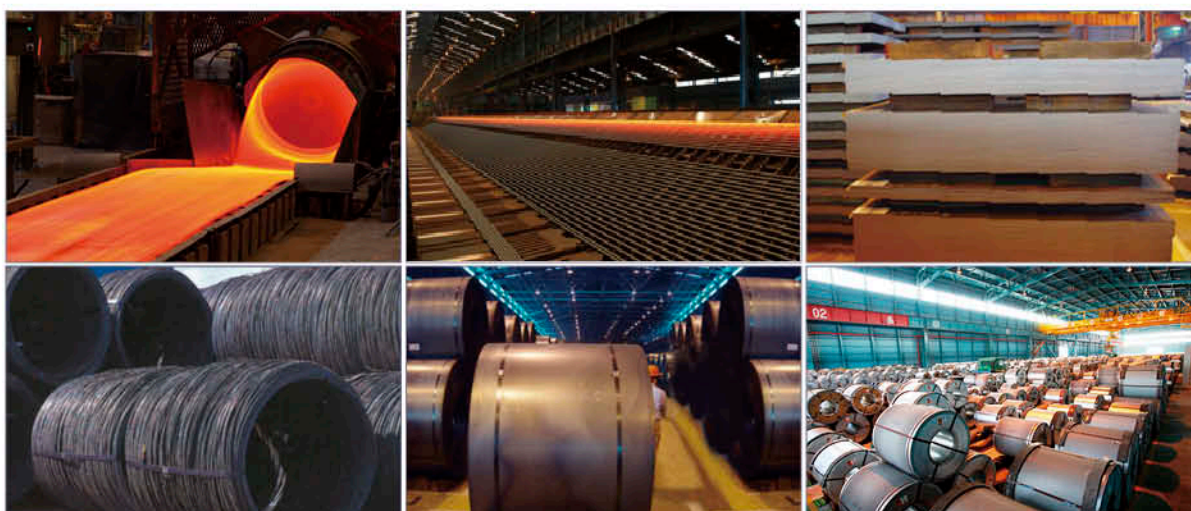
SALE OF STEEL PRODUCTS IN 2010 (TONS)

- hot rolled products (38.51%)
- cold rolled products (29.32%)
- wires (13.76%)
- sheets (11.77%)
- bars (6.25%)
- semi products (0.39%)



DOMESTIC MARKET SHARE OF CSC'S PRODUCTS

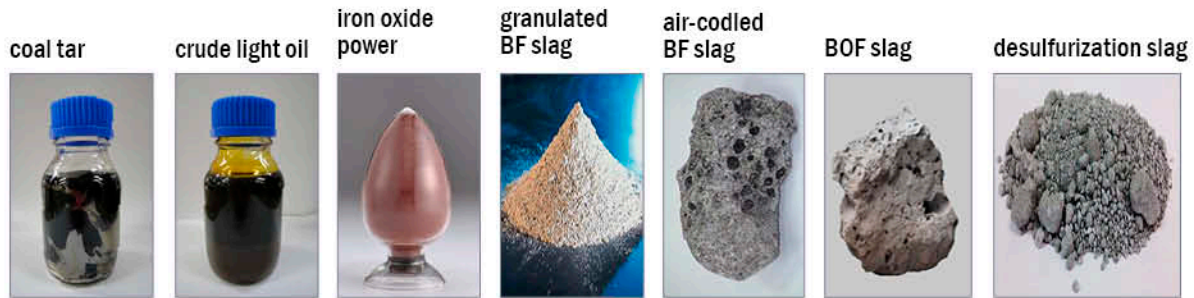
- electrical sheets
- sheets
- cold rolled coils & sheets
- electro galvanized sheets
- rods bars
- hot rolled coils & sheets
- hot-dip galvanized sheets





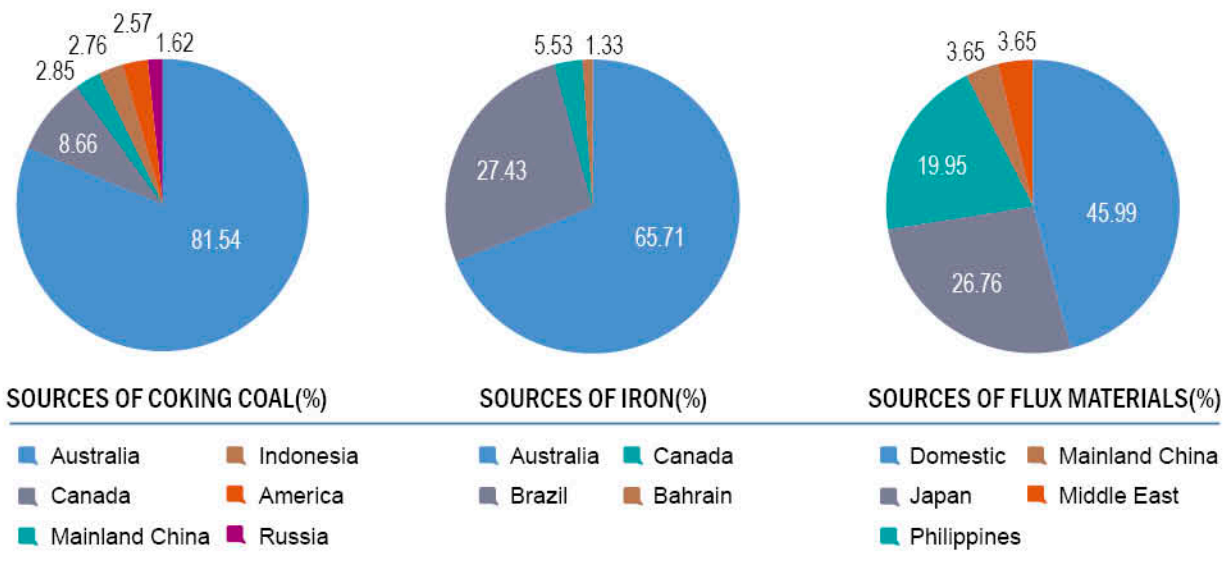
## (2) By-products

The by-products of CSC include coal tar, crude light oil, blast furnace slag, basic oxygen furnace slag, iron oxide powder and desulfurization slag. In 2010, the productions are 172,456 tons of coal tar, 62,608 tons of crude light oil, 2,543,263 tons of Granulated Blast Furnace Slag, 220,718 tons of air-cooled blast furnace slag, 1,228,222 tons of basic oxygen furnace slag, 22,140 tons of iron oxide powder, and 312,527 tons of desulfurization slag. Desulfurization slag and part of water-quenched blast furnace slag were sold to domestic customers, the rest were either sold to or processed by subsidiary companies of CSC before being shipped to customers in chemical, construction, civil, electrical and consumer industries for various applications.



### 1.1.3 Sources of Raw Materials and Energies

The iron ores and coals that CSC needs for production are 100% imported. The flux material for its metallurgical operations used to be 100% supplied by domestic sources. Since the termination of the nearby Logivity limestone mine in the 1990's to foster the local ecological development, part of the needed limestone is supplied by overseas sources. In 2010, 46% of CSC's needs for flux materials (limestone, dolomite and serpentine) came from Hua-Lian area of Eastewrn Taiwan. The remainders were from Japan, philippines, Middle East and Mainland China. The sources of major raw materials for CSC's operations are shown in the following figures:



Besides coals, the energies that were used in CSC operations included purchased electricity, natural gas, fuel oil, diesel and gasoline. Among these, electricity was supplied by Tai-Power Company, the remainders were purchased from Chinese Petroleum Corp. both located in Taiwan.

## 1.2 FUNDAMENTALS OF CSR

CSC endeavors to realize its social responsibilities based on the following fundamentals:

### 1.2.1 Vision

CSC's vision is **"To be a trustworthy steel company with global distinction that pursues growth, environmental protection, energy saving and value-innovation."** As per the vision, the social responsibility of CSC covers three aspects: corporate governance, energy and environment management, and engagement in social harmony.

### 1.2.2 Principles

Teamwork, entrepreneurial approach, down-to-earthiness and pursuit of innovation are the four major spirits of CSC. Based on these spirits CSC has devised 8 principles to realize its goals in CSR, as shown below:

- (1) Strengthen quality and service edges and incorporate with customer needs to form a win-win situation for co-prosperity.
- (2) Create shareholder profit and enhance global competitiveness to assure corporate sustainability.
- (3) Support government policy and join industrial developments to help improve national effectiveness.
- (4) Build technology infrastructure and integrate with professional groups to upgrade domestic industries.
- (5) Enhance environmental, safety and health management, avoid accident and reduce production emissions to upgrade the green and safety performances.
- (6) Care for labor welfare and establish premium work environment to facilitate employee learning and development.
- (7) Closely follow global trend and fully use low carbon resources to a circular society.
- (8) Engage in activities for social harmony, assist development in education and culture and provide positive feedbacks to local community via multi-channels.





Customers confabulation



### 1.2.3 Stakeholders and Communication

The CSC's task force for CSR has identified eight major group of stakeholders. The regular channels for stakeholder communication include Corporate Websites, Operation Reports, Financial Reports and CSR Reports. In addition, CSC utilizes the following paths to communicate with specific stakeholders:

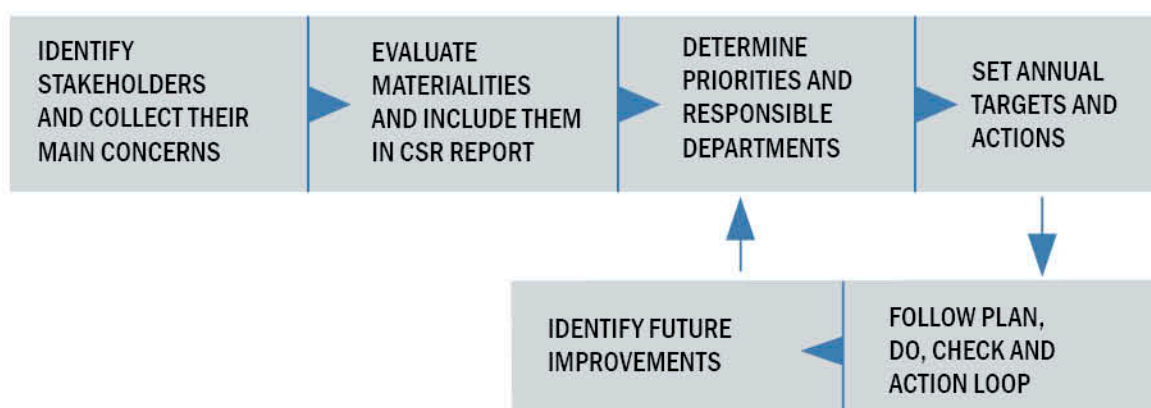
|  STAKEHOLDERS |  MAIN COMMUNICATION PATHS   |
|--|--|
| COMMUNITY AND LOCAL GROUPS   | Public Affairs Department, Labor Union and Social welfare clubs of CSC, CSC Group Education Foundation, meetings with local representatives and opinion leaders.   |
| CENTRAL AND LOCAL GOVERNMENT   | Conferences, Forums, public hearings, training courses, informal visits.   |
| SHAREHOLDERS AND FINANCIAL SUPERVISORY COMMISSION  | Annual shareholder meetings, financial reports and operation reports; shareholder-mailbox  |
| EMPLOYEES AND CONTRACTORS  | Collective agreement with Labor Union (revised every three years), Labor/ Management Committee meetings (monthly), departmental regular communication meetings (every 2 to 3 months), Labor Union representative as a Member of Board, communication meetings between top managements and councilmen members of Labor Union (every six months), Chairman's mailbox, Chairman's forum, Labor Welfare committee, Stock-holding Trustees meetings (every six months), Labor Safety and Health Committee meetings (every two months), Human Resources Development committee meetings (every year), Pension Fund Supervisory committee meetings (every three months), Rewards and Punishments Review meetings, Contract Lease and Safe Job meetings, Co-operation Organization, Contractors ESH meetings (monthly), Outsourcing Management meetings (every year). |
| CUSTOMERS  | Production/Sales confab, Press conferences, customer satisfaction survey (every year), R & D alliances, professional trainings, market survey, visits from time to time.   |
| OPINION LEADERS AND PROFESSIONAL BODIES  | Meetings in National Federation of Industries, Taiwan Business Council for Sustainable Development (every quarter), Taiwan Corporate Sustainability Forum, Taiwan Institute for Sustainable Energy; and forums with national experts, academic and industrial associations,  |
| SUPPLIERS  | Safety Design Standards, mutual visits, partnership to promote localized supplies, company brochures, forums, professional seminars.   |
| PEERS IN STEEL INDUSTRY  | Committee meetings and conferences held by Taiwan Steel & Iron Industries Association, World Steel Association, South East Asia Iron and Steel Institute (SEAISI); bilateral or multi-lateral forums and meetings among steel mills; visits and exchange meetings.   |

## 1.2.4 Identify Materiality

CSC's core working group for CSR has identified eight main stakeholder groups and their major concerns based on past working experiences. These major concerns were taken as the core items for disclosure, and were categorized as sub-titles in the Table of Contents of this report. These sub-titles are marked with page numbers to facilitate reading. The stakeholders' concerns and interests are shown in the following:

| <div> <div></div> <div>CONCERN</div> </div> <div> <div></div> <div>VERY MUCH CONCERN</div> </div> | CORPORATE PROFILE<br>AND INTRODUCTION |                            |                            |  |                      | MANAGERIAL<br>STRUCTURE     |  |                                     | PERFORMANCE<br>INDICATORS   |  |                                     |
|---|---------------------------------------|----------------------------|----------------------------|--|----------------------|-----------------------------|--|-------------------------------------|-----------------------------|--|-------------------------------------|
|   | (1)<br>OPERATIONS                     | (2)<br>FUNDAMENTALS OF CSR | (3)<br>FRAMEWORK OF REPORT | (4)<br>REVIEW AND VERIFICATION OF REPORT | (5)<br>USE OF REPORT | (1)<br>CORPORATE GOVERNANCE | (2)<br>ENERGY & ENVIRONMENTAL MANAGEMENT | (3)<br>ENGAGEMENT IN SOCIAL HARMONY | (1)<br>CORPORATE GOVERNANCE | (2)<br>ENERGY & ENVIRONMENTAL MANAGEMENT | (3)<br>ENGAGEMENT IN SOCIAL HARMONY |
| STAKEHOLDERS' CONCERNS  |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| STAKEHOLDERS  |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| COMMUNITY AND LOCAL GROUPS  |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| CENTRAL AND LOCAL GOVERNMENTS   |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| SHAREHOLDERS AND FINANCIAL<br>SUPERVISORY COMMISSION  |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| EMPLOYEES AND CONTRACTORS   |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| CUSTOMERS   |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| OPINION LEADERS AND<br>PROFESSIONAL BODIES  |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| SUPPLIERS   |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |
| PEERS IN STEEL INDUSTRY   |                                       |                            |                            |  |                      |                             |  |                                     |                             |  |                                     |

To enhance the communication with its stakeholders, CSC disclosed key issues as thoroughly as possible in its CSR report. In addition, CSC has adopted a continually improving process as shown below:





### 1.2.5 Publish CSR Report

---

CSC publishes CSR reports on an annual basis to fulfill its responsibility for disclosure. Not only is it to provide information to the public extensively, but also to review its shortcomings in fulfilling CSR and to make improvements accordingly. CSC's CSR report is organized, edited, reviewed and approved by the following groups through a series of processes:

- (1) **Core Working Group:** Composed of the Chief Secretary of labor Union as well as the representatives from closely related departments, including Human Resources Dept., Public Affairs Dept., Marketing Administration Dept., Finance Dept., General Secretariat Dept., Industrial Safety and Hygiene Dept., Environmental Protection Dept., Utility Dept. and New Materials R & D Dept. This working group is organized and integrated by the newly created Office of Energy and Environmental Affairs (OEEA) which is responsible for the information collection, coordination, editing among other practical issues.
- (2) **Consulting Group:** During the compiling and editing process, OEEA would invite additional departments as consulting members to provide information on specific topics and enhance internal consensus on major issues. With this process, the content of this report will become more comprehensive and representative.
- (3) **Management Review and Approval:** After the full draft was compiled, it is sent to the General Managers of all relevant departments to confirm the properness of the content and to collect related photos. The draft is then reviewed by Division Vice Presidents, followed by final approval by Executive Vice President, President and Chairman of the Board.

## 1.3 FRAMEWORK OF REPORT

### 1.3.1 Guidelines and Principles

---

The framework, principles and indicators of this report are formulated by combining the following:

- (1) G3.1 guidelines of Global Reporting Initiative (GRI).
- (2) The guiding document prepared by Taiwan Institute for Sustainable Energy (TAISE) for CSR Report Competitions.
- (3) The issues that global steel industry considers important to disclose.

The core and additional performance indicators listed in GRI G3.1 guidelines are adopted fully and disclosed as much as possible in this report. The link of this report with the GRI G3.1 guidelines is listed in Appendix I.

### 1.3.2 Boundary and Indicators

---

The boundary of this CSR report is limited to the operations of China Steel Corporation in Taiwan in the year of 2010 (excluding subsidiary companies). The financial statements are figured with NT\$, environmental health and safety performances are based on indicators generally adopted in global steel industry. In cases where ambiguity may arise, the exact meanings of indicators are described in detail or with formulas.

### 1.3.3 Data Sources and Management

The information and data of this report were provided by the various Divisions of CSC. They were then integrated and compiled by the Office of Energy and Environmental Affairs of CSC, followed by the review process reported in section 1.2.5. The financial and accounting information of this report had been verified by a professional Accounting Firm. In addition, the environmental, health and safety management system was audited by internal departments regularly, whereas the ISO 14001 and OHSAS 18001 systems were externally audited on a yearly basis. Except for 2010, the greenhouse gas inventory data of 2006~2009 have been verified externally.

## 1.4 REVIEW AND VERIFICATION OF REPORT

### 1.4.1 Internal Review and Approval

The information and data provided by various functional sections were reviewed and approved by their managers. They were revised by core team and consultative groups during the editing process, then reviewed by General Managers of departments, Vice Presidents of Divisions, Executive Vice President, President and finally approved by Chairman of the Board. The relevant data, meeting minutes, review and verification results and etc. have been documented.

### 1.4.2 External Verification

This report has been verified by BSI (British Standards Institution) based on GRI G3.1 A+ guidelines and AA1000AS standards. BSI's assurance statement is shown in Appendix III.

## 1.5 USE OF REPORT

### 1.5.1 Self-Comparison

The ideologies, practices and performances of CSC in CSR is divided into three parts, namely corporate governance, energy and environmental management and engagement in social harmony. Articles, charts, photos and indicators are used to show the highlights of CSC in recent years. They can be compared with those of the past and the future to see the trend and changes.

### 1.5.2 Comparison with Peers

The performance indicators of this CSR report can be compared with that of other steel companies. If the associated processes, boundaries or definitions may differ from peers, a footnote will be provided to avoid mis-understanding.





# 2



## MANAGERIAL STRUCTURE

- Corporate Governance
- Energy & Environmental Management
- Engagement in Social Harmony

### 2.1 CORPORATE GOVERNANCE

#### 2.1.1 Fundamental Concept

CSC's fundamental concept in corporate governance can be condensed as follows:

- (1) **Commit to top level governance.**
- (2) **Insist on decent management and proper disclosure.**
- (3) **Intensify management responsibility to achieve better performance while balancing stakeholder's benefits.**
- (4) **Assist local community in its social and economic development with favorable feedbacks.**

CSC's corporate position is identified as: **"Based in Taiwan, taking Asia as its core marketplace, centered on steel and materials, engineering and services, minerals and resources, and keen in environmental protection and energy conservation"**.

In addition to the carbon steel business development in Mainland China, South East Asia, India and etc., CSC will extend to other metal business such as specialty stainless steel, tool steel and Titanium, and Nickel based alloys. CSC will also increase its self-supply in raw materials to have a better control of operation. Moreover, CSC will enhance its capability in engineering and professional services to provide a sound basis for future expansion.

CSC's vision in corporate governance is set as: **pursue growth, continue energy conservation, environmental protection and value innovation, to become a globally trustworthy and outstanding steel enterprise.**

To deal with future challenges, CSC has devised the following strategies:

- (1) **Invest in upstream raw material to improve self-supply.**
- (2) **Strive for R&D in advanced technologies and green processes to upgrade steel quality and their applications, hence increase the value of the downstream supply chain.**



- (3) Engage in energy saving, environmental protection and sustainable development to enhance green competitiveness.
- (4) Strengthen sales channels and portfolio with better customer service to deepen partnerships and build platforms for co-development.
- (5) Integrate and expand business in engineering and technical service to increase the total revenue of CSC Group.
- (6) Boost corporate culture, human resource integration and on-job training to build an effective knowledge pass-down system.

### 2.1.2 Business Policy

CSC's business policies in 2010 are outlined as follows:

- (1) **Fully Support DSC's Expansion:** The 1<sup>st</sup> phase of DSC's (Dragon Steel Corporation) 2<sup>nd</sup> stage expansion was completed in April 2010 and fully operated since then. The 2<sup>nd</sup> phase of its 2<sup>nd</sup> stage expansion is on-going with the full support of CSC.
- (2) **Integrate Production and Sales:** To improve the overall effectiveness in the marketing and sales of steel products for the entire CSC Group including CSC, DSC and Chung-Hung Steel.
- (3) **Advance in Energy Saving and Waste Minimization:** Make full use of internal and external resources to cut down raw material and energy costs while fulfill the responsibilities in environmental protection and greenhouse gas reduction. In 2010 the total cost saving amounted to NT\$ 4.822 billion.
- (4) **Speed up in Technology Innovation:** In 2010 high grade steel products has been expanded to 3.80 Million ton and has contributed to the competitiveness of CSC's products and sales.

### 2.1.3 Governance Structure

#### I. Shareholder Meeting

Meetings of shareholders are classified as Annual General Meeting and Special Meeting. In accordance with the law, Board of directors convenes Annual General Meeting within six months after the expiration of every fiscal year, while the special meetings are convened whenever necessary. Main functions of the shareholders meeting are as follows:

- (1) To approve business plans of the company and hand the Board for execution.
- (2) To acknowledge the business report, financial statements, earnings distribution and compensation of losses.





## II. Board of Directors

The Board of Directors ("the Board") is the top decision-making body of China Steel Corporation (CSC), and is responsible for the approval of strategic plans and major projects.

The election of directors shall in all cases be pursuant to "Rules Governing the Election of Directors and Supervisors of China Steel Corporation.", and shall be considered over the overall composition of the board of directors.

The Board as a whole shall encompass the following knowledge and capabilities:

- |  |                                   |
|--|-----------------------------------|
| (1) Judgment of business operations;   | (5) Industrial knowledge;         |
| (2) Accounting and financial analysis; | (6) International market outlook; |
| (3) Operational management;            | (7) Leadership skills;            |
| (4) Crisis handling;                   | (8) Decision making.              |

The Board consists of eleven board members, including three independent directors. All of the board members are with professional background in business administration, finance, engineering, environmental protection, etc. Current directors are as follows:

| TITLE                 | NAME  |
|-----------------------|---|
| CHAIRMAN OF THE BOARD | JO-CHI TSOU<br>Representing Ministry of Economic Affairs, R. O. C.      |
| DIRECTORS             | JUNG-CHIOU HWANG<br>Representing Ministry of Economic Affairs, R. O. C. |
|                       | LIANG-TUNG FAN<br>Representing Ministry of Economic Affairs, R. O. C.   |
|                       | CHAO-HUA OU<br>Representing Gau Ruei Investment Corporation             |
|                       | JYH-YUH SUNG<br>Representing Ever Wealthy International Corporation     |
|                       | KING-LING DU<br>Representing Chiun Yu Investment Corporation            |
|                       | CHENG-I WENG<br>Representing Hung Kao Investment Corporation            |
|                       | CHAO-CHIN WEI<br>Representing China Steel Labor Union                   |
| INDEPENDENT DIRECTORS | JUU-EN CHANG  |
|                       | SHEN-YI LEE   |
|                       | TING-PENG LIANG   |

### III. Board Supervisors

The election of CSC's supervisors shall in all cases be pursuant to "Rules Governing the Election of Directors and Supervisors of China Steel Corporation." CSC's supervisors shall encompass the following qualifications:

- (1) **Trustworthiness and down-to-earthness;**
- (2) **Righteous judgment;**
- (3) **Professional knowledge;**
- (4) **Abounding experiences;**
- (5) **Reading ability of financial statements.**

In addition to the above qualifications, at least one among all CSC's supervisors shall be with accounting or financial profession.

CSC has three supervisors with professional background in science, financial, legal and labor rights.

| TITLE       | NAME   |
|-------------|--|
| SUPERVISORS | JU-HSUAN WANG (Representing Bureau of Labor Insurance) |
|             | I-LIN CHENG  |
|             | ANDREW DENG  |

### IV. Corporate Governance Committee

To enhance the efficiency of corporate governance, CSC circulated the "Organizational Rules of Corporate Governance Committee" in June, 2007, based on which the Corporate Governance Committee of CSC was set up. One of the independent board directors will hold the committee conferences at least twice a year. Its main tasks are shown below:

- (1) **Evaluate whether the organization and operation system of Corporate Governance Committee are sound, then make suggestions to Board.**
- (2) **Draw up the revision of Board procedure rules, and propose to Board for resolution.**
- (3) **Draw up and rectify the rules of each subordinate committee and submit to Board for resolution.**

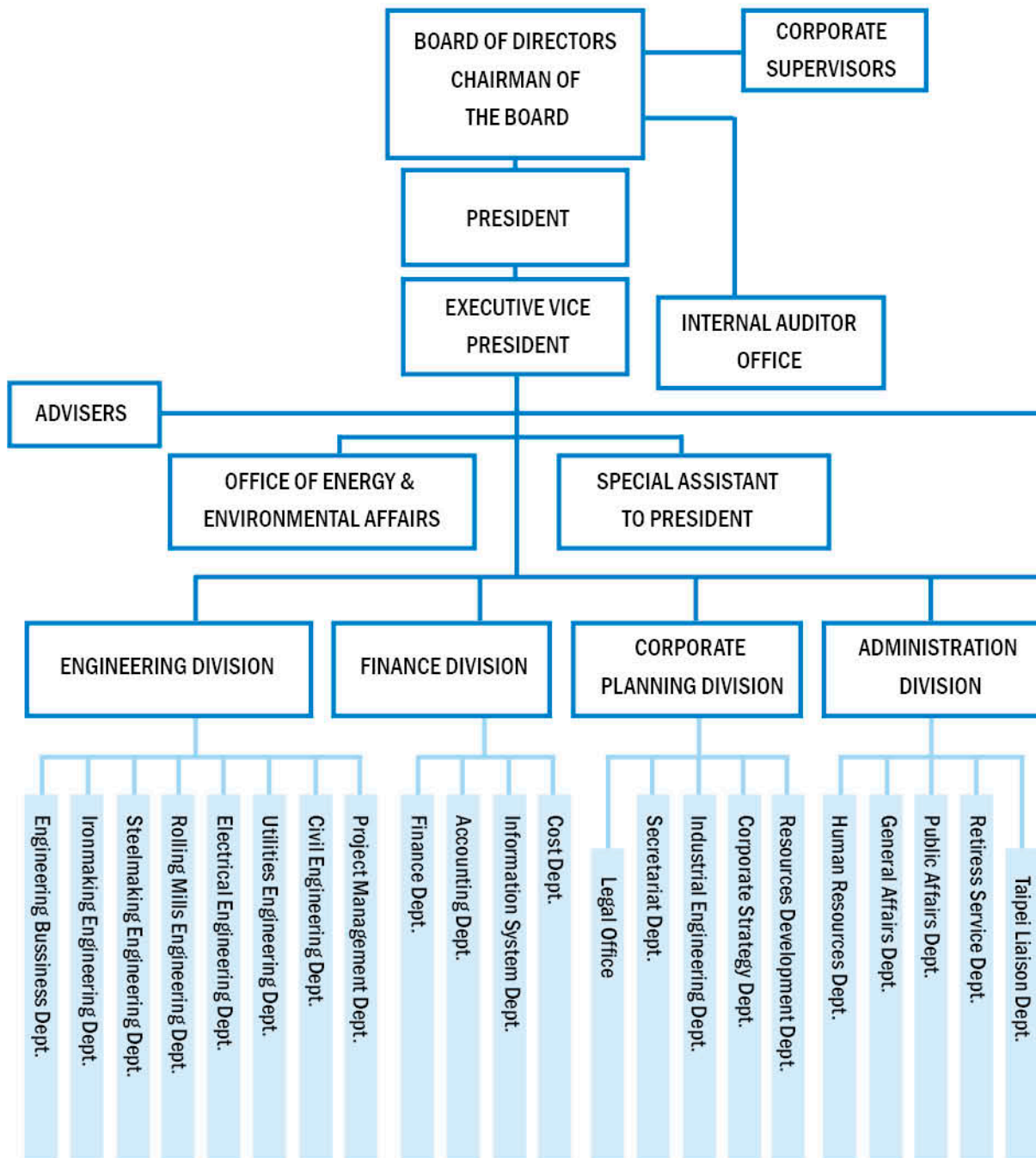
### V. Compensation Committee

To strengthen the function of compensation management, CSC established the compensation committee on Jun., 2007. Three directors were designated as the committee members, at least one must be independent director. One independent director is appointed as the chairman and convener for the committee meeting. The authority of compensation committee is to draft the following suggestions for resolution of Board meeting:

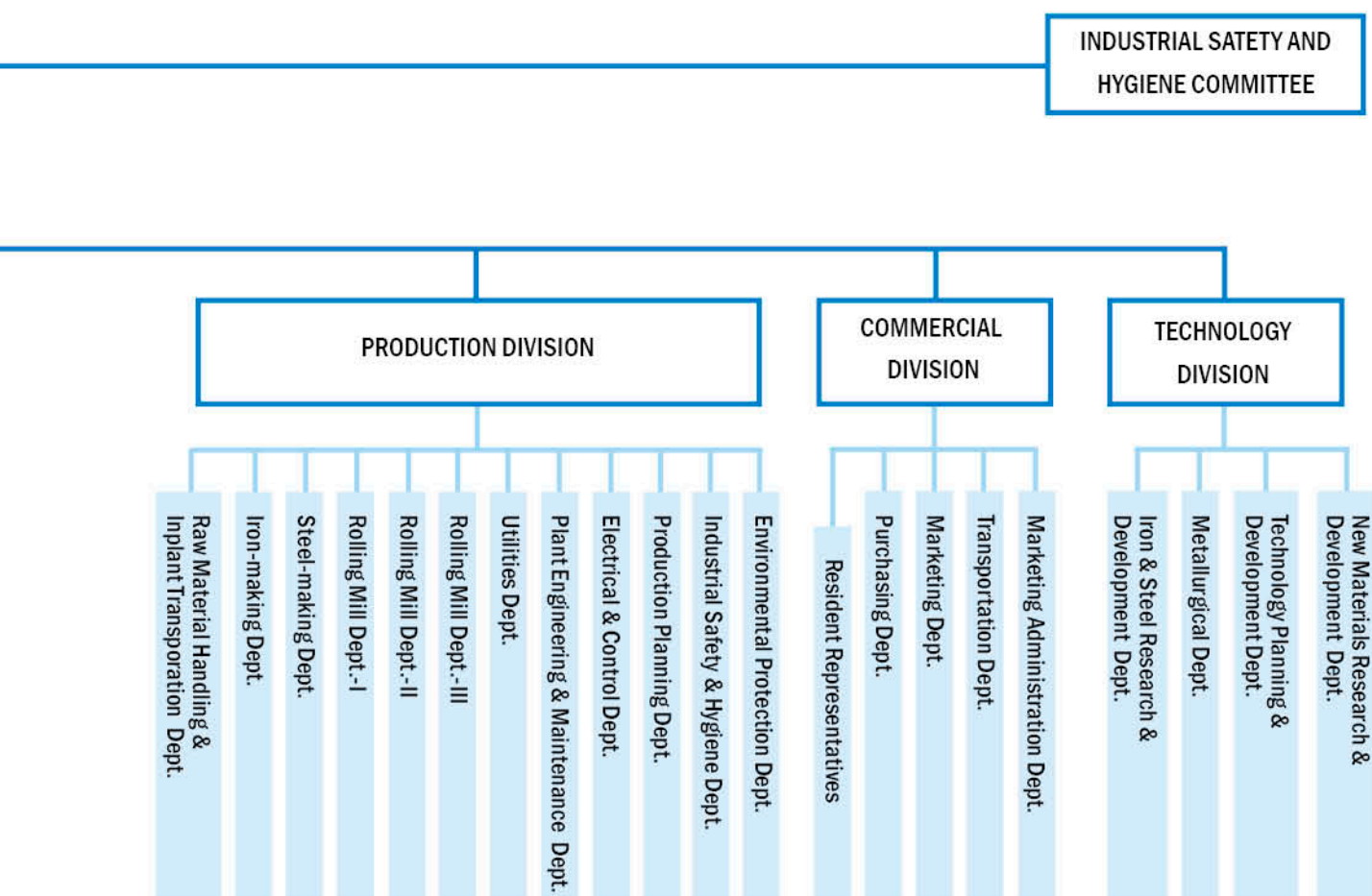
- (1) **The compensation of chairman and president.**
- (2) **Other cases which are handed over from Board meetings.**

## VI. Management Team

Chairman of the Board is the highest executive officer of CSC, with the President and Executive Vice President in charge of authorized duties. According to the needs of CSC in operations and development, CSC set up seven divisions each of which is under the charge of a Vice President. Under each of these divisions there are 4~12 departments to take responsibilities on various functions. In March 2011, CSC set up the office of Energy and Environmental Affairs which is subordinate to the Executive Vice President for making and integrating strategic plans on energy and other environmental issues. The overall management structure of CSC is shown below:



For major issues that are sophisticated and need in-depth handling, CSC set up committees to strengthen the coordination and integration on these issues. These committees are chaired by appropriate Vice Presidents or top executives to enhance their functions. The committees cover issues such as energy and environmental promotion, labor safety and health, Total Quality Management (TQM), Environmental Safety and Health Management, Patent Implementation, Sales Management Development, Corporate Culture, Employee Welfare, Energy Conservation, Knowledge Management, Creative Development Activities (CDA), Pension Fund Supervision and etc.





## VII. Senior Management

The Senior Management members and their inauguration dates are shown below:

| TITLE                             | NAME           | INAUGURATION DATE |
|-----------------------------------|----------------|-------------------|
| CHAIRMAN OF THE BOARD             | JO-CHI TSOU    | 2010.06.23        |
| PRESIDENT                         | CHAU-HWA OU    | 2010.06.23        |
| EXECUTIVE VICE PRESIDENT          | KING-LING DU   | 2011.03.01        |
| VICE PRESIDENT-ADMINISTRATION     | HSIUNG LI      | 2011.03.01        |
| VICE PRESIDENT-COMMERCIAL         | JIH-GANG LIU   | 2011.03.01        |
| VICE PRESIDENT-FINANCE            | CHUNG-I LIN    | 2011.10.01        |
| VICE PRESIDENT-CORPORATE PLANNING | KIN-TSAU LEE   | 2011.03.01        |
| VICE PRESIDENT-TECHNOLOGY         | YU-SOONG CHEN  | 2006.03.27        |
| VICE PRESIDENT-ENGINEERING        | TSUNG-REN JENG | 2010.09.01        |
| VICE PRESIDENT-PRODUCTION         | JYH-YUH SUNG   | 2010.09.01        |

## VIII. Subsidiaries

In addition to expanding its steel business, CSC has also diversified its scope of operations since 1989 for continual growth. By the end of 2010, CSC has invested in holdings of 46 companies including steel, engineering, industrial materials, logistics and service & investments businesses. Newly added companies were Rechi Precision Co., Ltd., a downstream customer, and Dongbu Metal Co., Ltd., an upstream ferromanganese supplier based in South Korea. The investments in these two companies were consistent with CSC's strategies to extend the downstream sales channels and upstream material supplies. CSC's main subsidiaries include the following:

| GROUP                  | COMPANY NAME                                    | MAIN BUSINESS  |
|------------------------|---|--|
| STEEL BUSINESSES       | DRAGON STEEL CORP.                              | Hot-rolled steel products  |
|                        | CHUNG HUNG STEEL CORP.                          | Hot & cold-rolled steel products   |
|                        | CSC STEEL SDN. BHD.                             | Cold-rolled steel products   |
|                        | CHINA STEEL SUMIKIN VIETNAM JOINT STOCK COMPANY | Cold-rolled steel products (in construction)                                   |
| ENGINEERING BUSINESSES | CHINA STEEL MACHINERY CORP.                     | Machinery manufacturing  |
|                        | CHINA STEEL STRUCTURE CO., LTD.                 | Steel structures, construction   |
|                        | CHINA ECOTEK CORP.                              | Engineering, design and construction of environmental protection installations |

Signing a contract with Dongbu Metal Co.



Signing a contract with Rechi Precision Co.



| GROUP                              | COMPANY NAME                            | MAIN BUSINESS   |
|------------------------------------|---|---|
| INDUSTRIAL MATERIALS BUSINESSES    | C. S. ALUMINUM CORP.                    | Aluminum products   |
|                                    | CHINA STEEL CHEMICAL CORP.              | Coal tar chemicals  |
|                                    | CHC RESOURCES CORP.                     | Pulverized blast furnace  |
|                                    | HIMAG MAGNETIC CORP.                    | slag and slag cement  |
|                                    |   | Magnetic materials  |
| LOGISTICS BUSINESSES               | CHINA STEEL EXPRESS CORP.               | Marine cargo transportation, chartering of vessels, and shipping agency |
| SERVICE AND INVESTMENTS BUSINESSES | CHINA STEEL GLOBAL TRADING CORP.        | Import and export of steel products                                     |
|                                    | GAINS INVESTMENT CORP.                  | Hi-tech investments   |
|                                    | CHINA STEEL SECURITY CORP.              | Security services and systems   |
|                                    | INFO-CHAMP SYSTEMS CORP.                | Information system planning (ERP) and automatic control systems         |
|                                    | CHINA PROSPERITY DEVELOPMENT CORP.      | Real estate development and investment                                  |
|                                    | CHINA STEEL MANAGEMENT CONSULTING CORP. | Management consulting   |



### 2.1.4 Internal Audit for Improvement

Internal Auditor (IA) Office is directly under the supervision of board directors. Its tasks are to audit and make recommendations for improvement of operational activities of CSC and its subsidiaries, to reasonably ensure the achievements of the goals of operating effectiveness and efficiency, reliability of financial reporting and compliance with relevant laws, etc. The focal activities of the Internal Auditor for 2010 include:

- (1) Test and assess the operational procedures of the eight operational cycles (procurement and payment, sales and receipts, investments, financing, production, fixed asset, salary and wage, research and development), in order to assure the concise control of high risk operational items.
- (2) Cross-check functions of the current operation system.
- (3) Conduct audits based on the regulations issued by Financial Supervisory Commission, Executive Yuan, such as: asset management, budget management, derivatives, related party transactions, supervision over and management of subsidiaries, functioning of the conduct of the board meetings, information and communication security auditing, prevention of internal transactions. Each audited result is reported, according to rules and procedures, to the supervisors and independent directors of the Board for review.
- (4) Assess due diligence of the internal control systems of the Company's subsidiaries.
- (5) Handle internal complaints and temporary assignments.

### 2.1.5 Risk Management

About 40% of global steel production was traded in international market. This illustrates the keen completion and risks in steel business. CSC adopted the following measures to reduce the possible risks:



| TYPE OF RISK        | MEASURES  |
|---------------------|---|
| MARKET RISK         | <ol style="list-style-type: none"><li>1. Increase high grade, value-added and green products to meet future market demand.</li><li>2. Improve production flexibility to widen product supply.</li><li>3. Proactively look for investment to strengthen market position.</li><li>4. Enhance sales channels.</li></ol>                |
| RAW MATERIAL RISK   | <ol style="list-style-type: none"><li>1. Evaluate suppliers carefully.</li><li>2. Set up proper inventory.</li><li>3. Develop new suppliers for more diversified sources and evaluate mineral resources for long term investment.</li><li>4. Build sound, dependable and mutually beneficial relationship with suppliers.</li></ol> |
| TRANSPORTATION RISK | <ol style="list-style-type: none"><li>1. Optimize transportation plan with the bottom-line to assure uninterrupted supply of needed materials.</li><li>2. Exported products are covered with proper insurance.</li><li>3. Domestic customers are assured of in-time supply of booked quantities.</li></ol>                          |



| TYPE OF RISK                          | MEASURES  |
|---------------------------------------|---|
| UTILITY RISK                          | <ol style="list-style-type: none"> <li>1. Enhance facility monitoring and revamping to keep stable and responsive by maneuvers.</li> <li>2. Keep main water supply dependable by timely dredging and improving its piping condition.</li> <li>3. Participate in the recycling of nearby municipal sewage water and the wastewater of a neighboring industrial compact.</li> </ol>   |
| INFORMATION SYSTEM RISK               | <ol style="list-style-type: none"> <li>1. Standardize procedures followed by education and training.</li> <li>2. Strictly monitor the system plus timely maneuvers.</li> </ol>  |
| PROJECT MANAGEMENT RISK               | <ol style="list-style-type: none"> <li>1. Implement contracting management and capital expenditure management systems.</li> <li>2. Check the registered vendors' credits periodically.</li> <li>3. Place uniform purchase orders for bulk construction materials as client's supply.</li> </ol>   |
| ENVIRONMENTAL, SAFETY AND HEALTH RISK | <ol style="list-style-type: none"> <li>1. Conduct hazard identification and risk assessment thoroughly to upgrade safety culture.</li> <li>2. Reduce high risk working conditions with proper measures and maneuvers.</li> <li>3. Pay close attention to environmental and energy taxes, and contribute to their development under fairness and justice.</li> <li>4. Reduce environmental burden, abnormal emissions and fresh water consumption proactively.</li> <li>5. Respond to climate change by saving energy, reducing GHG emission and lowering climate related risks.</li> </ol>  |
| FINANCIAL RISK                        | <ol style="list-style-type: none"> <li>1. CSC adopts dynamic measures to manage the volatility of interest rates as well as exchange rates of foreign currencies.</li> <li>2. Dispatching receipts and disbursements have the top priority when making use of short term capital. Mid-to-longer term capital is mostly spent as capital expenditure.</li> <li>3. Short term foreign currencies are used in natural hedge principally. Deficits of foreign currencies are usually hedged with forward exchanges.</li> <li>4. CSC makes use of the technology of e-commerce and safety mechanism of digital signatures to simplify the payment process of customers.</li> </ol> |



### 2.1.6 Employee Participation

CSC highly appreciates the opinions of employees not only for consensus building but also to collect good ideas through the interaction process. There are several channels for CSC's employees to participate as shown in the following:

- (1) Labor Union representative has participated in the CSC's Board meetings of Directors as a member since May 31<sup>st</sup>, 2001.
- (2) The Chairman of Board and the President of CSC hold weekly communication meeting with employees to collect opinions from representatives of various departments.
- (3) Labor and Management Committee holds meetings every month, the Welfare Board and the Occupational Safety and Health Committee hold meetings every two months.
- (4) The Pension Fund Supervisory Committee holds meeting every quarter.
- (5) Every department holds communication meeting every two or three months depending on its size.
- (6) Human Resources Development Committee and CSC Labor Union hold joint meetings regularly.
- (7) The mailbox of Chairman is set up on website to allow employees reflect their opinions which will be responded shortly.
- (8) The conference between top management and the councilmen of the CSC Labor Union is held every six months.

### 2.1.7 Information Disclosure

CSC has obtained the affirmation of "Information Transparency and Disclosure Ranking" conducted by Securities and Futures Institute, and was awarded as A+ for the past 3 years. Currently material disclosure points include:

|                         | ITEM   | CONTENT  |
|-------------------------|--|--|
| CORPORATE WEBSITE       | <ul style="list-style-type: none"><li>■ About CSC</li><li>■ Investor Relations</li><li>■ Customer Service</li></ul>  | <ul style="list-style-type: none"><li>■ CSC profile , corporate citizen, research and development, news center, web-service</li><li>■ Stockholder services, corporate governance, investments</li><li>■ Customer services, production, e-commerce</li></ul>  |
| INTEREST OF SHAREHOLDER | <ul style="list-style-type: none"><li>■ Service line for shareholder</li><li>■ Real time announcement of material information</li><li>■ Communication with investors</li></ul> | <ul style="list-style-type: none"><li>■ Toll free service line and specific email address for shareholders</li><li>■ Real time announcement of monthly revenue, production /sales results and resolution of domestic steel price adjustments</li><li>■ Reception of investors' plant tours and meetings; participation of investors' conferences</li></ul> |
| BUSINESS OPERATION      | <ul style="list-style-type: none"><li>■ Spokesman procedures and news liaison section</li></ul>  | <ul style="list-style-type: none"><li>■ New messages and information from internal divisions</li><li>■ Press release after the board meeting</li><li>■ Press release of domestic steel price adjustments</li><li>■ News of subsidiaries and affiliates</li><li>■ News of extraordinary events</li></ul>  |



## 2.1.8 Operational Performance Management

### I. Continual Improvement

CSC's integrated processes of continual improvement centers on quality characteristics and production processes of steel products, and extend into continual improvement of the effectiveness and efficiency of the Processes under each Department. In addition, the methodology known as "Plan-Do-Check-Act" were applied to all processes

# P<sub>lan</sub>

Establish annual Operation Policy of CSC based on.

- (1) corporate fundamental concepts, policies, yeasly plans,
- (2) Performance of previous year,
- (3) Perspectives for next year.

# D<sub>o</sub>

Each Division shall deliberate the consistency of direction in adhering to CSC's Annual Operation Policy and ascertain the completeness in accepting the deployed objectives. Then they shall establish their own Division Operation Policy.

# C<sub>heck</sub>

Each Division and Department shall implement the approved Operation Policy and review & report the results to Industrial Engineering Department. Also quarterly "TQM Committee Meeting" shall review the results of Annual Operation Policy.

# A<sub>ct</sub>

Report of yearly results and reviews are submitted for approval, then integrated by the Department of Industrial Engineering for following-up actions.



## II. Chain of Production and Supply

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In order to upgrade service quality and enhance competitive edges, CSC set up an electronic management system to fit its needs in market management and sales planning. This system was integrated, optimized and exceeded based on an up-to-date marketing system. It can cover price offering, contracting, supply planning, order-taking, capacity and lead time management and etc. The system also expedites the process of production planning and sales tracking, with a real-time and paperless feature. By enhancing the operating spectrum, depth, and efficiency, an orderly production-sales environment and a win-win situation was created for CSC and its customers. Not only it makes CSC closer to customers, but also helps CSC quickly respond to market changes, thereby decreases transaction costs and improves the overall competitiveness.

## III. Implementation of quality management system and new product developments

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New product developments and implementation of quality management system are the core operations of an integrated steel mill. CSC's main performances in 2010 were as follows:

- (1) Quality Management System:** CSC's top management participated in the establishing, implementation and continual improvement of the quality management system for steels. The approved quality manual not only serves as the basis for implementation, but also demonstrate Top management's commitment. The quality management system of steel products comprises various production and marketing processes, as well as effective management of hazardous substance, implemented by each Dept. These processes are categorized to Customer Oriented Processes, Support Processes and Management Processes. Their application ensured the availability of needed resources and information as well as the monitor, analysis and continual improvement of the system.
- (2) Improvement and New Product Development:** The economic condition gradually recovered after the 2008 financial crisis, hence the domestic demand for steel products increased in 2010. Since Dragon Steel launched its steel production in 2010 CSC Group's production capacity has expanded by about 2.5 million tons annually. CSC endeavors to help DSC establish its quality management system and technical capabilities to minimize learning time and maximize the Group's profitability. In addition, CSC makes every effort in the related fields such as new product development, promoting steelmaking process technology, improving product quality, establishing systems such as cross-process information, technical service, product certification and the upstream-to-downstream integration of the CSC Group.

The key projects and objectives achieved in 2010 are summarized as follows:

### 1 ESTABLISH AN OUTSOURCING MANAGEMENT SYSTEM FOR DRAGON STEEL.

Ensure DSC's product quality is consistent with that of CSC to smooth production and sales plan between CSC and DSC.

### 2 UPGRADE DSC'S BILLET QUALITY FOR ROD PRODUCTS

Meeting the requirements of commercial-grade quality.

### 3 NEW PRODUCT DEVELOPMENTS

Developed 27 new steel products.

### 4 UPGRADE STEELMAKING TECHNOLOGY

Developed the technology of "extremely low sulfur without calcium-silicon treatment to promote steel cleanness". Improved the surface quality of ultra-low carbon steel. Reduced the tear defect of Nb-V added plate and the surface pitting of 50CS1000 electrical steel sheets.

## 5 IMPROVE PRODUCT QUALITY

A great deal of improvements were accomplished through 6 Sigma activities.

## 6 ESTABLISH CROSS-PROCESS INFORMATION SYSTEM

Completed up-to-downstream process quality analysis and improvements, from steelmaking to final stage rolling or finishing, by linking host computer, process computer, automatic surface inspection system, etc.; thereby entering a new area of integrated quality analysis & control.

## 7 OBTAIN PRODUCT CERTIFICATION

Including Certification of hull plates from individual International Classification Societies, ISO / TS16949 (for ISO 9001 & Auto industry), JIS Mark of Japan, SNI Mark of Indonesia, MS Mark of Malaysia, FPC Certificate of Singapore, IECQ Certificate of Hazardous Process Management, Certificate of ELV Compliance (Directive 2008/689/EC), and Product Certification of major auto manufacturers (Toyota, Chrysler, GM, Honda, etc.). Including a Best Supplier Award from Volkswagen (VW) Group.



ISO/TS16949



ELV

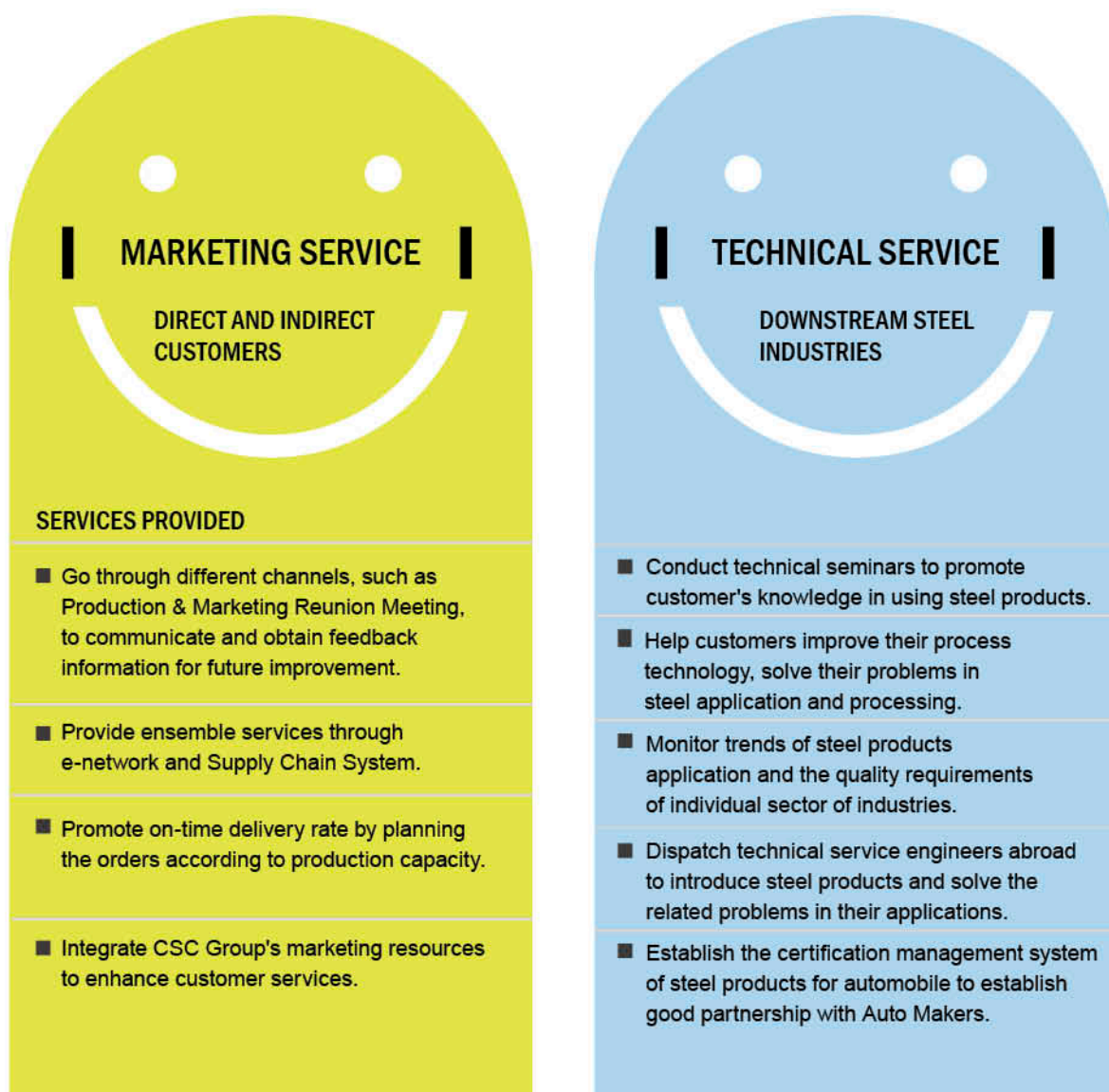


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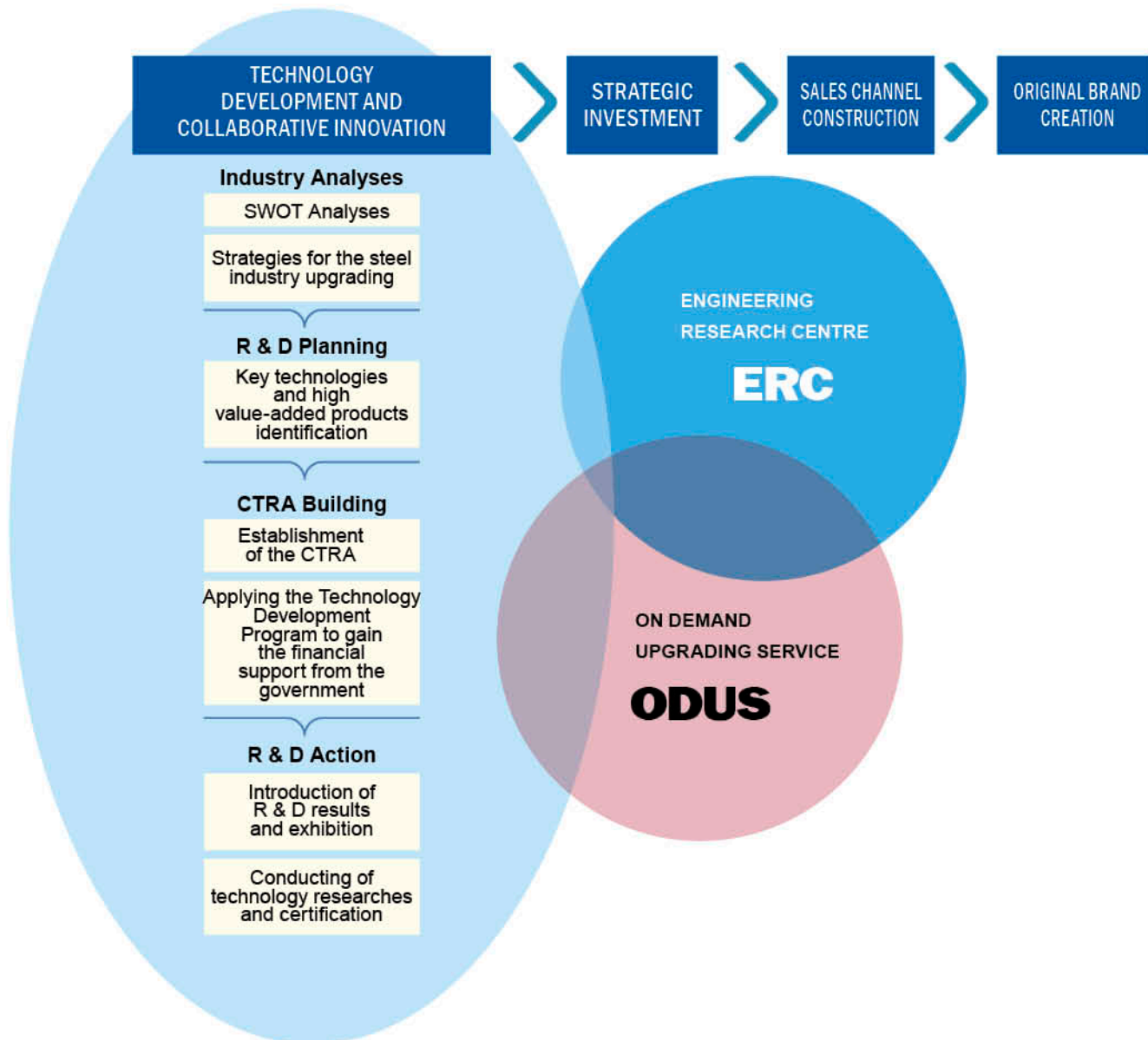
#### IV. Customer Service

Customer focus is the basic operation concepts of CSC. It has been applied to the marketing of steel products, byproducts and energy products. CSC's customer service can be divided into marketing and technical fields. Their main services are shown as follows:



## V. Upgrade Steel-using Industries

Upon 2006, CSC commenced the work to upgrade the technology of steel-using industries in Taiwan under the instruction of Ministry of Economic Affairs. In the first phase of the work, around 21 steel-using industries were surveyed and their needed key technologies identified, followed by extracting the high value-added steel products to be developed. In order to help these industries build up the necessary key technologies they needed to enhance competitiveness, several Core Technology Research Alliances (CTRA) were organized jointly among CSC, its downstream customers, academia and research institutes for integrated efforts and focus on different key aspects respectively. The basic ideas of this upgrading team and the way it works are illustrated in the following figure:







R & D Alliance for High Value-added Bearing Industry

The second phase of the work was launched right after the completion of first phase. In the second phase, the development of saw wire for wafer cutting and technology for hot pressing will be included to further enhance the integral production efficiency and the green competitiveness of the steel-using industries in Taiwan and pursue the goal of high value-added products and green manufacture.

## VI. Privacy Policy

In addition to providing the best products and services to customers, CSC is committed to protect on the information provided by customers to ensure customers' privacy. This is why there is no report of customer complaints about privacy leakage or data missing in 2010. CSC's privacy policy is shown as follows:

- (1) All CSC information systems must have complete virus protection.
- (2) A verification system for every information portal is installed to insure sensitive information can only be accessed by its owner.
- (3) An e-commerce certificate management system to offer full protection of customers' privacy.

### 2.1.9 Adapt to Future Impacts

World Steel Association has predicted that steel demand will increase by 5.9% in 2011 worldwide and Asia be the core area of growth. Under the steady recovery of world economics and the quick development of Mainland China, the prices of iron ores and coals are expected to hike again. Furthermore, to adapt to the external changes such as global warming, extreme weather, as well as the demand in safety and health management, environmental protection, energy saving and ecological conservation, industries need to fulfill their responsibilities to stay sustainable. The forecasted future developments and potential risks for CSC are highlighted as follows:

- (1) The world economics is recovering. Major steel makers are expected to compete in the investment of iron ore mines and coal mines to have a better control of the resources for steel production.
- (2) Global protectionism will continue, while EU, US and China will limit their imports of steels by anti-dumping or related mandatory measures, resulting in an adverse situation for CSC's exporting. Conversely, the importing of steel products in Taiwan is relatively easy, introducing a big threat for survival to the domestic steel producers.
- (3) The development of globalized operations has accelerated the outward shift of downstream industries of Taiwan, giving rise to a reduced domestic demand of steel products.
- (4) The domestic rolling mills are with an over capacity and need to increase their exports to maintain normal operations.
- (5) Since Taiwan's participation in World Trade Organization (WTO), the import taxes of steel in Taiwan have been removed totally which improved the competitiveness of imported steel products. On the other hand, Mainland China does not want to resolve the conflicts for the steels imported from Taiwan either through WTO or TSIA (Taiwan Steel and Iron Industries Association), making it difficult for the Taiwan steel industries to export to Mainland China.
- (6) Mainland China aggressively invests and imports newest steel technology to expand its steel capacity. This is gradually reducing the markets of foreign steel products and turns Mainland China to a net-export country of steel.
- (7) The steel and iron markets of Taiwan will be open to Mainland China gradually under the framework of ECFA (Economic Cooperation Framework Agreement). The excess steel making capacity of Mainland China and the variation of its steel quality will be a big impact to Taiwan iron and steel industries on their operations and existence.

- (8) After the formation of Asian economic cooperation systems (such as the Association of Southeast Asian Nations plus Three, Korean and EU Free Trade Agreement), Taiwan will face the risk of being marginalized and become less competitive. The situation will become worse if Taiwan can not join similar regional cooperation parties treaties.
- (9) If domestic industries are excessively regulates in environment, energy or safety and health issues (e.g. Greenhouse Gas Reduction Act, Energy/Carbon Taxes Act), unfair competition may impact domestic industries badly.
- (10) Low carbon energies and electricity as well consuming as the footprints of steel products will become more and more important issues to steel industry's operation and competitiveness.

CSC adopted the following measures to minimize the above-mentioned impacts and create a more favorable condition for operations:

- Adjust organizations and functions while devise CSC Group's strategies and actions.
- Enhance cooperation with domestic and overseas related industries, green energy industry, major suppliers and research institutions.

#### 2.1.10 Technical Exchanges and Cooperation

##### I. With Professional Associations and Institutes

The products and by-products of CSC are sold to various domestic industries. Participation in related associations and institutes is a good way to enhance mutual communication and cooperation. For crucial policies and regulations, these channels are good platforms to exchange messages and ideas and integrate voices which are more representative and taken more seriously by related sectors. In other CSR issues such as energy saving and GHG reduction, green building, social participation, assistance to disasters and post-disaster rebuilding, these channels can also serve as good places for emulation and cooperation to mutual benefits.

##### II. With Steel Associations and Institutes

- (1) **world steel association:** CSC has been a core member since long time ago. In addition to attending its committees on Technology, Safety and Health, Environmental Policy, CSC also joins its Working Groups on Sustainability Reporting, GHG data collection, Life Cycle Assessment and Safety and Health Survey by providing data, opinions and illustrations. Through the interactions and cooperation of this channel, CSC is able to acquire the updated information and closely connect to the global trend.
- (2) **South East Asia Iron and Steel Institute (SEAISI):** CSC is a key supporting member of this Institute. To help the peers in South East Asia on a mutually beneficial basis is a long term commitment of CSC. Activities include nominating/taking up the General Secretary of SEAISI and Chairman of its Environmental and Safety Committee, promoting technical training, holding symposiums on steel technology, Environmental protection and safety issues and sharing country reports. Besides maintaining good relationship and interaction with the members, CSC can also collect regional information on business, technology and policy as a sound basis for business expansion and strategic cooperation.
- (3) **OECD Steel Committee:** The steel committee of OECD (Organization of Economic Cooperation and Development) is also an excellent platform for information exchange and opinion providing. CSC frequently supports the Ministry of Economic Affairs of Taiwan by jointly attending the OECD Steel Committee meetings. Not only can we collect important messages from its presentations and discussions, but also give opinions and make presentations to improve the international visibility of Taiwan.



## 2.2 ENERGY & ENVIRONMENTAL MANAGEMENT

### 2.2.1 Concepts and Policies:

The environmental management is closely linked to safety and health management. Hence CSC has combined these two functions into one system in 2005 and set the policies of environmental, safety and health management as follows:

- (1) **Care for Lives:** Respect lives through upgraded working environment and safety management to prevent work-related injuries and illness thus contribute to better employee health.
- (2) **Risk Management:** Risk assessments and environmental considerations are applied thoroughly to enhance hazard control, pollution prevention and avoid potential risks in workplaces.
- (3) **Training and Communication:** Educate workers with better concepts in environmental protection, industrial safety and hygiene. Establish a proactive safety culture that encourages communication among workers, contractors and other stakeholders for more harmonious relations.
- (4) **Compliance with Regulations:** Identify and strictly follow regulatory requirements to enhance preventive functions and fulfill the role of a good corporate citizen.
- (5) **Continual Improvement:** Strives continually to zero-accident, energy saving and low emissions for better performances in environmental protection, industrial safety and hygiene, and engage in corporate sustainability.

CSC's concepts and vision on energy and environment issues are:

- (1) **Improve KPIs (key performance indexes) to approach the top levels and be an environment-friendly enterprise internationally.**
- (2) **Use internal and external resources to the maximum effectiveness.**
- (3) **Speed up the use of BATs and renewable energies to reach the goals of low carbon, low pollution, and high added value.**
- (4) **Develop energy-saving products and green new businesses to parallel with the national development in low-carbon and green economy.**

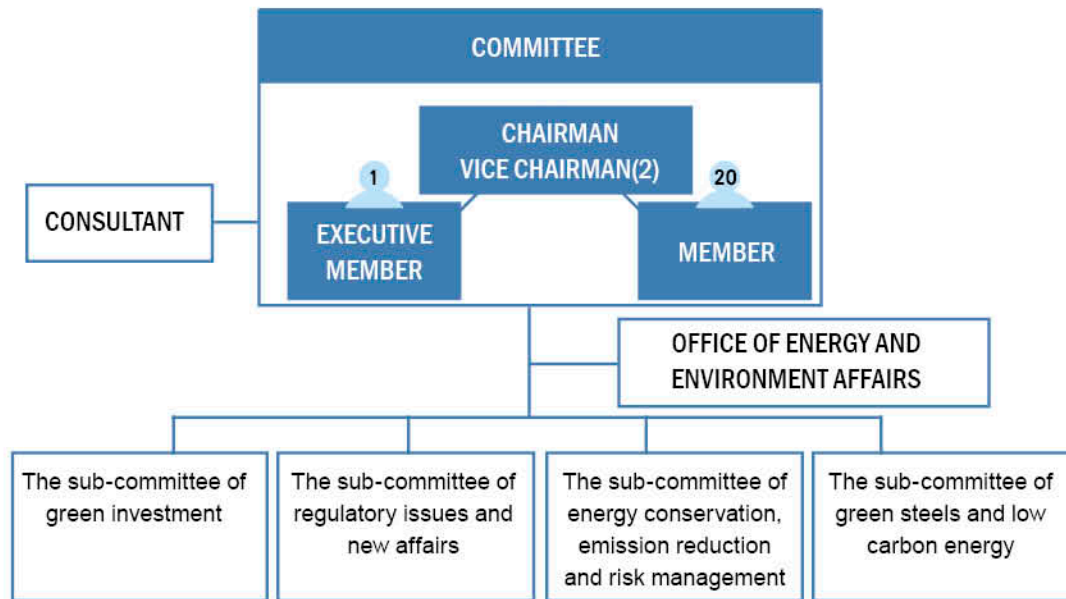
### 2.2.2 Functional Structure

To fulfill the responsibilities in energy saving, environmental protection and carbon reduction, CSC set up the Environmental Protection Dept. and Utilities Dept. to handle practical issues, and supported their functions with technologies from R&D Dept. In addition, CSC set the cross-departmental organizations such as "Energy Conservation Committee", "Environment, Safety and Health (ESH) Management Committee", "CSC Group Committee for Energy and Environment Promotion" to reinforce the coordination and integration on energy and environmental issues.

#### I. Committee for Energy and Environment Promotion

CSC created the Office of Energy and Environment Affairs (EA) on March, 2011 and the CSC Group Committee for Energy and Environment Promotion in April, 2011. The Chairman of the CSC Board also chairs this committee which is composed of 4 sub-committees, namely green steels and low carbon energy, energy conservation and pollution reduction, regulatory issues and new issues as well as green business. The Office of Energy and Environment Affairs is responsible for the promotion of related tasks following PDCA loop. The functional structure of this committee is shown below:





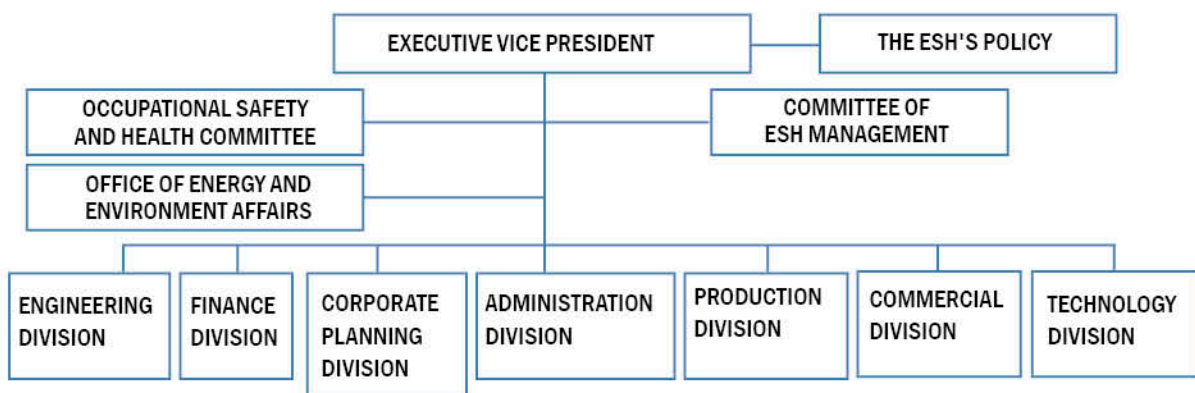
The members of this Committee of Energy and Environment include:

- (1) **Vice chairman:** President and Executive VP of CSC.
- (2) **Executive Member:** The Assistant VP in charge of the Office of Energy and Environment Affairs.
- (3) **Members:** VPs of CSC and the president of related CSC group companies.
- (4) **Conveners of Sub-committees:** 3 VPs of CSC Divisions and the executive member of this committee.

## II. ESH System

CSC set a Safety, Hygiene and Environment Dept. in 1993 after expanding environmental functions and combining them with Safety and Hygiene functions. In 1996, an Environment Management System (EMS) was implemented at CSC.

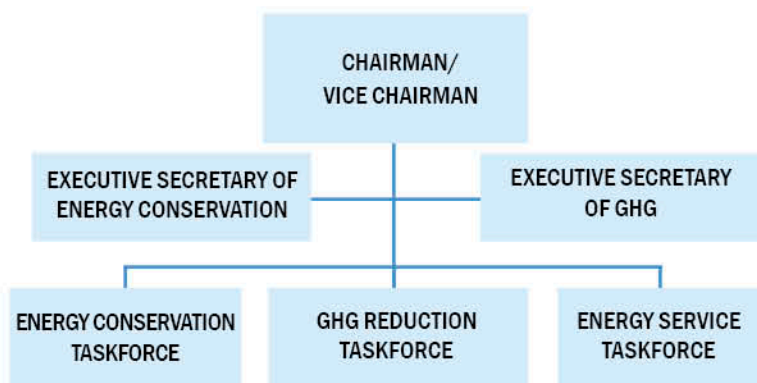
CSC's EMS was granted ISO 14001 certificate in 1997. This system was combined with CSC's Occupational Safety System (OHSAS 18001) in 2005 as an Environmental, Safety and Health Management (ESH) System. This system is chaired by the Executive Vice President who is responsible for making the decisions of the ESH's practices. The organization of the ESH Committee is shown in the following chart:





### III. Energy Conservation Committee

CSC is an integrated steel mill. Its energy cost amounts to 26.3% of the production cost. To reduce energy cost effectively, an Energy Conservation Committee was established in 1978 and the Vice President of Production was appointed the committee chairman. The current issues of this committee include improving energy efficiency, reducing greenhouse gas emission and providing energy services to various departments with the focus to improve plant level technical performances and practices. The structure of this committee is shown as follows:



Environmental measuring



Environmental monitoring



The pool of storm run off



The SCR system at sinter plant

- (1) **Vice Chairman:** An Assistant VP of Production Division
- (2) **Executive Secretary of Energy Conservation:** General Manager of Utilities Department.
- (3) **Executive Secretary of GHG Reduction:** General Manager of Environment Protection Department
- (4) **Committee Members:** Related General Managers of Production Division and representatives of R&D

#### 2.2.3 Lessen Pressure for Environment

It is inevitable for an integrated steel mill to utilize a lot of natural resources and primary energies, and to cause some environmental load. Nevertheless, CSC always targets at the top level environmental performances of the world to fulfill its social responsibilities, despite of the insufficient space on site. Except during the time of the financial tsunami, CSC endeavors to adopt advanced equipments to reduce effluents and emissions, while strict monitor and control of its air emissions and wastewater effluent is a long time commitment. CSC also interacts and cooperates actively with top rank steel companies in energy and environmental issues and breakthrough technologies to reduce its load on environment.

CSC's experiences show that it is also possible to lessen environmental load through cooperative efforts in transportation, district energy conservation and industrial ecology. Therefore, CSC has been not only trying to find opportunities in these fields, but also helping and collaborating with others actively when they have brilliant ideas. In addition, CSC encourages its labor union, associations and retired employees to participate in activities such as environmental protection and carbon reduction to extend CSC's involvement.

### 2.2.4 Cool the Earth

In recent years, global warming and extreme climate have become a common threat to mankind. Kyoto Protocol and Copenhagen Accord had itemized carbon reduction targets for various countries. Being located in a sub-tropical region, Kaohsiung city and CSC is in the high risk group for possible climate impact. Therefore, to join the effort proactively to cool down the earth is a the major scheme of CSC. These actions of csc include:

- (1) Setting up short, mid and long term carbon reduction roadmaps. Improves performance of carbon reduction to a global top level by implementing Best Available Techniques (BATs), adopting low carbon energies and extending district synergy in energies and resources.
- (2) Developing greener steel products through life cycle assessment to improve their performances in external carbon reduction.
- (3) Participating actively in activities of green investment, carbon reduction cooperation, carbon credit acquire and Carbon Capture and Storage (CCS).
- (4) Promoting the development of a low carbon society by initiating low carbon life and low carbon consumption inside CSC Group.

### 2.2.5 Participate in Circular Society

Circular society is a needed model for human to attain sustainable development. The Zero Disposal Campaign, promoted by Taiwan's EPA, is an important part for circular society. Industrial ecology is another. Although there has been a sound achievement for the Zero Disposal Campaign in Taiwan, there is still a big room for improvement, e.g. to link the recycling systems between municipalities and industries adequately.

Under the current regulations and conditions of Taiwan, there are some obstacles for the formation of a circular society. To emulate advanced countries can us save lot of efforts and shorten the time needed for transition. CSC will try to assist the domestic evolution to a circular society based on its successful experiences in district energy synergy and industrial ecology.

### 2.2.6 Join Green Growth

Low carbon economy is now the trend of the world. The green industries and green growth are from low carbon economy. Except for providing data and suggestions, CSC collaborates with the government by engaging in green businesses with future potential.

To increase cost effectiveness and competitiveness, CSC will cooperate with other companies to invest in green industries based on the win-win principle and step by step approach. Current potential partners include companies from electrical and electronics industry, steel industry, new energy industry and the local government.

### 2.2.7 Emulate Advanced Countries

In climate change and energy tax issues, lots of documents and packaged measures have been developed in advanced countries such as European Union, Japan and US. Taiwan can benefit from this information to the best it can. This is a much wiser strategy than "close the door and re-invent the wheel".





Several years ago CSC initiated this approach by collecting updated and comprehensive information from advanced countries. With the integration and assistance of the Chinese National Federation of Industries (CNFI), this useful information was delivered to other sectors and has helped this nation's communication and negotiation on crucial climate change policies and acts. Useful information include European Council's GHG allocation to industries to avoid carbon leakage, US DOE's collection on international energy prices (after tax), EU and OCED's reports and summary tables on energy taxes, UK's packages on climate change levy and etc.

## 2.3 ENGAGEMENT IN SOCIAL HARMONY

### 2.3.1 Concepts and Scope

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CSC's concepts and scope on the engagement in social harmony are condensed in the following:

- (1)**Proactive and Responsible:** Not only CSC is obliged to the safety and health of employees and contractors, but also take good care of employees in salary, welfare, equal right and job training.
- (2)**Local Needs First:** Based on the concept to maintain harmony and co-prosperity with local communities, local environment and safety is CSC's prime concern. In addition, CSC is devoted to local development in various ways, while pays its income taxes, environmental fees and others all locally.
- (3)**Multiple Approaches and Inputs:** In addition to looking after the benefits and rights of shareholders, employees, contractors and local community, CSC also considers it very important to advocate fair competition, self-request in governance and social harmony, and to contribute positively in national policies and global issues.
- (4)**Shoulder with Willingness:** In issues relating to public welfare as well as art and literature education, CSC is pleased to take some responsibility and make the society better. Activities are being carried out mainly through functional departments, labor union, internal social groups and the CSC Group Education Foundation.

### 2.3.2 Safety and Health Management

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#### I. Basic Beliefs

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CSC's beliefs in occupational safety and health management are:

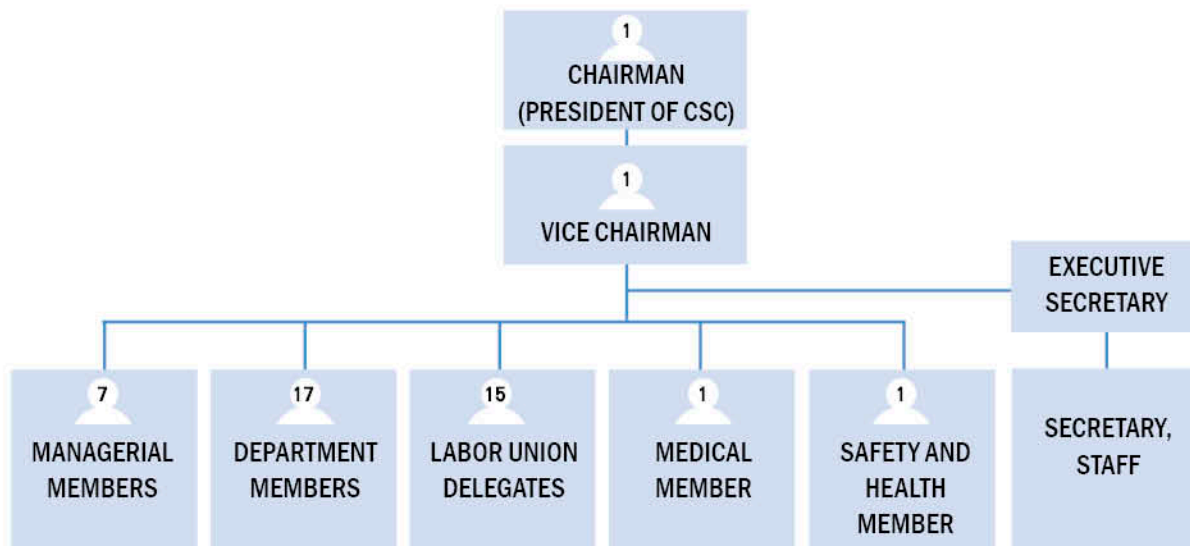
- Employees are the most valuable asset of enterprises.
- Ensuring employees' safety and health is the primary management responsibility of CSC.

To protect its labor's safety and health, CSC has drawn up 10 basic doctrines as follows:

- (1) All injuries and diseases can be avoided.
- (2) It's my duty and pride to keep safety.
- (3) Prevention of occupational hazards is a responsibility of management level.
- (4) Safety job starts with plan, disaster prevention commences with hazard identification.
- (5) Instruction, communication and audit are important things to make sure of safe work.
- (6) It's a basic requirement for employees and contractors to work safely.
- (7) Contractors are our safety partners.
- (8) Unsafe behaviors and workplace should be immediately corrected and improved.
- (9) By determination, attentiveness, and concern to achieve zero accident.
- (10) All performances make no sense without safety.

## II. Safety and Health System

In 2000, CSC introduced an OHSAS 18001 Occupational Health and Safety Management System which was certified in 2002. In 2009, CSC was granted a TOSHMS (Taiwan Occupational Safety and Health Management System) certificate. This system is based on a Plan (P), DO (D), Check (C), and Action (A) cycle to effectively improve safety and health conditions at workplace and to reach the CSC's goal of zero hazards. CSC's Occupational Safety and Health Committee, chaired by its President, is composed of subcommittees across operational departments. It holds conferences every two months to promote and review corporate-wide safety and health activities. The structure of this committee is shown as follows:



- Vice Chairman:** Executive VP of CSC
- Managerial Members:** VPs of 7 Divisions
- Department Members:** 17 General Managers from related Departments.
- Labor Union Delegates:** 15 (no less than 1/3 of total members)
- Safety and Health Member:** General Manager of Industrial Safety and Hygiene Dept.
- Medical Member:** Chief of Corporate Clinics
- Executive Secretary:** General Manager of Industrial Safety and Hygiene Dept.
- Secretary:** Manager of Safety Planning Section, Industrial Safety and Hygiene Dept.
- Staffs:** 2, Engineers of Industrial Safety and Hygiene Dept.

## III. Management of Change

It is vitally important to establish the Management System of Change since changes in personnel, working condition and other significant changes could easily lead to accident. CSC's management of change is focused on ensuring that all changes have been evaluated in advance through the hazard identification and risk assessment process. Proper measures are then implemented according to the result of the assessment to keep the processes, activities and services safe.





Maneuver of accident at wharf



Training of hanging basket

## VI. Education and Training

At CSC, to train employees and contractors to reduce human errors and improve working routines at workplaces is a priority issue of safety education and training, since most accidents are related to human faults. In addition, CSC arranges several maneuvers each year to enhance employees' awareness and responses to emergent incidents. A software system is then used to provide updated training and real-time information. It is easy to find and use these information thus also improves the effectiveness of the safety management, control and audits.

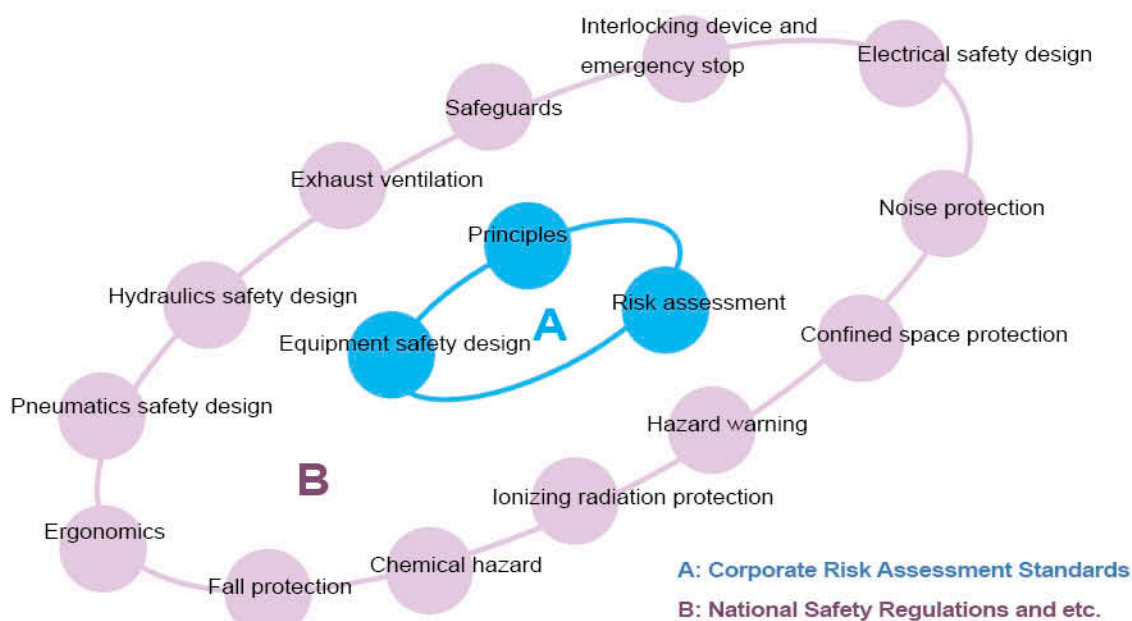
## V. Inherent Safety

Safety condition at workplaces is a fundamental factor for occupational safety. CSC has formulated comprehensive safety guidelines on facilities and conditions to promote inherent safety since 2008. These guidelines were drawn based on Safety Standards from ISO (for Machinery), International Electro-technical Commission (IEC), other relevant regulations, and combined with CSC employees' expertise. These guidelines, based on risk assessment indicators, take safety principles, conditions and devices into equipment design. They will also be used as procurement specifications for new equipment and discussed with potential suppliers.

## VI. Safety Culture

Safety culture in CSC is divided and handled in three dimensions, i.e. policy, management and personal, as described below:

- (1) **Policy Aspect:** Including safety policy statement, management organization and resource supply.
- (2) **Management Aspect:** Construct CSC's institutional framework with responsibility attribution, safety control, license, training, reward and punishment, audit, response and improvement, safety care program etc.
- (3) **Personal Aspect:** To improve personal safety culture by changing workers' safety concept, providing education and training, enhancing employees' participation, safety and health care, as well as bilateral interactions and communications.



## VII. Safety Observation and Inspection

Safety observation and inspection is an important part of safety culture. On-site managers are required to identify and correct unsafe behaviors or equipment during their routine site tours, thus improving the workplace safety immediately. They are also responsible to review workers' behaviors and working environment according to the five steps: decision, stop, observation, action, and report. If a worker violates safety procedures, or there are unsafe conditions or actions, on-site managers should communicate immediately and correct workers' error with the prerequisite not to affect their ongoing safe operation.

## VIII. Project Structure and Plan

CSC promotes the activities of "Safe Job Procedures (SJPs) by Jobsite Operators". This activity, combined with the hazard prediction in zero hazard training, will allow employees and contractors discuss and communicate as a team for more practical SJPs, instead of writing SJPs by specialist in the old times. This process will also promote workers' ability in hazard identification and prevention.

## IX. Partnership with Contractors

Contractor's performance and safety is an important part of business performance, whereas contractor disaster prevention is among the highest priority issues due to the nature of their work. CSC not only improves the safety of facilities, but also demands better partnerships between workforces to enhance proper interactions and working conditions. In addition, contractor's professional skills are improved through technical trainings, e.g.:

- (1) **Improve Working Conditions:** High employee turnover and aging is a common problem for contractors. CSC proposed to improve contractor's employee turnover and work conditions by increasing contract budget and safety management fees. These measures will help CSC establish a better long-term partnership with its contractors.
- (2) **Strengthen Training:** Including:
  1. **General Training:** All contractor employees, including new and re-employed, are required to receive suitable safety trainings to make them fully understand the safety and health regulations at worksite. Every three years, contractor employees should receive three hours of re-training courses. CSC will also organize additional safety and health trainings depending on the needs, whereas contractors should assign their workers to participate.
  2. **Special Operation Training:** The contractor employees engaged in special operations are required to receive professional trainings and obtain relevant licenses. They are also requested to pass the skill tests and obtain licenses in order to operate dangerous machinery or equipment.



Examination of Scaffolding



Aerial Work Platform



## X. Disaster-Avoidance Plan

CSC implements the specifications of TOSHMS by setting goals in health and safety management first, then carry out plans via a PDCA (plan, do, check, and action) loop to achieve these goals and create a no-disaster workplace. The implementing steps are shown in the following figure:

### 2010 SAFETY GOALS:

- (1) Zero Hazard
- (2) Employee Frequency Rate (FR)  $\leq 0.32$
- (3) Employee Traffic Accidents  $\leq 8$
- (4) Contractor Frequency Rate (FR)  $\leq 0.62$



## XI. Safety Care

CSC encourages all employees and contractors to communicate and help each other with a self-motivated, goodwill and equality mindset so that the safety awareness and ability of all workers can be enhanced. It is believed these measures will lead to a full-safety habits and upgrade the overall safety culture.

## XII. Resources and Experience Sharing

CSC uses a variety of ways to carry out safety sharing, such as:

- (1) **Physical Simulation Program:** Traditional training uses lectures prepared by instructor. Participants only can imagine the situations which were described in the course, causing vague impressions and ineffectiveness. CSC has developed safety workshops based on the experiences of precedent foreign companies with actual tools and “Physical Simulation Programs” to provide workers with on-site feelings. This training is divided into three parts, e-learning courses, hands on experience with dangerous working conditions and protective measures, as well as a simulated training classroom for elevated operations. This workshop will make participants go through designed accidents and get a deep impression in a short-time so that it will help effectively at workplaces.



- (2) **Accident and Near-miss Incident:** CSC provides a software system for employees and contractors to share all incidents. Supervisors can also use this platform to publicize the concept of safety. For accidents or near -misses, the Health and Safety Department will announce the information in the internal electronic bulletin.
- (3) **Sharing Audit Experience:** The computer system at CSC can provide the tracking and corrective results of the audits. Statistical analysis of these inspection result can be used in the meeting.
- (4) **Lecture Notes:** Computers are used to store the information of briefing, training documents, reports and etc., and allow workers to query and search.
- (5) **Bulletins:** Important safety messages are immediately announced both on CSC's information portal and the website of Safety and Hygiene Department.

### 2.3.3 Human Right Management

CSC's Management team strictly complies with national and international standards on labor and human rights, and equally treats and respects all employees based on various codes, e.g.:

- (1) **Safe Working Conditions:** According to Governmental labor-related acts and regulations.
- (2) **Equal Employment Opportunities:** To all job applicants based on Employment Services Act.
- (3) **Fair Appeal:** Employees are entitled to appeal when their human rights are infringed and when their cases are not handled properly or can not reach an agreement.
- (4) **Rewards and Punishments:** Major rewards or punishments are reviewed in Employees Award and Punishment Committee for final decision based on corporate rules.
- (5) **Prevention of Sexual Harassment:** The cases of sexual harassment are handled by Complaint Committee Against Sexual Harassment based on corporate appeal and punishment codes.

### 2.3.4 Human Development and Management

CSC established its human resource development system based on national labor policies and regulations, and set its goal as "a system with humanistic nature." The focuses of CSC's human resource development system are shown as follows:

- (1) **Compensation System:** In order to recruit top-level talents and maintain long-term competitiveness, To support employees' desirable living standards, CSC offers much better compensations than those regulated by the Council of Labor Affairs and preferable working conditions to those offered by general labor market.
- (2) **Motivation System:** CSC offers a good reward and incentive system to all employees. The motivation system, based on performance evaluation and knowledge sharing, is to lead employees strive for better performance.
- (3) **Employee Education and Training:** Employees are the most valuable resource of our company. CSC strongly emphasizes on employee training and education. We provide a series of training programs covering subjects like environmental safety and hygiene, technical and managerial skills and etc. CSC also offers short and long-term training programs in domestic and overseas organizations to employees with good potential.
- (4) **Contractor Training:** Contractors are an integral part of workforce and a crucial part to worksite safety and their training is carefully handled by CSC. The goal is to improve their professional skills and safe working habits to ensure their safety and upgrade their job performance.
- (5) **Human Resources Development (HRD) Committee:** The Human Resources Development Committee set a comprehensive human resources development system. It is in accordance with the needs of corporate's current operations and future needs. The Committee is also responsible for the planning in human resources allocation, employee development, and assessing the results of training programs.



### 2.3.5 Labor Union

The fully-equipped Labor Union of CSC provides member-employees with a good platform to communicate and pursue a decent working condition, human rights and future development.

Also, the Labor Union of CSC strongly assists in attaining balanced development of corporate operation and expanding the width and depth of social participation.

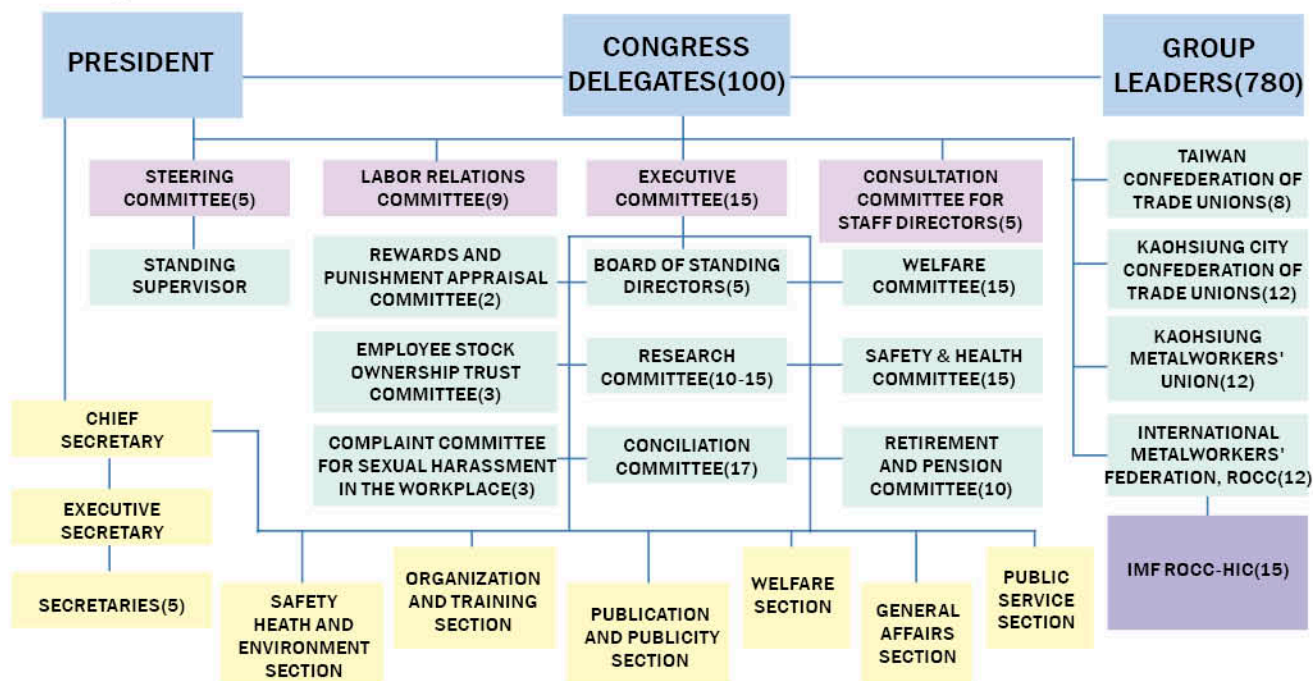


#### I. Members and Aim

CSC's Labor Union was established on Dec 30, 1980. Its members include all employees except the General managers of departments, VPs of divisions and higher rank officers. The aim of this Labor Union is to develop industrial democracy, accelerate industrial cooperation, defend members' rights, improve members' lives, enhance members' knowledge and assist government in implementing its labor-related policies.

#### II. Organization and Functions

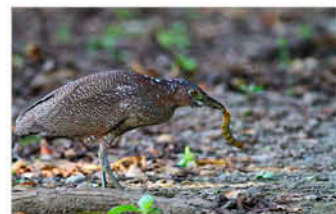
The Congress is the supreme authority of the Labor Union. The 100 delegates are generated by each electoral division. The up-to-dated member-employees are 9,300. The 15 seats on Board of Directors are generated from and by the 100 delegates. The Board of Directors would be the supreme authority during Congressional adjournment. Besides, the 5 seats in Steering Board are also generated from and by the 100 delegates. The main function of Steering Board is to supervise the Board of Directors. The President of Labor Union is directly-elected by all members. The President leads the Secretariat with 6 different functional groups to deal with daily affairs. The organization chart as shown below:



### 2.3.6 Social Activities

Over the years, CSC has participated in social activities through various channels and platforms, including functional departments, CSC Group Education foundation, Labor Union and internal social associations. Its regular activities are outlined as follows:

| ACTIVITIES   | RESPONSIBILITY  | MAIN ISSUES  |
|--|---|--|
| SUGGESTIONS TO GOVERNMENT IN ENERGY AND ENVIRONMENTAL POLICIES AND ACTS. | OFFICE OF ENERGY AND ENVIRONMENT AFFAIRS                      | <ol style="list-style-type: none"> <li>1. Aimed for rational of national and local regulations relating to GHG, energy tax, air emission, soil and waste.</li> <li>2. Provide ideas and suggestions in low carbon economy, carbon credit system and future industrial development in Southern Taiwan.</li> <li>3. Negotiate reasonable energy saving goal or environmental load to maintain fair competition.</li> </ol>                         |
| HUMAN RIGHT AND DEVELOPMENT.   | DEPARTMENT OF HUMAN RESOURCES                                 | <ol style="list-style-type: none"> <li>1. Negotiate reasonable policies for workforces.</li> <li>2. Share knowledge and information.</li> </ol>  |
| SAFETY AND HYGIENE   | DEPARTMENT OF INDUSTRIAL SAFETY AND HYGIENE                   | <ol style="list-style-type: none"> <li>1. Prevention of work-related incidents and illness.</li> <li>2. Sharing information and experiences globally and domestically.</li> </ol>  |
| PUBLIC AFFAIRS   | DEPARTMENT OF PUBLIC AFFAIRS<br>-INTERNAL SOCIAL ASSOCIATIONS | <ol style="list-style-type: none"> <li>1. Good neighboring, community care and emergency aid</li> <li>2. Good interactions with governmental representatives, law makers, media and opinion leaders</li> </ol>   |
| SOCIAL EDUCATION AND CULTURE   | EDUCATION FOUNDATION OF CSC GROUP                             | <ol style="list-style-type: none"> <li>1. Promote educational activity in steel production and application of steel technology</li> <li>2. Sponsor activities in science, technology, social studies, arts and other literature</li> </ol>   |
| LABOR POLICIES   | LABOR UNION OF CSC  | <ol style="list-style-type: none"> <li>1. Labor rights and welfare state policies</li> <li>2. Exchange and cooperate with similar organizations</li> </ol>   |
| SOCIAL CARE & ARTS ACTIVITIES  | CSC, LABOR UNION OF CSC & INTERNAL ASSOCIATION OF CSC         | <ol style="list-style-type: none"> <li>1. Reconstruction after disaster</li> <li>2. Take care of vulnerable group (philanthropy club)</li> <li>3. Take care of ecological environment (bird watching club)</li> <li>4. Join Dragon Boat Races on the Dragon Boat Festival at Kaohsiung annually</li> <li>5. The performance of Choir and Traditional Chinese music club</li> <li>6. The exhibition of Fine arts and photography clubs</li> </ol> |



### 2.3.7 Foundation

CSC has set up the CSC Group Education Foundation in 2007 in order to engage in relevant social activities in a broader, deeper and more diversified way. The foundation has nine directors among whom are outside directors. CSC's chairman concurrently serves as the foundation's chairman. In addition, CSC's vice president of Administration Division serves as the foundation's general secretary. To function effectively in various activities, most of the needed general and professional affairs are supported by CSC's related departments.



# 3



## PERFORMANCE INDICATORS

- CORPORATE GOVERNANCE
- ENERGY & ENVIRONMENTAL
- ENGAGEMENT IN SOCIAL HARMONY

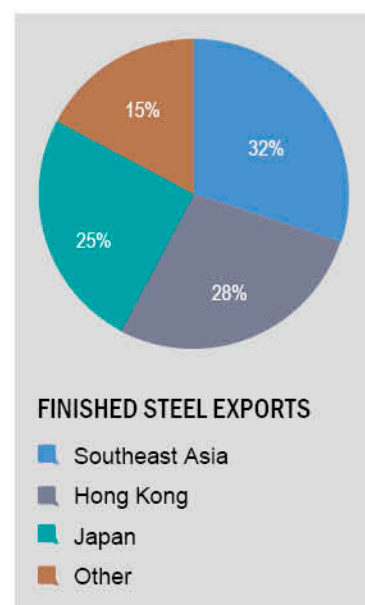
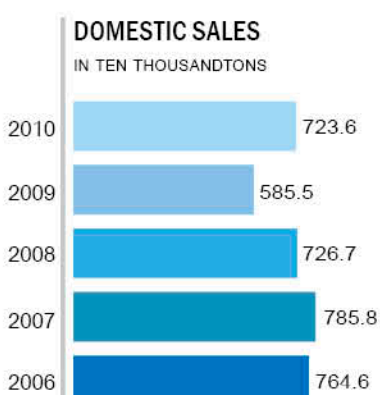
### 3.1 CORPORATE GOVERNANCE

In the corporate reputation survey conducted by Taiwan commonwealth Magazine, CSC ranked No. 10 among all Taiwan enterprises, and No. 1 in metal industries for 16 years in a row. CSC's score in financial and long term investment were far better than Taiwanese peers. Moreover, due to the proper responses taken after world financial crisis, World Steel Dynamics ranked CSC number 10 among all major steel companies.

#### 3.1.1 Sales Volume and Revenues

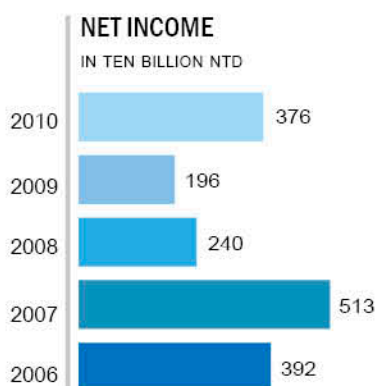
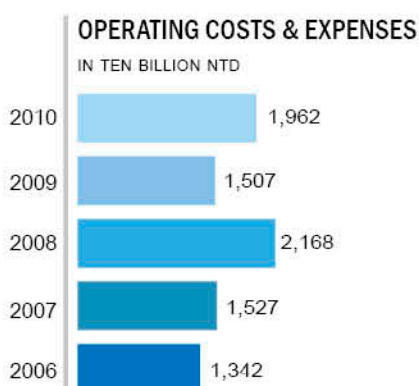
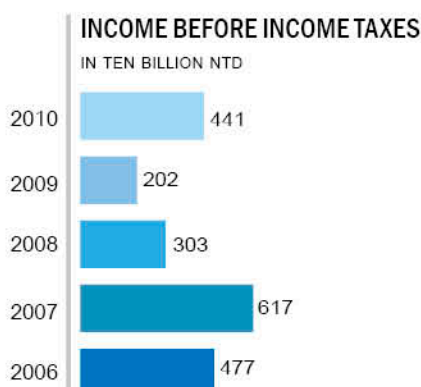
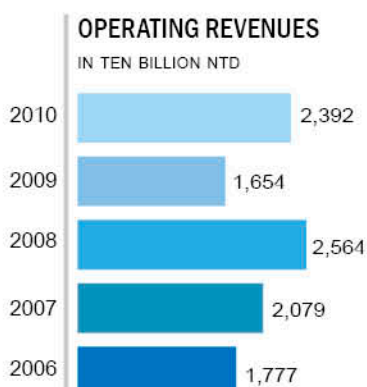
##### (1) Domestic and Foreign Sales

In 2010, CSC's total sales volume amounted to 9,905 thousand tons, in which domestic sales totaled 7,236 thousand tons and foreign sales totaled 2,669 thousand tons.



## (2) Operating Revenue

In 2010, CSC's operating revenue, operating costs and expenses were 239.2 and 203.2 billion NTD, increased by 44.60% and 29.46% respectively. Due to world economic recovery and soaring prices and volumes, CSC's income before income taxes surged to 44.1 billion NTD, 118.72% higher than 2009 figure. as shown below:



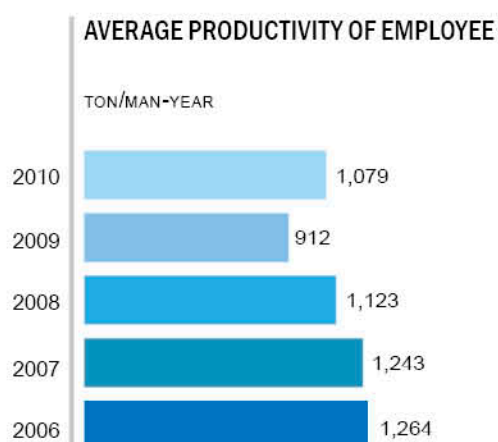
### 3.1.2 Productivity and Performance Indicators

#### (1) Productivity

CSC's crude steel production per employee was 1,079 metric ton and working hour consumed per ton of crude steel production was 1.93 in 2010, partially recovered from 2009, as shown in the following figure:

#### (2) Financial Performance

CSC's debt to asset ratios of 2009 and 2010 were 29% and 30% respectively, while the ratio of long term capital to fixed asset reached 182% and 183%. As to the capability of profitability, the return on asset were 6% and 11%, return on equity were 8% and 15%, while profit margin were 12% and 16% respectively.





### 3.1.3 EarningDistribution

#### (1) Value of Financial Performance

CSC views shareholders interests very seriously. Most of the distributable net income was appropriated to shareholders after retaining 10% of legal reserve. The dividend payout and returns of investments for the past 5 years are shown below:

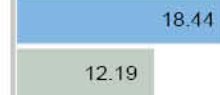
| Year | Post Tax EPS | Cash Dividend per Common Share | Stock Dividend per Common Share | Total Dividend Payout (%) |
|------|--------------|--------------------------------|---------------------------------|---------------------------|
| 2010 | 2.83         | 1.99                           | 0.50                            | 88.0 %                    |
| 2009 | 1.54         | 1.01                           | 0.33                            | 87.0 %                    |
| 2008 | 2.03         | 1.30                           | 0.43                            | 85.2 %                    |
| 2007 | 4.49         | 3.50                           | 0.30                            | 84.6 %                    |
| 2006 | 3.56         | 2.78                           | 0.30                            | 86.5 %                    |

| Year | Price to EPS | Price to Dividend | Cash Dividend Yield |
|------|--------------|-------------------|---------------------|
| 2010 | 11.27        | 16.03             | 0.0624              |
| 2009 | 17.97        | 27.40             | 0.0365              |
| 2008 | 19.57        | 30.55             | 0.0327              |
| 2007 | 9.05         | 11.60             | 0.0861              |
| 2006 | 8.34         | 10.68             | 0.0937              |

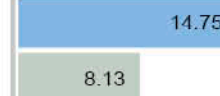
**Remark**

Price to EPS=average closing share price/earnings per share  
 Price to dividend= average closing share price/cash dividend per share  
 Cash dividend yield= cash dividend per share / average closing share price

#### PRE TAX MARGIN(%)



#### ROE



2010  
2009

Based on CSC's Articles of Incorporation, the annual net earning after taxes paid, deficits offset and legal reserve appropriated is distributed according to the following order:

1. Preferred stock dividends at 14% of the par value.
2. Remunerations to directors and supervisors of the board at 0.15 % of the distributable earnings, 8% as bonuses to CSC employees.
3. Common stock dividends at 14% of the par value.
4. The rest of the remaining earnings will be appropriated proportionally to the preferred stockholders and common stockholders as bonuses.
5. If it is necessary, a special reserve will be allotted according to the resolution of the board.

Remunerations to directors, supervisors, president and vice presidents are paid under the regulation of Articles of Incorporation. Travel fare subsidy is determined according to the payment level of the same industry. Remunerations to directors, supervisors and senior management have no linkage to external risks but have relation to the performance of corporate governance (net income). The table below illustrates the ratio of remunerations to directors, supervisors and senior management over net income.

| TITLE       | REMUNERATIONS<br>(unit/in thousand<br>NT dollars) | REMUNERATIONS<br>/ NET INCOME (%) | RELATED REMUNERATIONS OF<br>DIRECTORS/ SUPERVISORS<br>AS BEING THE POSITIONS<br>OF EMPLOYEES<br>(salary included, unit/<br>in thousand NT dollars) | TOTAL<br>REMUNERATIONS/<br>NET INCOME |
|-------------|---|-----------------------------------|--|---------------------------------------|
| DIRECTORS   | 41,453  | 0.11%                             | 63,458   | 0.279%                                |
| SUPERVISORS | 14,249  | 0.038%                            | —  | 0.038%                                |

| TITLE                | RELATED REMUNERATIONS<br>AS BEING EMPLOYEES<br>(unit/in thousand NT dollars) | TOTAL REMUNERATIONS/<br>NET INCOME |
|----------------------|--|------------------------------------|
| SENIOR<br>MANAGEMENT | 97,910   | 0.260%                             |

### 3.1.4 Internal Audit

In 2010, the Internal Auditor Office presented 54 audit reports with 474 suggestions for improvement. The auditee departments and subsidiary companies should develop and execute remedies in response to these suggestions, which were registered in the Company's audit management system for continuous monitor.

There were 33 complaint handling and temporary assigned cases in 2010. All were carefully verified and reported. After Chairman's approval, they were properly handled by the relevant departments.

### 3.1.5 Performance of Investments

As the world economy recovered after the financial crisis, CSC's subsidiary companies also grew steadily. As a result, CSC's investment income reached NT\$8,248 million in 2010. The highlights are as follows:

- (1) **Steel Business Operation:** The No. 1 blast furnace of DSC (Dragon Steel Corporation) was blown-in on February 26, 2010, just at the time when steel prices were going up, and Dragon Steel Corporation profited well in 2010. Chung Hung Steel Corporation and CSC Steel Sdn. Bhd. (Malaysia) performed well in the first half of 2010 but their profits slightly declined in the second half as the steel market weakened. In 2010, both company's profit grew substantially compared to 2009.
- (2) **Logistics and Trading Business:** CSEC (China Steel Express Corporation) sold five Cape size bulk carriers in 2009, resulting in lower income and less profit. As the supplies of international vessels increased and the freight dropped, CSEC's pre-tax profit decreased in 2010 compared to 2009, but pre-tax earning per share still reached NT\$8.45. CSGT (China Steel Global Trading Corporation) grew steadily in 2010 due to the profits from its four overseas operational bases. Its coil center in Vietnam began to show profit resulting from the strong demand of steel in automobile industry in developing countries. In total, CSGT posted a pre-tax profit of NT\$577 million in 2010.
- (3) **Industrial Material Business:** Because the price of aluminum ingot was up and demand was high, the profit of CSAC (China Steel Aluminum Corporation) greatly increased in 2010. Its pre-tax profit reached historic record of NT\$1,155 million. In 2010 CSCC (China Steel Chemical Corporation) also increased its revenue and profit significantly due to the added coal tar supply from DSC. Its pre-tax profit was NT\$2,241












million and pre-tax earning per share was NT\$9.46, both set the historic records. For CHCRC (CHC Resources Corporation), its price of pulverized blast-furnace slag dropped and sales revenue greatly influenced in 2010 due to the keen competition and slump in building and construction market. However, CHCRC's expansion in resource recycling business raised its profit; resulting in a pre-tax profit of NT\$712 million in 2010. HIMAG Magnetic Corporation completed its equipment modification when the electronic industry market thrived. Its sales of ferrite powder and iron oxide powder grew substantially with a pre-tax profit of NT\$67.21 million in 2010.

- (4) **Engineering Business:** CSMC (China Steel Machinery Corporation) and CEC (China Ecotek Corporation) both enjoyed uninterrupted inflow of orders which raised their revenues in 2010. They posted pre-tax profits of NT\$547 million and NT\$595 million respectively, both set the historic records. CSSC (China Steel Structure Co., Ltd.) had no difficulty in securing orders in 2010, but the competition in structural steel market was fierce and gross profit was low. Fortunately, its income from steel trading and investments helped to raise its profit. Pre-tax profit reached NT\$421 million for 2010, also a historic record.
- (5) **Finance and Service Sector:** GIC (Gains Investment Corporation) recorded a loss of NT\$157 million in the first half of 2010, but the soared prices in the stock market in the second half turned its loss into gains. Pre-tax profit reached NT\$521 million for the year. In 2010, CSSC (China Steel Security Corporation) increased its customers of security service systems to over 6,000. With this increased scale, CSSC increased its pre-tax profit to NT\$94.96 million. ICSC's (Info-Champ Systems Corporation) business was steady in 2010. Its Automatic Control Systems Division grew steadily as the company upgraded itself in technology and experience. Pre-tax profit for 2010 was NT\$167 million.
- (6) **Steel Business Expansion:** DSC is constructing its No. 2 blast furnace (CSC Group's No. 6 blast furnace), which is expected to start blow-in at the end of 2012, and expand the upstream capacity for CSC Group. To raise the percentage of self-supplied raw materials, the Resource Development Department was created under the Corporate Planning Division to search investment opportunities in raw materials. In order to build stronger sales channels and become closer to the market, CSC is evaluating the possibility of investing in India market.

### 3.1.6 Contribution to Industries and Economy

#### (1) Supply Chain Management

CSC brings high quality service to clients and fits their needs by using an effective supply chain management system. This system is highlighted as follows:

| ACTIVITIES   | RESULTS   |
|--|---|
|  BUILDING UP CSC ELECTRONIC SUPPLY CHAIN MANAGEMENT SYSTEM  | Response Time Reduced From 2 Days To 6 Secs   |
|  INTEGRATION OF PRODUCTION AND MARKETING PLAN FOR CSC AND DSC   | Better coordination in opening and order taking mechanism.  |
|  PRICE IS DECIDED FOR THE FIRST TWO MONTHS OF NEXT QUARTER, AND WILL BE ADJUSTED FOR THE THIRD MONTH. | Quicker response to market changes.   |
|  PRICES ARE DECIDED AT THE SAME TIME FOR BOTH DOMESTIC AND FOREIGN SALES                            |   |
|  ELECTRONIC ORDER MANAGEMENT SYSTEM, QUOTATION SYSTEM, AND CONTRACTING SYSTEM                       | Online real-time processing system provides customers with a more efficient trading solution.   |
|  INTEGRATION OF ELECTRONIC ORDER MANAGEMENT SYSTEM FOR CSC AND DRAGON STEEL                         | When customers order products online, system immediately provides them with delivery period and price information, and automatically arrange production according to a self-created electronic order. |
|  CONTACT WINDOW FOR TRACKING SERVICE  | Provide customers with great tracking service, helpful for reorder decision and inventory level control.  |

CSC's sales volume was about 16.2% of domestic steel total in 2010, and was about 1.6% of Taiwan's GDP. In Taiwan the steel industry was ranked third among all manufacturing industries, creating a 1,417.8 billion NTD sales in 2010, next to the power/electronic equipment industry and the chemical industry.



## (2) Upgrade Steel-Using Industries

The total expenditure for the first stage of upgrading research in Taiwan steel-using industry amounted to NT\$7.7 hundred millions. 10 steel products, 21 high value end products and 36 common core technologies were developed in this stage. More than NT\$30 billions of value was created by the products and technologies developed, 4 new research alliances were organized and 6 major technology development projects were conducted for the second stage of upgrading. The status of the alliances and the benefits expected from these activities are shown in the following table (in NT\$):

| INDUSTRY                   | NAME OF THE R&D ALLIANCE   | MEMBER COMPANIES/<br>ACADEMY & RESEARCH<br>ORGANIZATION                           | RESEARCH<br>EXPENDITURES<br>(100million) | EXPECTED<br>BENEFITS<br>(100 million/year) |
|----------------------------|--|---|--|--|
| BOLTS AND NUTS             | ESTABLISHMENT OF THE CORE TECHNOLOGIES FOR HIGH VALUE-ADDED FASTENERS                        | Chun Zu, Fong Preat, Jinn Her, Chong Cheng, HOFO/MIRDC                            | 0.70                                     | 5  |
| MOTORS                     | DEVELOPMENT OF HIGH VALUE-ADDED TECHNOLOGIES FOR THE MOTOR INDUSTRY                          | Chun Yuan, Chilo, Len Mung, RECHI, HANBELL, Nuvoton, Cheng Day, TECO/ NCKU, MIRDC | 2.01                                     | 40   |
| AUTO STRUCTURE PARTS       | DEVELOPMENT OF AHSS APPLICATION TECHNIQUES FOR COMPLEX GEOMETRY AUTO PARTS                   | CMC Motor, Kian Shen, Wu Shiang, Wei & Cut, Jui Li/NTU, MIRDC                     | 0.64                                     | 8  |
| AUTO PANEL AND INNER PARTS | DEVELOPMENT OF KEY TECHNOLOGIES FOR HIGH STRENGTH AUTO PARTS FOR AFTER- MARKET AUTO INDUSTRY | William, Gordon, Tong Yang, Jui Li, Jyh Shyang, GOBO/NTU, MIRDC                   | 1.00                                     | 50   |
|                            | TOTAL AMOUNT   | 23 Companies/2 Academies & 1 Research Organization                                | 4.35                                     | 113  |



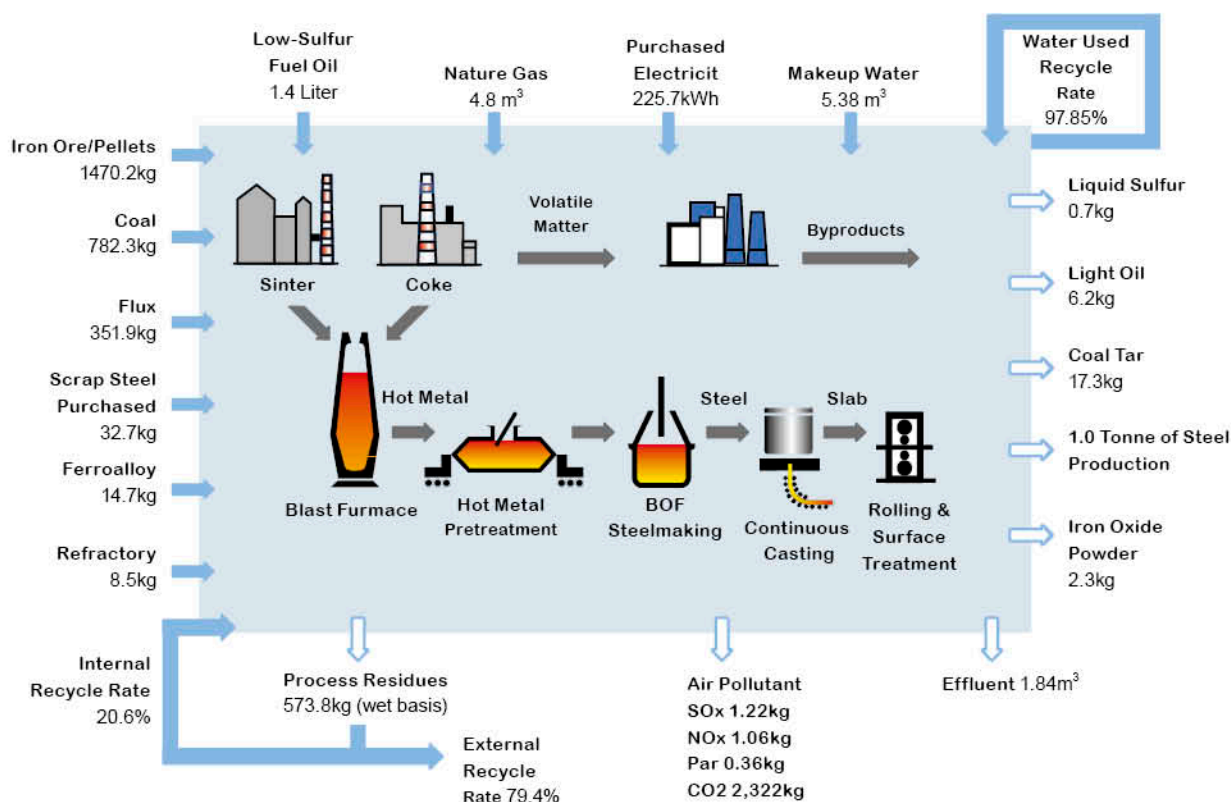
### 3.1.7 Input Energies and Resources

#### (1) Raw Materials and Energies

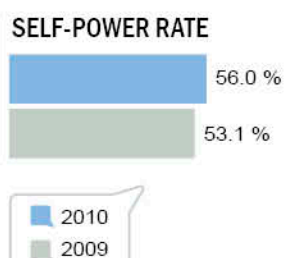
In 2010, the energies and resources needed to produce one ton of crude steel is shown below:

The total output of crude steel was 9,582,450 tons and finished products was 9,720,686 tons respectively in 2010. The input raw materials include 7,496,284 tons of coal, 14,088,052 tons of iron ores and pellets; 3,372,173 tons of flux, 313,397 tons of purchased scrap steel, 140,949 tons of ferro-alloy, 81,654 tons of refractories, and about 1.18 million tons of recycled materials. The total amount of materials consumed 25,432,389 tons.

The by-product fuel gases from coke ovens gas(COG), blast furnaces gas(BFG) and steelmaking converters gas(LDG) are used in production processes. The remainder is burnt to cogenerate steam and electricity together with steam coal, oil and natural gas. The shortage of electricity will be made up by purchased electricity from Tai-Power. In 2010, the consumption of primary and secondary fuels at CSC are shown as follows:



■ per ton of crude steel  
□ % of total production cost

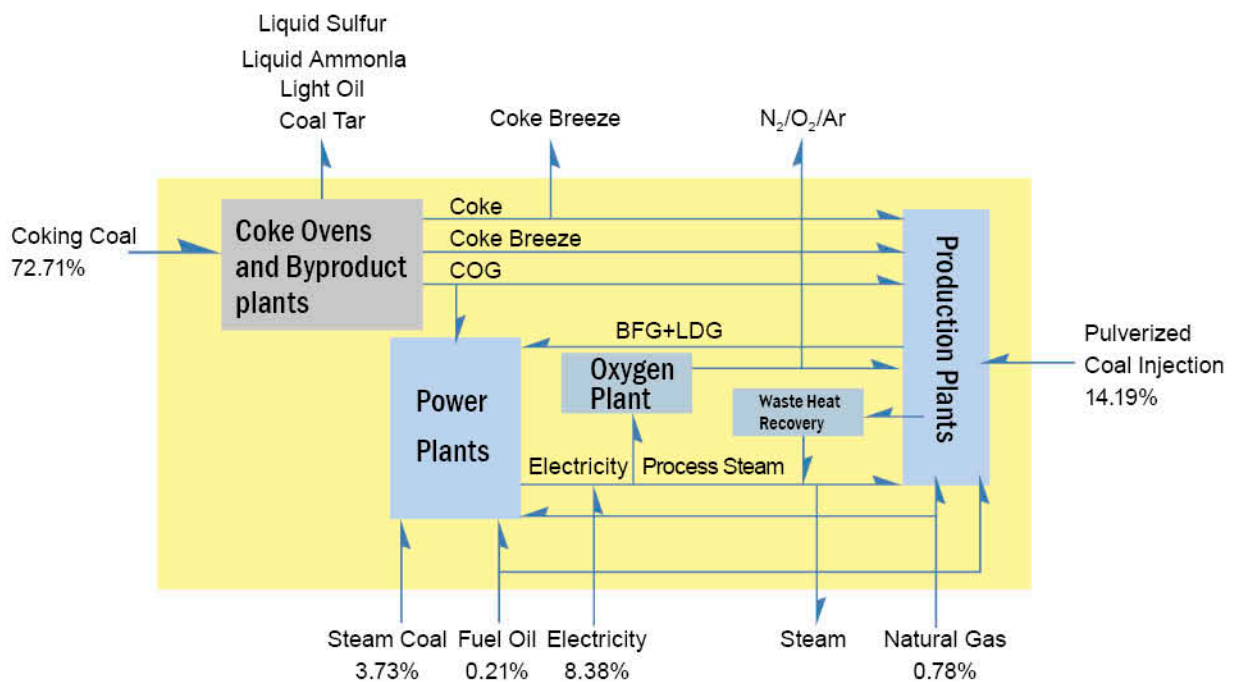


■ 2010  
■ 2009



| PrimaryEnergy   |                       |                             | SecondaryEnergy          |                       |                         |                        |
|-----------------|-----------------------|-----------------------------|--------------------------|-----------------------|-------------------------|------------------------|
| Coal            | Purchased Electricity | Nature Gas                  | Steam of Medium Pressure | COG                   | BFG                     | LDG                    |
| 7,496,284 ton   | 2.163 billion kw-hr   | 45.6 million m <sup>3</sup> | 4.56 million ton         | 214 million kilostere | 1,387 million kilostere | 86.8 million kilostere |
| Diesel Oil      | Gasoline              | Low Sulfur Oil              | Cold Blast Air           | Oxygen                | Nitrogen                | Argon                  |
| 3,618 Kiloliter | 165 Kiloliter         | 12,964 Kiloliter            | 91.4 kilostere           | 98 million kilostere  | 112 million kilostere   | 3.03 million kilostere |

The energy cost of CSC decreased slightly due to the recovery of production and the associated higher energy efficiency in 2010. The decreased contract price and increased usage of steaming coal resulted in a higher self-power rate of 56.0%, 2.9% higher than 2009, as shown below:



## (2) Personnel Rewards and Expenses

CSC views human resource as its most critical asset. Besides offering desirable fixed compensation, CSC also provides incentives and bonuses based on corporate performance, which serves as a reward to the excellent performers and an attraction to recruit and retaining the talents.

In order to establish proper compensation policies that consider both market value and employee rights, CSC regularly participated in external compensation surveys held by management consulting companies other than collecting compensation information from notable benchmark companies. This compensation criteria for new employees are not differentiated according to age or gender.

### (3) Expenditures

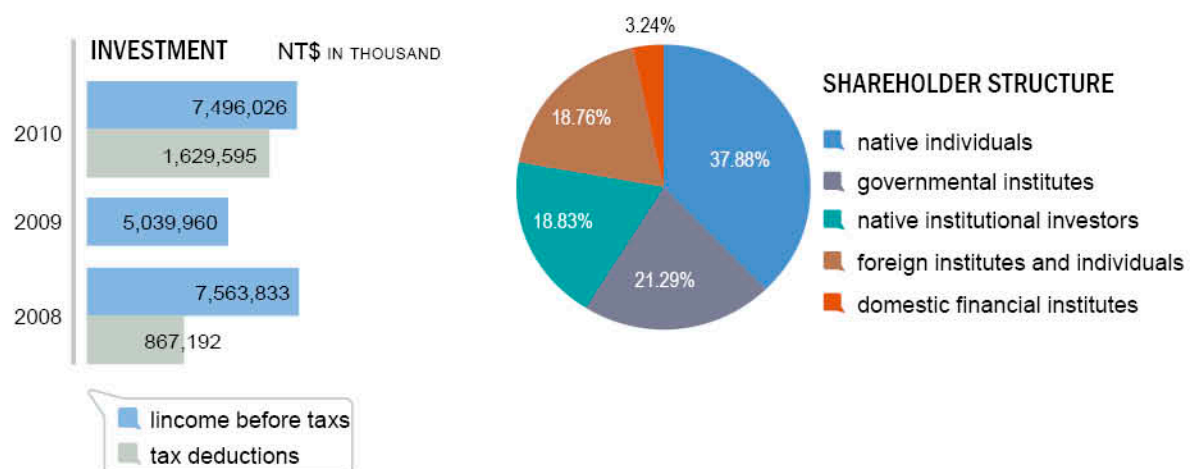
The main R&D activities in 2010 were largely focused on energy saving, CO<sub>2</sub> emission reduction, process improvements, upgrading of steel products, renewable energy and enhancement of the by-products value etc. The total expenditure for these research topics was around 13.8 hundred millions. The key activities for these researches are listed in the following table:

| Research Field                                    | Key R&D Activities  |   |
|---|---|---|
| Energy Conservation and CO <sub>2</sub> Reduction | -Energy conservation service outside CSC  | -Increase hot slab charge ratio<br>-Increase solar energy power capacity<br>-Improve performance of local area energy combination and utilization |
| Process Improvement                               | -Optimize oxygen production system<br>-Improve rolling schedule planning system for hot-rolled bands and plates                     | -Improve combined steelmaking system for plates, bars and rods  |
| Development of New Steel Products                 | -Develop 35CS210 electrical steel<br>-Develop metallurgical process technology for DP980Y dual-phase steel                          | -Develop SK95 high carbon hypo-eutectoid steel  |
| Renewable Energy                                  | -Use bio-coal to replace the coal used for steam boiler<br>-Develop other bio-fuel  |   |
| Value-added By-products                           | -Increase recycling ratio of BOF slag fine grains in sinter plant<br>-Reuse spent refractory aggregates as refractory raw materials |   |

#### 3.1.8 Sources of Capital and Subsidies

According to the audited financial statements for the year ended December 31, 2010, CSC's equity ratio was 69.55%, debt ratio(debt/equity) was 43.78%, current ratio is 140.61%, and net value per share was NTD19.60. As to the shareholders structure, governmental institutes accounted for 21.29%, native individuals accounted for 37.88%, native institutional investors accounted for 18.83%, foreign institutional and individual investors accounted for 18.76% , while domestic financial institutions took the remaining 3.24%.

According to Taiwan's "Enforcement Rules of the Statute for Upgrading Industries" the R&D expenditure of enterprises is deductible from their income taxes. This is applicable to CSC's spending on R & D related machinery and human development. The CSC's shareholder structure and tax deductions for the past 3 years are shown in the following figures:

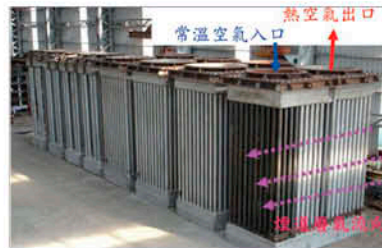
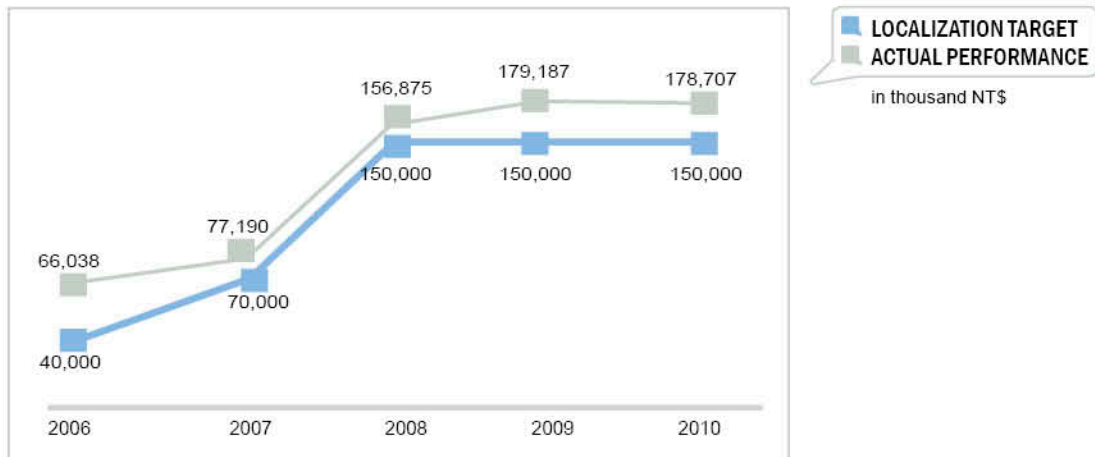




### 3.1.9 Support Domestic Manufacturers

CSC's investments in high added-value product lines, environmental protection and energy conservation and facility revamping are common practices. The company's policy is to use local portion as much as possible with the aim to foster the growth of domestic manufacturing industry and to lower CSC's facility and maintenance cost. Major items include:

- (1) **Refractories:** At its initial production CSC imported nearly all the needed refractories from foreign countries. To reduce cost and to increase the localization ratio, CSC created a "refractory localization development task force" which cooperated closely with the local refractory industry. After 30 years of efforts, the refractory localization ratio reached 61.92% in amount and 79.19% in weight in 2010. The major items still relying on imports are advanced lining material for Blast Furnace, MGO-C bricks for Basic Oxygen Converter, sliding gates and casting nozzles for continuous casting. Currently only about 8% of refractory is chromium(III) magnesium type, which is used in RH refining furnace.
- (2) **Spare parts and equipment:** In order to lessen the dependency on international suppliers, secure on-time delivery and service, upgrade the proficiency of related domestic industries, and to lower cost, CSC has committed to support domestical manufacturers on supplying spare parts, mechanical and electrical equipment and systems. The projects completed in 2010 can be classified into 9 categories: mechanical spare parts, heat exchangers, gear reducers, pneumatic/oil cylinders, pumps, impellers, rollers, wear-resistant parts, and electrical electronic parts. The graphs shown below illustrate the results in the past 5 years in terms of monetary values and localization targets.



Heavy vehicles and heat exchangers supplied by local manufacturers.

### 3.1.10 Operations

The headquarters of CSC is located at Kaohsiung Linhai Industrial Park, Xiaogang Dist., Taiwan. To quickly respond to customers' needs, CSC set up Taipei and Osaka offices. Furthermore, CSC built up a flux stone transfer center at Hualien Harbor to utilize the natural resources of Eastern Taiwan. Other than these, CSC has no other operation outside Kaohsiung.

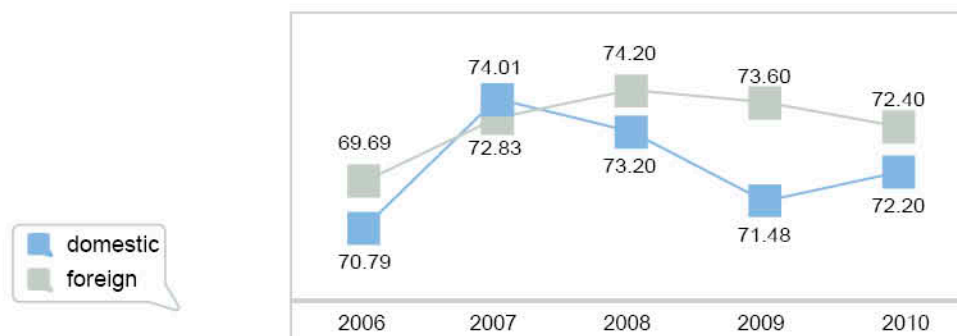
### 3.1.11 Climate Change and Opportunities

The worldwide extreme weather such as abnormally heavy rains and draught, is becoming more distinctive, resulting in severe impact to human life and business operations. Hence, taking proper measures to save energy, reduce GHG emission and adaptate to climate change, thus reduce management risks and improve competitive edge, has become a critical issue to enterprises. The key actions taken at CSC include:

- (1)**New Division and Committee:** The Office of Energy and Environmental Affairs is an independent division responsible for corporate planning and promotion of energy and environmental affairs. The Energy and Environmental Committee of CSC Group is chaired by CSC's Chairman to integrate and promote the energy and environmental activities more quickly and effectively.
- (2)**Reduce Risk of Water Shortage:** Rain water is quite precious in Southern Taiwan. Current collection is through fresh water reservoir and rooftop collection system. In 2010, ~320,000 m<sup>3</sup> of rain water was collected.
- (3)**Minimize Raw Material Losses and Associated Pollution:** CSC is planning to set up closed bins for anthracite coal and windbreaks for raw material stock piles for this purpose. In addition, storm water collection and treatment system has been installed to improve the effluent quality.
- (4)**Prevention of Flood:** This is a critical issue for continued operation in stormy season. CSC's preventive measures have been quite satisfactory. Better preparation is considered necessary for even harder raining scenario.
- (5)**Regulatory Compliance:** CSC constantly pays close attention to the global and domestic developments in climate and regulatory issues, especially the GHG reduction laws and energy/carbon taxes. In addition to render suggestions and comments for government to enact proper acts and regulations, CSC strictly requested itself to follow the related regulations and commitments.
- (6)**Carbon Management:** Carbon credits allocation and trading is an ongoing global trend. It will surely affect the competitiveness of steel business in the carbon-restrictive are. To minimize its impact on business operations with early preparation is crucial.

### 3.1.12 Customer Satisfaction

Customers' satisfaction is a key factor to business operations. Each year CSC entrusts several academic institutions to perform surveys for several topics, and In 2010, the nine specific topics were, which are quantity and account management, price, R&D, product quality & compliant management, customer service, communication, delivery period, transportation, and e-commerce. CSC scored 72.2 points which moved up by 0.72 points, compared to 2009 results. As for foreign customers, CSC scored 72.4 points, down by 1.2 points from 73.6 points for 2009. Each year's result is be sent to responsible departments for providing solutions to cover what customers really care about 2006-2010 results are shown below:

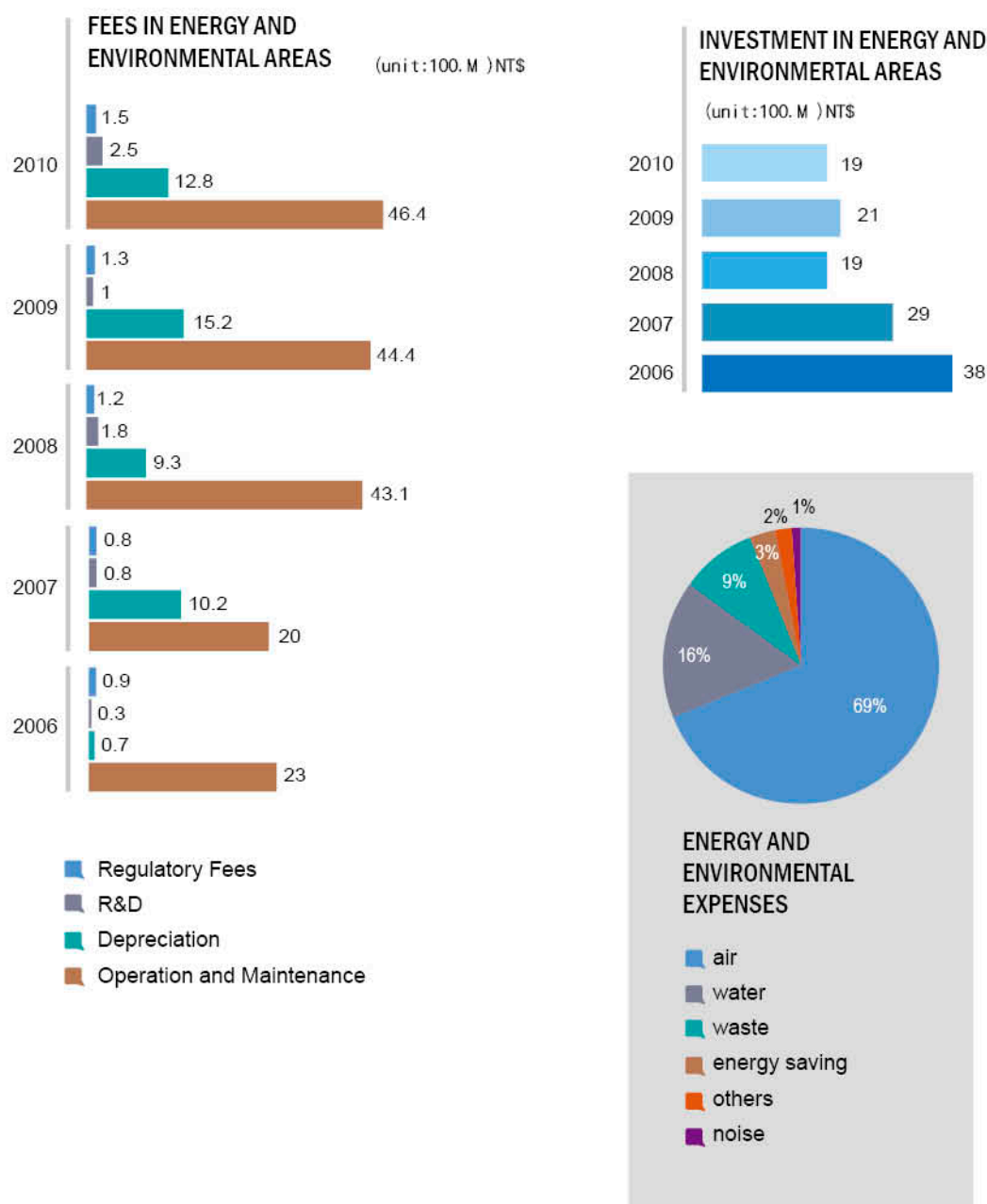




## 3.2 ENERGY & ENVIRONMENTAL MANAGEMENT

### 3.2.1 Energy and Environment Expenses

Till 2010, CSC's accumulated investment in energy and environmental facilities amounted to 447 hundred million NT\$. Among this, 69% is for air pollution control, 16% for water pollution prevention, 9% for waste reduction and recycling, 3% for energy conservation and GHG reduction, 1% for noise prevention, and 2% for others. The investments and expenses in the past five years are shown in the following figures:



Environment Accounting system is a new tool applied internationally to account the investment and expenses in environment related activities. CSC has been studying this new tool for several years, and intends to use this new tool in the near future. The progress in this subject will be reported regularly.



### 3.2.2 Green Products

#### (1) Hazard-Free Products

The domestic and international rules for environmental protection are firmly followed at CSC and therefore all its products are free of hazardous substances. Both the Safety Data Sheet (SDS) and Nontoxic warranty sheets can be issued to CSC's customers. For CSC's products exported to European Union, the directives of RoHS (Restriction of Hazardous Substances) are closely obeyed to keep the contents of cadmium (Cd), lead (Pb), mercury (Hg), hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ether (PBDE) well below the allowed limits of RoHS directives.

#### (2) Eco-friendly and Energy-Saving Steels

It is always a main goal of CSC to develop and produce high value-added products to fulfill the needs of its customers. In recent year, a series of eco-friendly and energy-saving steel products were developed and put into production. They are mainly used in industries such as automobile, machinery & electricity, bridge & building construction and ship building. With the help of these steels, not only the weights of their products can be reduced for higher energy efficiency, but also their service lives can be prolonged, resulting in lower environmental burden.

For the new-rising green industries (such as solar energy and wind power generation, etc.), large amount of green steel products is also needed for lower weight, higher energy efficiency and longer service life. At CSC, the orders of high grade eco-friendly and energy-saving steel products had been increased steadily from 15.88% in 2006 to 37.72% in 2010.

The types of these steels and the benefits from the application of them are listed in the following table.

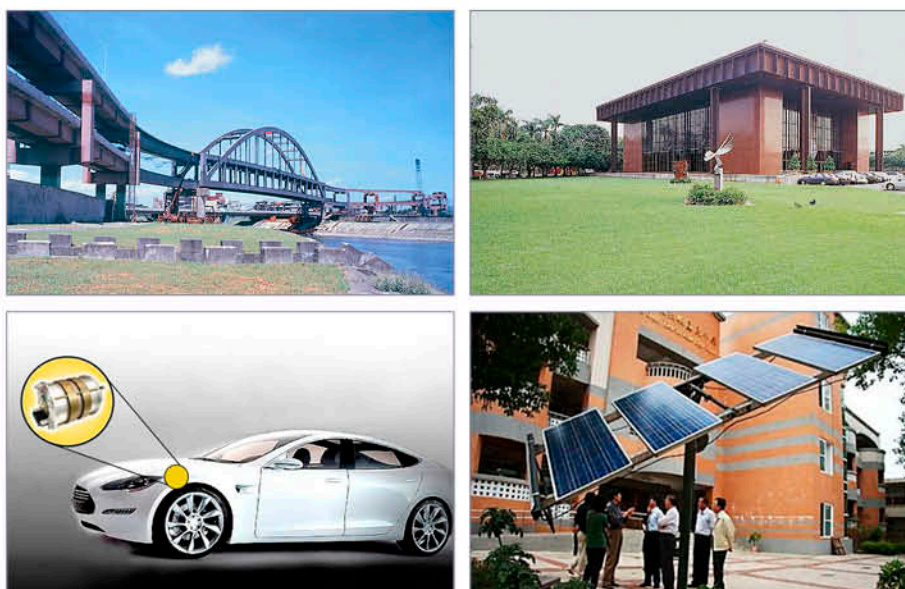
| Automobile  | Machinery Electricity  | Bridge, Building construction and Green Energy  | Ship building  |
|---|--|---|--|
| <b>STEEL PRODUCTS</b> <ul style="list-style-type: none"> <li>High strength hot-rolled and cold-rolled steels</li> <li>High strength bars and rods</li> <li>High anti-corrosion steels</li> </ul> <b>BENEFITS</b> <ul style="list-style-type: none"> <li>Reduce vehicle weight, enhance safety and energy efficiency, reduce carbon footprint</li> <li>Extend service life of automobile, decrease environment burden during its life cycle</li> </ul> | <b>STEEL PRODUCTS</b> <ul style="list-style-type: none"> <li>High grade electrical steels</li> <li>Surface treatment steels</li> <li>High lubricated type steels</li> <li>Lead-free alloying steels</li> <li>Cr-free galvanized steels</li> </ul> <b>BENEFITS</b> <ul style="list-style-type: none"> <li>Enhance efficiency of motor</li> <li>Enhance product forming ability</li> <li>Omit painting</li> <li>Prolonged life of electrical appliances</li> <li>Lower environmental burden</li> <li>Low noise, good magnetic shielding</li> </ul> | <b>STEEL PRODUCTS</b> <ul style="list-style-type: none"> <li>High strength steels for construction and green electricity construction</li> <li>High strength steel wires for the long span bridge</li> <li>High heat-input type plates for welding</li> <li>Fire-resistant (Refractory) steels for construction</li> <li>Clean steel bars and rods for fasteners</li> </ul> <b>BENEFITS</b> <ul style="list-style-type: none"> <li>Enhance the efficiency of construction</li> <li>Simplify the work of Engineering</li> <li>Green architecture</li> <li>Long life span, durable structure</li> </ul> | <b>STEEL PRODUCTS</b> <ul style="list-style-type: none"> <li>High breakage toughness steels</li> </ul> <b>BENEFITS</b> <ul style="list-style-type: none"> <li>Lighten the weight of the ship, fuel saving</li> </ul> |



### (3) Green Supply Chain

CSC is at the upstream of the supply chain of steel using industries. It is an important duty of CSC to increase the supply of green steels and green by-products to help downstream customers expand their green businesses in the industrial supply chain. The main applications of CSC's eco-friendly and energy-saving steel products are as follows:

1. **Anti-fingerprint, Cr-free Galvanized Steel sheets:** Used for electrical appliances, computer case, copy machine and advanced equipments.
2. **Sulphur type free-cutting steels:** Substitute lead-type free-cutting steel, used for the components for axis parts of high class business machine etc.
3. **High strength hot-dipped galvanized dual phase steels:** Strengthen auto body structure, reduce the weight of automobile.
4. **Fire-resistant (Refractory) steels:** Largely used for steel building to save the expenses of refractory material and construction. Less steel and energy consumption are needed due to the thinner steel plates used in the applications.
5. **High strength steels for construction:** 25% of energy consumption can be saved and 40% of CO<sub>2</sub> emission can be reduced by using these steels in high building construction.
6. **High strength steels for ship building:** Reduce the weight of ship while meeting the safety and energy conservation specifications.
7. **High grade electrical steels:** Reduce weight of products, save steel and enhance the efficiency of motor. Widely used in motors for electric vehicles and compressors. According to a formal study, 1% motor efficiency increase in Taiwan will save a billion KWH of power annually and cut 620 thousand tons of GHG emission. CSC is now able to provide high grade electrical steel with iron loss of merely 2.1W/kg.
8. **Granulated Blast Furnace Slag (GBFS):** After drying and milling, GBFS is widely used in concrete industry to replace cement. It can avoid the consumption of 1200 kg raw material, 96 kg coal and 40KW/h electricity for cement production and result in significant reduction of air pollution. Besides, it can also extend the life span of buildings when the GBFS is blended in the concrete. According to a formal assessment, around 722 kg carbon dioxide emission can be reduced by using 1 ton of GBFS. Consequently, near 1.8 million tons of GHG emission can be cut for 2.5 million tons of GBFS, produced in CSC per annum.



various steel applications

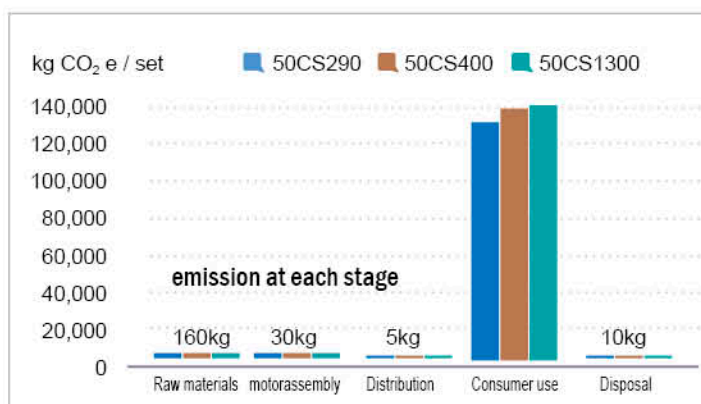
#### (4) Carbon Footprint and External GHG Reduction

Carbon footprints of consumer products is a new issue concerned by governmental and public sectors in recent years. The trend of low carbon consumption will be a strong driving force for low carbon production. CSC is vigorously analyzing the carbon footprints of steel products and providing the information to its stakeholders. Moreover, CSC is paying close attention to life cycle assessment (LCA) to understand the external GHG reduction of advanced steels in various stages. Major advanced steels with external GHG reduction benefit include high-grade electrical steel for motor, advanced high strength steel for vehicle, corrosion prevention steel for long life cycle buildings, and processes-shortening steel for down-stream manufacturer. Some results of footprint studies are show in the following:

1. **Electrical Steel:** In 2010, CSC Tatung Co., ITRI and MIRDC cooperated in a life cycle GHG analysis for motors. LCA for three kinds of 3HP motors were conducted respectively, with electrical steel (ES) 50CS290, 50CS400 and 50CS1300, and the external GHG reductions were quantified as shown in the following figure. This study was verified by a third-party based on PAS 2050. The verification statement was issued by DNV on 30 Nov 2010. The production of 50CS290, 50CS400 and 50CS1300 electrical steel accounts for 3.0% of CSC's total production and 3.6% of CSC's total sales.



3HP NEMA Premium motor of Tatung Co.



2. **Product Carbon Footprint:** CSC has provided the carbon footprint of hot rolled coil and hot rolled band to Yieh-Phui Enterprise Co. upon their request. The production of hot rolled coil and hot rolled band account for 39.5% of CSC's total production and 33.0% of CSC's total sales.





### 3.2.3 Green Processes

#### (1) Commit to Environmental Impact Reduction

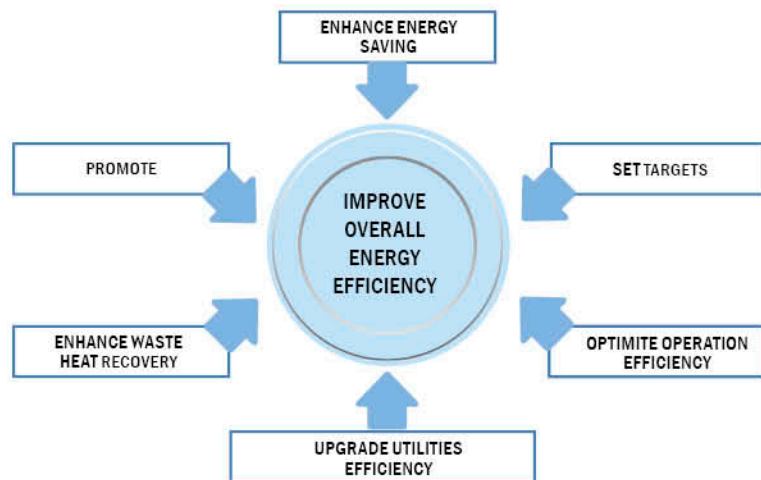
The environmental impacts of new investment projects in steel industry is a very sensitive issue. It has become a norm to include commitments to environmental impact reduction in EIA (Environmental Impact Assessment) process. A rigorous system is formed in CSC to combine the efforts of investing department, R&D, Utilities Department and Environmental Department for evaluating the associated environmental impact and render the necessary reduction measures. This system will ensure to attain the commitments made in EIA and to improve the overall environmental performance continually.

#### (2) Energy Saving and Carbon Reduction

Except being limited by the insufficient space, CSC is committed to adopting the world class BATs (Best Available Techniques) and BACTs (Best Available Control Technologies) to improve its energy efficiency and reduce GHG emission. The major schemes adopted are shown in the following figure:



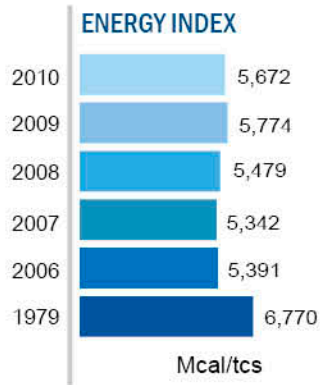
President Ma inspected the achievements of energy-saving at CSC



In 2010, CSC completed 58 energy saving projects and saved 279 Tcal energy or 31,000 kiloliter Oil equivalent with 78,000 tons CO<sub>2</sub> reduction. The major items include coke rate reduction by 2 kg/THM for #4 blast furnace, heat exchanger revamping of heating furnace in billet plant, chiller revamping in phase-3 coal chemical plant, cooling tower revamping in No. 3 coal chemical plant and reducing the amount of descaling water in hot roll mills.

For indirect energy saving, the major measures include:

- 1. Low Energy Lighting:** Upgrade the control and circuit of lighting and switch to high efficiency lighting system. 1,060 Mwh electricity was saved and 650 tons of CO<sub>2</sub> reduced every year.
- 2. Green Transportation:** With the support of the Ministry of Transportation and Communication, CSC switched its limestone transportation from highway to railway. This measure not only improved highway transportation and energy efficiency but also reduced the associated dust and CO<sub>2</sub> emissions.
- 3. Use of Returning Trucks:** CSC fully utilized the returning trucks for steel products to transport its purchased materials from Dragon Steel and reduced 14,400 tons of CO<sub>2</sub> in 2010.



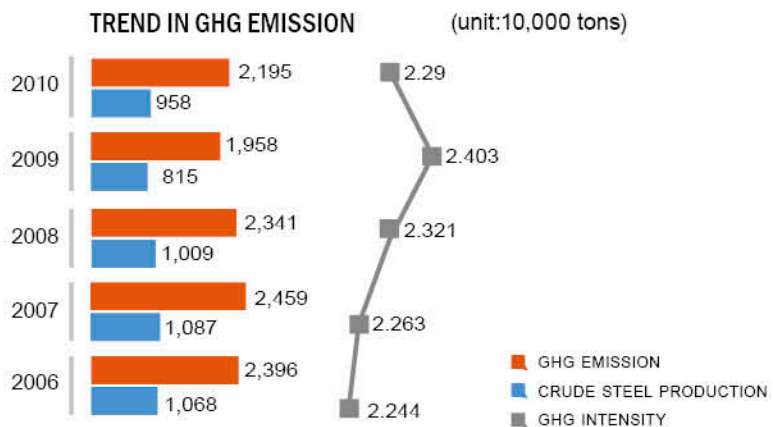
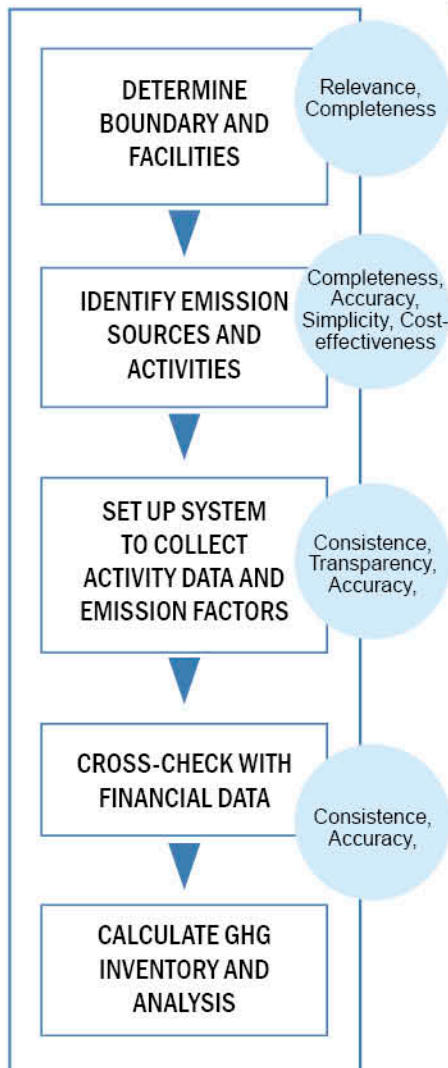
### (3) Specific Energy Consumption

Although with very limited land area, CSC managed to adopt many BATs for energy saving and carbon reduction ever since its establishment, and has achieved near top rated performances among the global steel mills. In 2010 the energy consumption per ton of crude steel was 5,672 Mcal/TCS with 102 Mcal/TCS less than 2009. This was due to the increase of production and the measures taken in energy saving. The trend of Specific Energy Consumption in last 5 years are shown in the left figure (compared with 1979, the very beginning of CSC's operation).

### (4) GHG Inventory and Reduction

**1.GHG Inventory:** Based on the guidelines published by IPCC (Intergovernmental Panel on Climate Change), worldsteel and WBCSD, CSC developed a sound GHG inventory system. Its accuracy, reliability and verifiability are assured by cross-checking its activity data with that in financial accounting. Based on this, CSC also devised a management document based on ISO standard. The flow diagram and the associated principles are shown below:

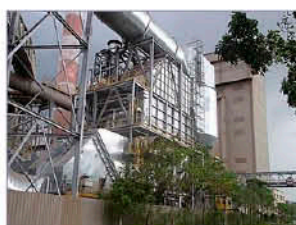
**2.GHG Emission Trend:** CSC conducts GHG inventory and internal verification every year, followed by registry in a governmental website. The first external verification was done for 2006 by SGS, while the 2007~2009 data were verified by DNV. For 2010 the internally verified GHG emission was 21.945 million ton and the intensity was 2.29 ton/tcs. The trend of the past 5 years is shown in the following:







Phase IV CDQ



Waste Heat  
Recovery at phase  
IV Sinter cooler



Waste Heat  
recovery at BF

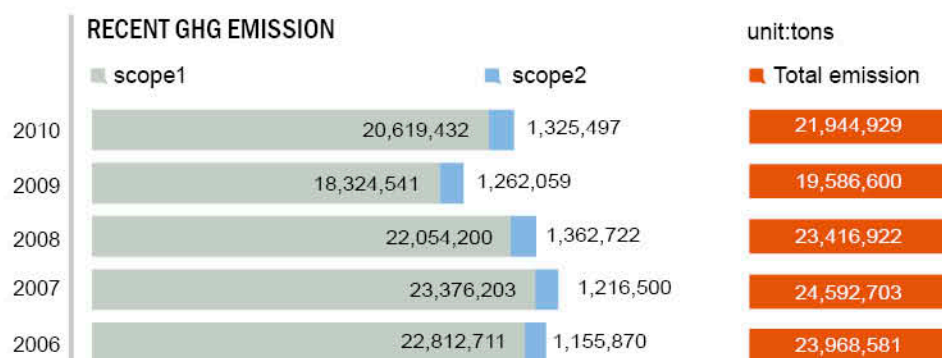


TRT with BF Top Pressure

The slowly increasing trend of CSC's GHG intensity is due to the following:

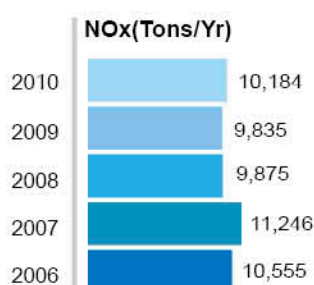
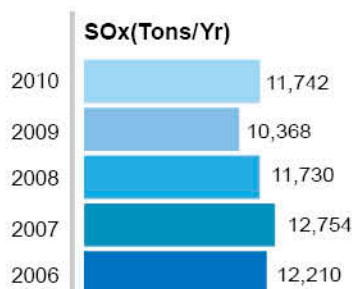
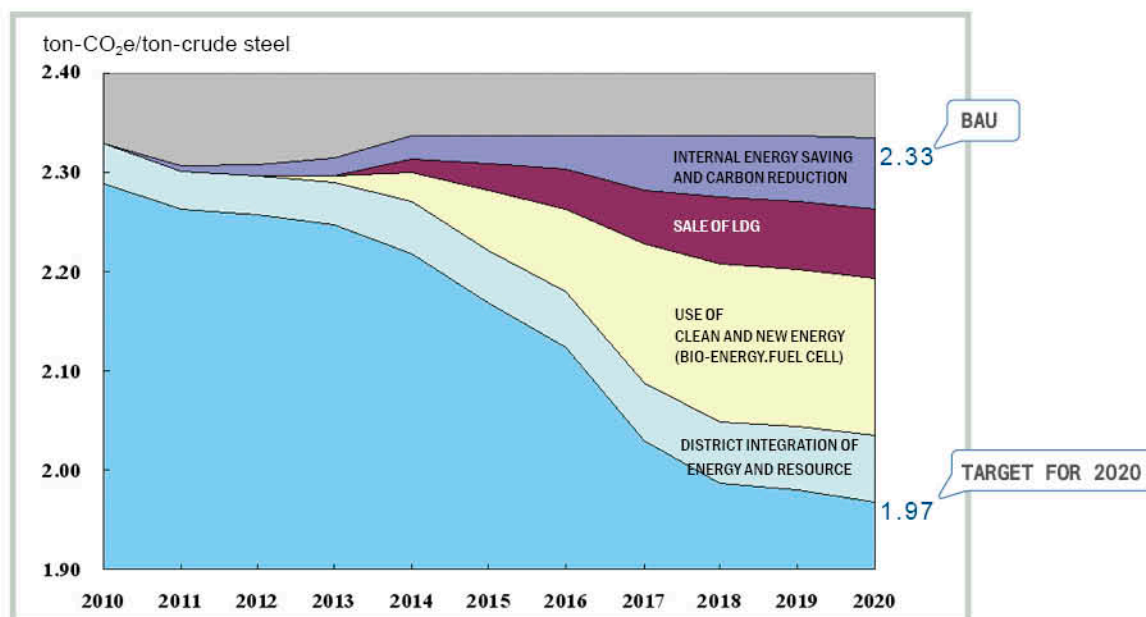
- a.Increased Down-Stream Operations:** Recent investments are more focused on increasing value-added products which does affect crude steel production while increase energy consumption.
- b.More Environmental Installations:** Filters, scrubbers, EPs, water purification systems and recycling furnace (RHF) of process residues etc. all increased energy consumption.
- c.Lower Steel Production:** The crude steel production of 2008~2010 were lower than before the world financial crisis.
- d.Steam Selling Credits not Deducted:** Most heat recovery projects of CSC produce steams that are sold to nearby chemical companies. However, the associated GHG credits can not be accounted for in current GHG inventory.

The scope I emission of CSC was around 94~95% of total, whereas the remaining scope II emission was largely from purchased electricity. The increased scope II emission, from 4.8% (2006) to 6.0% (2010) shown in the following figure, is consistent with the gradually increased down-stream operations, environmental installations and steam sales.



**3.GHG Reduction Target and Roadmap:** GHG intensity is an important indicator for GHG management and performance. CSC advocates the sectoral approach that all steel companies take the international benchmark as their common target. To catch up with the intensity benchmark, CSC set a intensity target and a working plan based on the potential measures, as shown as Business-As-Usual and the 3 other reduction routes, as shown in the following figure. In case these measures could not provide CSC with the expected GHG reduction, CSC will purchase carbon credits from domestic or overseas sources to meet its regulatory duty.

GHG EMISSION ROADMAP OF CSC UP TO 2020



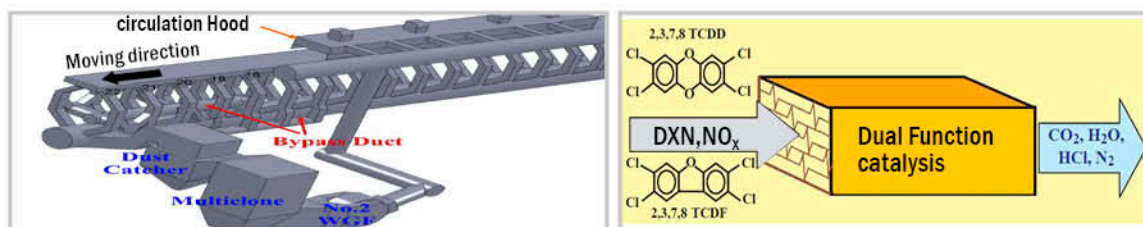
## (5) Air Emission Control

**1. Monitor and Analysis:** CSC established an Environmental Surveillance Center in 1995. The main functions of this center include: continuous monitor of main stack emissions, air quality monitor at 5 boundary stations and exhibition at 2 boards, as well as the regular samplings and checkups of other stack emissions. Up to 2010, there are overall 294 stacks in CSC, among which 27 are equipped with CEMSs (Continuous Emission Monitoring Systems) for uninterrupted monitor of SOx, NOx and opacity. Among the 27 CEMSs, 25 are directly connected to Kaohsiung EPB for strict surveillance.

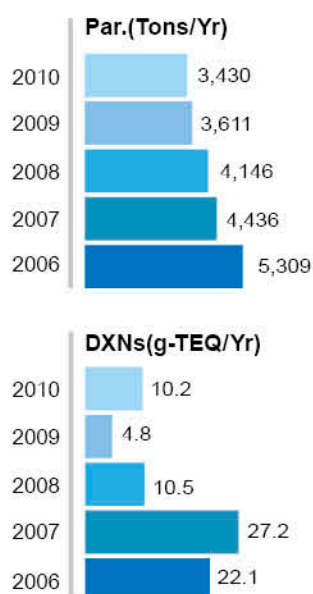
**2. Emission Reduction:** The SOx and NOx emissions are significantly lower, mainly due to lower steel production after the financial crisis. In 2010, although the steel production recovered slightly, the SOx and NOx emissions were still lower than 2006~2007. The reduction of particulate and dioxin emissions were more stable and clear, as shown in the left figures:



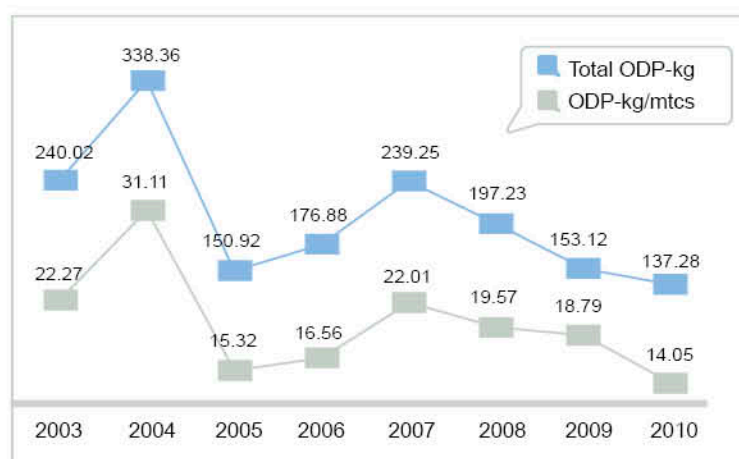
**3.Emission Intensities:** In 2010, the emission intensity per ton of crude steel was 0.36 kg for particulate, 1.22 kg for SOx and 1.06 kg for NOx. The figures for particulate and NOx are among the top levels, whereas for SOx there is still a apparent room for improvement.



**4.Reduction Measures:** In addition to the reduction due to lower steel production, other measures taken at CSC include:

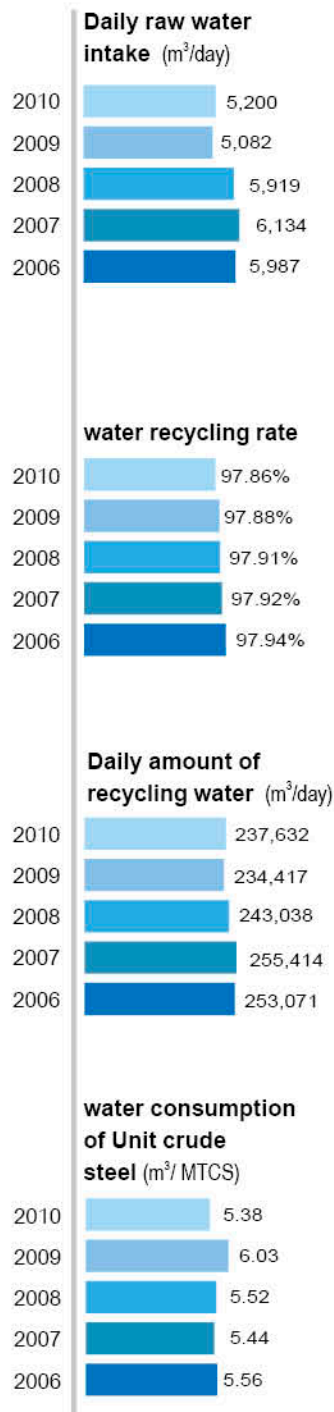


- For NOx, SOx and Particulate: Use more anthracite coal with low nitrogen and sulfur, installed de-S equipment at No. 4 COG and flue gas recirculation system at No. 3 sinter plant, enhance de-S capacity at coal-fired power houses, increase dust collection systems for stacks, and enclosing fugitive emissions.
- For Dioxin: The industrial incinerator of CSC was equipped of active carbon injection system in 2005 to assure the compliance with regulation, <0.1ng-TEQ/Nm<sup>3</sup>. The dioxin emissions at sinter plants were controlled below the 2008 standard <1 ng-TEQ/Nm<sup>3</sup> with dual function catalyst in SCR (Selective Catalytic Reactor) and upgraded EP (Electrostatic Precipitator). To meet the more stringent 2010 local standard (<0.5 ng-TEQ/Nm<sup>3</sup> for 4 sinter plants average), CSC installed a RHF (Rotary Hearth Furnace) to treat the dusts and sludges from the sinter plants.
- For Abnormal Emissions: Abnormal emissions and odors are also sensitive issues for a factory. CSC has been tackling these problems since several years ago. Besides adding suitable reduction installations, CSC also focused on management efforts to reduce human error, resulting in significant improvement and lower panalties.
- For Ozon-Depleting Substances: Released mainly from air condition systems. Key measures include: integrate air condition systems and enhance maintenance, develop high efficiency, low depletion potential cooling medium, as well as reuse of cooling medium etc. The decreased trend in the consumption of ozon-depleting substances is shown in the following figure:



## (6) Water Saving and Pollution Control

**1. Measures and Performances:** As an integrated steel plant, CSC requires large amount of water for cooling, rust removing, lubricating, dust cleaning and other environmental protection measures. The major source of CSC's raw water is from Fengshan Reservoir. In 2010 CSC's average daily raw water intake is about 142 Km<sup>3</sup>. As a result of constant water saving management, the recycling rate has now reached 97.86%. Although the 2010 crude steel production increased by 17% compared to 2009, the overall water consumption only increased by 2.2% and the raw water consumption per ton of crude steel is down from 6.03 m<sup>3</sup> in 2009 to 5.38 m<sup>3</sup> in 2010. The related data of the past 5 years are as follows:



### 2. Water Saving Practices:

**a. Fresh Water Softening:** Lack of water resource in southern Taiwan is a threat to industries, while the high hardness of fresh water resulted in pipeline scaling in the cooling equipment, deterioration of heat exchange efficiency and shorten equipment life and so on. Two sets of raw water softening process with the total capacity of 8,000 m<sup>3</sup>/hour were set-up with the addition of lime milk into raw water, allowing calcium ions of the water to form calcium carbonate precipitate which can be removed. After softening, the concentration ratio of cooling water system and the efficiency of pure-water-making systems can be improved and the estimated water saving was 7,500 m<sup>3</sup>/day.

**b. Rooftop Rainwater Collection:** Rainwater collection facilities were set up on plant's roof with a total collection area of 160,000 m<sup>2</sup>. The rainwater collection in 2010 amounted to 320,000 m<sup>3</sup> with a daily average of about 900 m<sup>3</sup>.

**c. Industrial Wastewater Purification:** Industrial wastewater was passed through UF (ultra-filtration) and RO (reverse osmosis) to remove its impurities (such as suspended solids and ions). The capacity of RO system is 13,500 m<sup>3</sup>/day. Part of RO permeate water was further purified by ion exchange resin system, producing 9,000 m<sup>3</sup>/day of demineralized water (DMW) and 4,500 m<sup>3</sup>/day of RO permeate water. The quality of DMW can meet high-pressure boiler standard and was used in CSC's power plants. This plant has started operation since September 2009. An idea to expand RO permeation by 5,000 m<sup>3</sup>/day is being studied. This project not only reduces CSC's industrial effluent, lower CSC's raw water demand, but also is helpful to CSC's image. The flow diagram of this process is shown below:

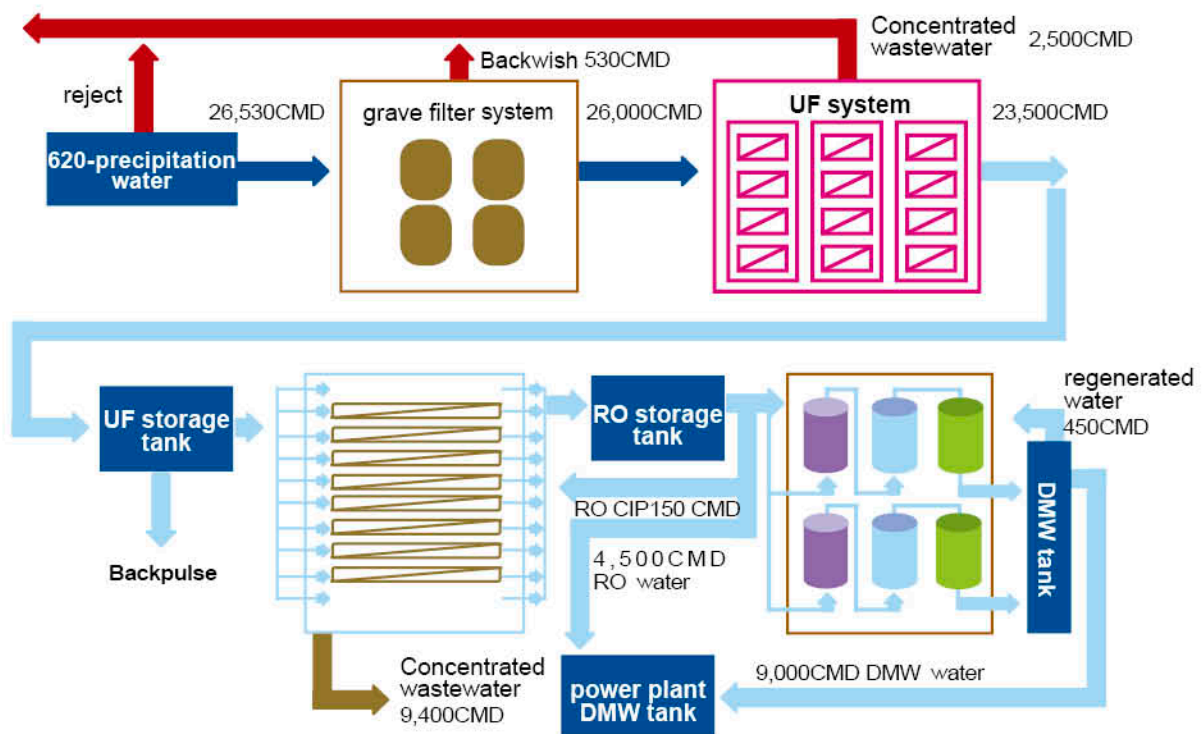
Fresh Water Softening



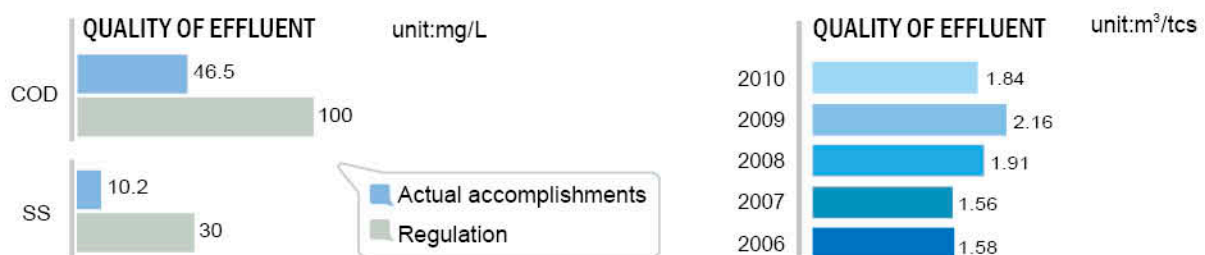
rooftop rainwater collection







**3. Water Pollution Control:** CSC has set-up a wastewater treatment plant with the design capacity of 79,600 m<sup>3</sup>/day. In 2010 the wastewater effluent amounted to 17.64 million m<sup>3</sup>. Its average chemical oxygen demand (COD) was 46.5mg/L while the suspended solids (SS) was 10.2mg/L. Its contents of heavy metals were negligible and much better than the effluent standards and the receiving water body( 60 m discharge channel). In addition, a storm run-off collecting system with capacity of 40,000 m<sup>3</sup> for raw materials yard and a treatment plant with capacity 36,000 m<sup>3</sup>/day has been set-up to meet the effluent standards.



## (7) Process Residues

1. **Output:** CSC generated 5,738,000 tons (wet basis) process residues in 2010, including BF slag, BOF slag, de-S slag, dust, sludge, mill scale, spent refractory, civil residues, limestone cake, etc as shown in the following:

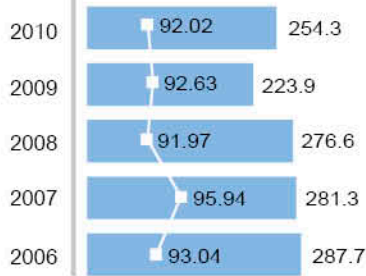
|                         | DESCRIPTION   | GENERATION<br>(1,000 tons) | % OF<br>TOTAL |
|-------------------------|---|----------------------------|---------------|
| <b>BF slag</b>          | Byproducts of the BF after smelting of raw materials  | 276.4                      | 48.2          |
| <b>BOF slag</b>         | Byproducts of the basic oxygen furnace (BOF) after refining of steel  | 122.8                      | 21.4          |
| <b>De-S slag</b>        | Byproducts of the hot metal de-sulfurizing process  | 31.3                       | 5.5           |
| <b>Dust</b>             | Particulates collected from de-dusting systems (including fly ash)  | 30.3                       | 5.3           |
| <b>Sludge</b>           | Solid cakes or mud from wastewater treatment after thickening and de-hydration  | 34.5                       | 6.0           |
| <b>Mill scale</b>       | Rust from steel products or semi-products   | 29.5                       | 5.1           |
| <b>Spent refractory</b> | Used refractories from high temperature processes   | 6.7                        | 1.2           |
| <b>Civil residues</b>   | Residual soil, waste concrete, etc  | 23.0                       | 4.0           |
| <b>Limestone cake</b>   | Filter cake from the limestone washing process  | 4.7                        | 0.8           |
| <b>Others</b>           | Including scrap iron, rubber, waste oil, waste packaging materials, zinc dross, zing sludge, refuse, mixed metal scrap, electric cable, etc | 14.6                       | 2.5           |
| <b>Total</b>            |   | 573.8                      | 100           |



**2. Recycling:** After working closely with academic institutes and other industries for a number of years, CSC gained excellent performance in internal and external recyclings of its process residues. Since July 2001, CSC has reached a milestone of “zero solidification and landfill”. The recycling is 20.6% (1,182,000 tons) internally and 79.4% (4,556,000 tons) externally in 2010, and the quantity of internal recycling is 4.64% of CSC's raw material use. The details are shown in the following table:

|                         | % INTERNAL<br>RECYCLING | % EXTERNAL<br>RECYCLING | APPLICATION  | % SOLIDIFY<br>OR LANDFILL |
|-------------------------|-------------------------|-------------------------|--|---------------------------|
| <b>BF slag</b>          | 2.3                     | 97.7                    | Water-quenched slag for powder production, air-cooled used as aggregates.  | 0.0                       |
| <b>BOF slag</b>         | 7.9                     | 92.1                    | After entrapped metal recovery, part of the slag was used as the raw material (in sinter plant) and slag pot base material, land amendment, temporary roads, backfill materials for South Star project.  | 0.0                       |
| <b>De-S slag</b>        | 0                       | 100                     | Sold to recycling companies for metal recovery. (their residues were used in land amendment, temporary roads, soil improvement and low strength concrete).   | 0.0                       |
| <b>Dust</b>             | 96.7                    | 3.3                     | The majority was recycled for iron making. Coal fly ash was mixed with sludge as cement making material, zinc oxide powder generated from Rotary Hearth Furnace (RHF) was sold to a zinc refinery in Japan.  | 0.0                       |
| <b>Sludge</b>           | 77.3                    | 22.7                    | High Zn sludge generated from Electrolytic Galvanizing Line (EGL) was directly sold to a Zinc Refinery in Japan. A large part was recycled internally for iron making. The remainder was mixed with coal fly ash prior being sold to cement plant. | 0.0                       |
| <b>Mill Scale</b>       | 100                     | 0                       | Internal recycle for iron making   | 0.0                       |
| <b>Spent Refractory</b> | 74.8                    | 25.2                    | After recovering entrapped metals, part of the spent refractory was recycled as steel making flux and protective base layer for slag pot, the others are recycled for refractory making  | 0.0                       |
| <b>Civil Residues</b>   | 0                       | 100                     | Reused at the South Star project as backfill material  | 0.0                       |
| <b>Limestone Cake</b>   | 0                       | 100                     | Admixture of a civil material  | 0.0                       |
| <b>Others</b>           | 75.2                    | 24.8                    | Mostly recycled within CSC, the remainders are either reverse recycled or sold and recycled by certified companies   | 0.0                       |
| <b>Total</b>            | 20.6                    | 79.4                    |  | 0.0                       |

WATER-QUENCHING RATE  
AND TOTAL PRODUCTION  
OF GRANULATED SLAG



■ Granulated Slag(million tons)  
□ Granulated rate(%)



**3. Granulated BF Slag Replacing Cement:** Granulated BF Slag is the largest energy saving and GHG reduction byproduct of an integrated steel mill. After drying and grinding, granulated BF slag powder can replace cement and therefore conserve the natural resources and energy required for cement production. Moreover, it can reduce GHG emissions and extend the lifetime of buildings. The requirement of granulated slag powder in Taiwan is increased continually since CSC group started producing BF slag powder 20 years ago. The quickly expanded BF slag powder demand resulted in an import of more than 2,000,000 tons of BF granulated slag in recent years. The water-quenched ratio of BF slag has reached 95% in normal conditions, but decreased to 92% in recent years due to the shrinking steel market and unstable blast furnaces productions. The trend of water-quenched ratio in last 5 years is charted below:

**4. Recycle Packaging Materials:** The packaging materials generated from equipment supplier include straps, pallets, and bulk bags. Straps are regarded as scrapped metal and are recycled internally. Pallets are sold as low end materials; while the usable bulk bags were reused with the non-usable ones being sent to the incinerator of CSC. The fly ash and bottom ash of CSC's incinerator are recycled internally at sinter plants. The only packaging materials of CSC's steel products are packaging straps and anti-rust papers. The straps will be recycled or sold as scraps. The anti-rust papers was either reused or recycled as waste paper.

**5. Adding Value to Sludge and Dust:** In 2008, CSC started operating the Rotary Hearth Furnace (RHF) process (No.1 photo on the left). It's goals include to increase the internal recycle of dust and sludge, reduce dioxin emission at sinter plant, and improve the value of sludge and dust by converting them into higher value-added Direct Reduction Iron (DRI) and ZnO powder. The former was recycled at BF while the later, with Zn >50%, was sold to a refinery plant in Japan (No.2 photo on the left).

**6. Reuse of BOF Slag:** BOF slag is the most difficult and exhausting one to reuse at CSC. The current situation is as follows:

**a.Main Applications:** Besides a small percentage of BOF slag was recycled internally, part of BOF slag was used as aggregate of asphalt concrete and material for land amendment, the main application was backfill material in South Star project for land reclamation.

**b.Independent Control and Internal Audit:** CHC Resources Corporation(CHC)is responsible for the processing and the promotion of recycling of CSC's BOF slag. In addition to following ISO-9001 standard, CHCRC has set up a self-control and continuous improvement mechanism based on a PDCA scheme to assure the BOF slag quality to be recycling as construction materials. CSC audited this system randomly to help upgrade the proper functions of this system.





c. **Difficulties in Recycling:** Taiwan's Soil Pollution Control Standard has not quite followed the international trend to treat low toxicity  $\text{Cr}^{3+}$  separately from high toxicity  $\text{Cr}^{6+}$ . This has caused a big problem for BOF slag recycling as a backfill material due to its moderate level of  $\text{Cr}^{3+}$  and regarded as a pollutant material to soil (electric arc furnace slag faces a similar but more stringent situation). Another problem of BOF slag is its high contents of free-CaO and free-MgO, resulting in adverse expansion in road constructions and the like.

d. **Ecological Influences:** The free-CaO and free-MgO of BOF slag will dissolve in water and increase its pH value up to 12.4 which will inhibit the growth of plants. Therefore BOF slag can be used in applications that wish to inhibit weeds, e.g. parking areas or informal road pavement. To plant trees or grass, normal soil should be mixed with or covered on top of BOF slag. At the initial contact with water, BOF slag might be detrimental due to its high pH. But when the free-CaO and free-MgO gradually dissolved, the weak-basic property of BOF slag improves the acidification problem of water. Moreover, minerals in BOF slag, such as iron and sulfur, are helpful to the reproduction of beneficial algae and biological species, thereby making BOF slag a good material for marine restoration and fixing carbon in waters. Countries like Korea and Japan have studied this very actively. Early experiences of CSC in dumping slag into nearby sea areas also showed a vivid sea bottom compared to control areas (figures on the left).

e. **Future Tasks:** The most serious problems of CSC and EAF plants are the stringent Soil Pollution Control Standard for  $\text{Cr}^{3+}$ , excessive expansion of slag and public's faith in using steel making slag. Future tasks at CSC to deal with these problems are outlined as follows:

- **Volume Stabilization:** CSC is trying to decrease the pH of BOF slag by injecting silica sand at its molten state. The treated BOF slag has excellent properties such as: expansion rate  $<1.5\%$ , free-CaO  $\sim 0$ ,  $\text{pH} < 12$ , and better wearing rate, sodium sulphate soundness, water absorption, flatness etc. than natural material.
- **Categorized Management and Recycling:** This is to enhance slag quality control based on their generations so as to minimize its variations in volume stability.
- **Website for BOF Slag:** To disclose suitable information of BOF slag and make it transparent to the public, thus improve communication and users' faith.
- **Rationalize Soil Pollution Control Standards:** To hold forums and round-table conferences to discuss global trend and the control standards of developed countries will be the preparatory work. Providing suggestions to Taiwan EPA to trigger a modification of Soil Pollution Control Standards to allow proper recycling of steel making slag will be the main follow-up task.



Before volume stabilization



After stabilization

## (8) Control of Toxic Chemicals

- 1. Current Status:** According to the Toxic Chemical Substances Control Act of Taiwan, 299 substances fall into the toxic chemicals category. Among the 15 kinds of toxic chemicals utilized at CSC in 2010, only 2 substances (light oil and chromium trioxide) reach the "threshold regulatable quantities". Light oil (includes >76% of toxic chemical "benzene") is the byproduct of coke process at integrated steel mills. CSC manufactures 60,000 tons of light oil per year, and sells it all to China Steel Chemical Corporation (CSCC) via pipelines. In CSCC, light oil is refined into benzene, toluene, and xylene for sale. Chromium(VI) trioxide( $\text{CrO}_3$ ) is purchased for coating on the surface of steel sheets. Under the no-chromium policy of CSC, the quantities of  $\text{CrO}_3$  used have been reduced significantly. The quantities of light oil and  $\text{CrO}_3$  used list in the follow Table:



| Code   | Toxic Chemical        | Utilization                      | Quantity          |
|--------|-----------------------|----------------------------------|-------------------|
| 052-01 | Benzene(light oil)    | Manufacture and sale             | ~60,000 tons/year |
| 055-01 | Chromium(VI) trioxide | Purchase for steel sheet coating | ~560 tons/year    |

- 2. Compliance to Regulations:** Before using a toxic chemical, CSC will obtain the license issued by local government, followed by declaring the utilization quantities and emission quantities on EPA website regularly. In plants using toxic chemicals, toxic disaster prevention and relief exercises are performed annually to ensure no serious leakage. Besides, CSC also joined the disaster relief team of Kaohsiung and participated in related courses and activities to enhance the capability of disaster prevention.

## (9) Soil and Groundwater Control

For background information and preventive control of soil and groundwater pollution, CSC installed 16 wells for regular monitor. The results over the years showed only minor problems used as early warning for proper actions. To abide by the new soil and groundwater regulations for land transactions, stringent surveys are normal practices for CSC and its subsidiaries to avoid improper responsibilities. In addition, CSC often entrusts academia or professional institutes to study the nearby soil and groundwater conditions to address abnormalities for cooperative actions with neighboring factories.

## (10) Disposal of Hazardous Wastes

The quantities of hazardous wastes in CSC are sparse. Except a lead slag from rolling mills, CSC's hazardous wastes all come from laboratories. The lead slag was sold to recycling vendors, while other waste chemicals are all disposed of by certificated vendors in Taiwan with no exporting cases. The categories and quantities of disposed in 2006~2010 are listed as follows:



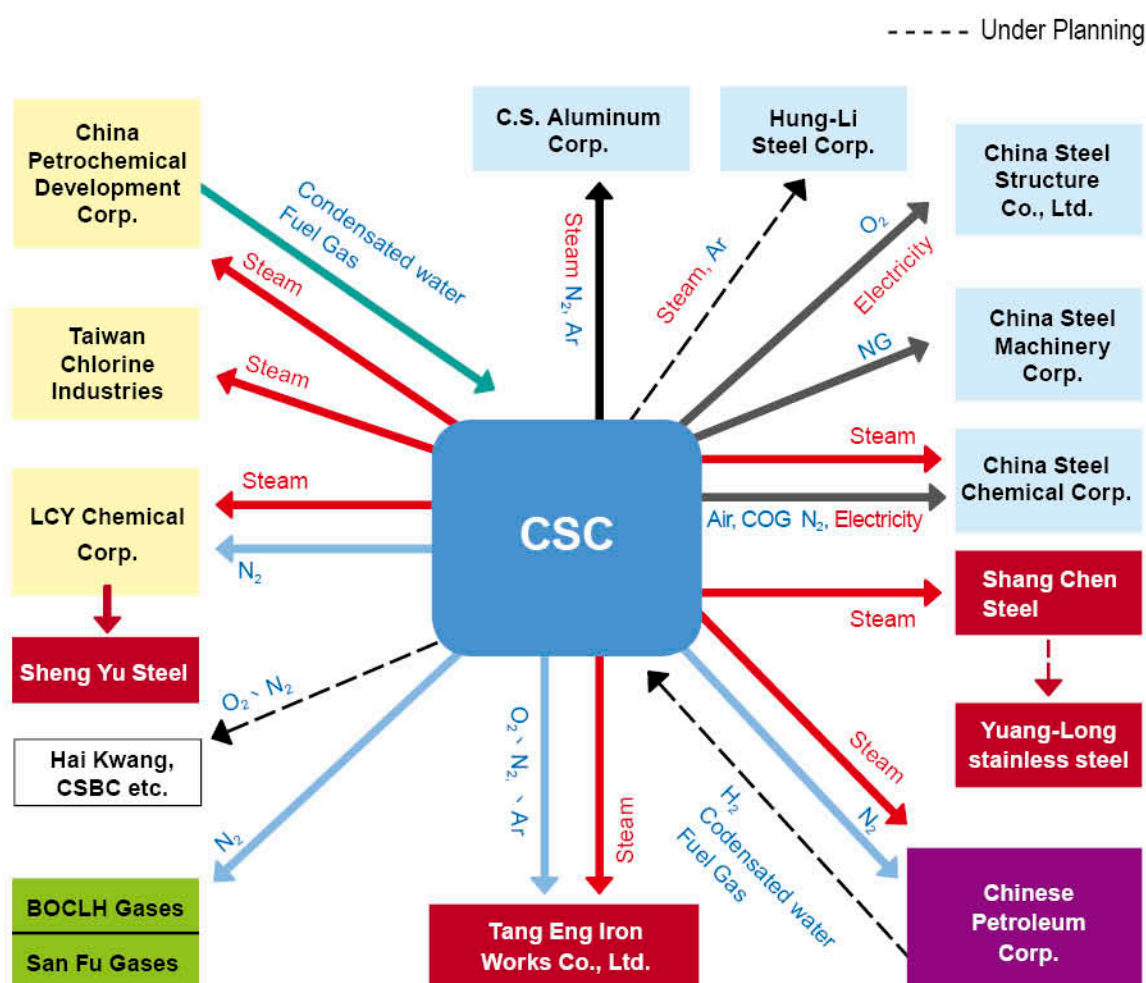
| Year | Vendor                        | Item         | Weight (tonne) |
|------|-------------------------------|--------------|----------------|
| 2006 | RSEA Engineering Corporation  | NaCN         | 0.0385         |
|      |                               | NaCN         | 0.0341         |
|      |                               | Formaldehyde | 0.0216         |
|      |                               | Formaldehyde | 0.0008         |
|      | Thye Ming Industrial Co., Ltd | Lead slag    | 6.10           |

| Year | Vendor                                   | Item            | Weight (tonne) |
|------|--|-----------------|----------------|
| 2007 | RSEA Engineering Corporation             | Chloric solvent | 0.357          |
| 2008 |  | Chloric solvent | 0.36           |
|      |  | Chloric solvent | 0.49           |
| 2009 | Super Max Engineering Enterprise Co.,Ltd | Chloric solvent | 1.106          |
| 2010 |  | Chloric solvent | 0.859          |

### 3.2.4 Green Partnership

#### (1) District Energy Integration

As an integrated steel mill, there are plenty of waste heat and by-products generated from the production processes. To meet the needs of nearby chemical industries etc., CSC has been actively promoting "District Energy Integration" in Linhai Industrial Park since 1993 to improve the overall energy efficiency and reduce mutual costs. The energy products currently being provided include: steam, oxygen, nitrogen, argon, coke oven gas, compressed air etc., as shown in the following figure:

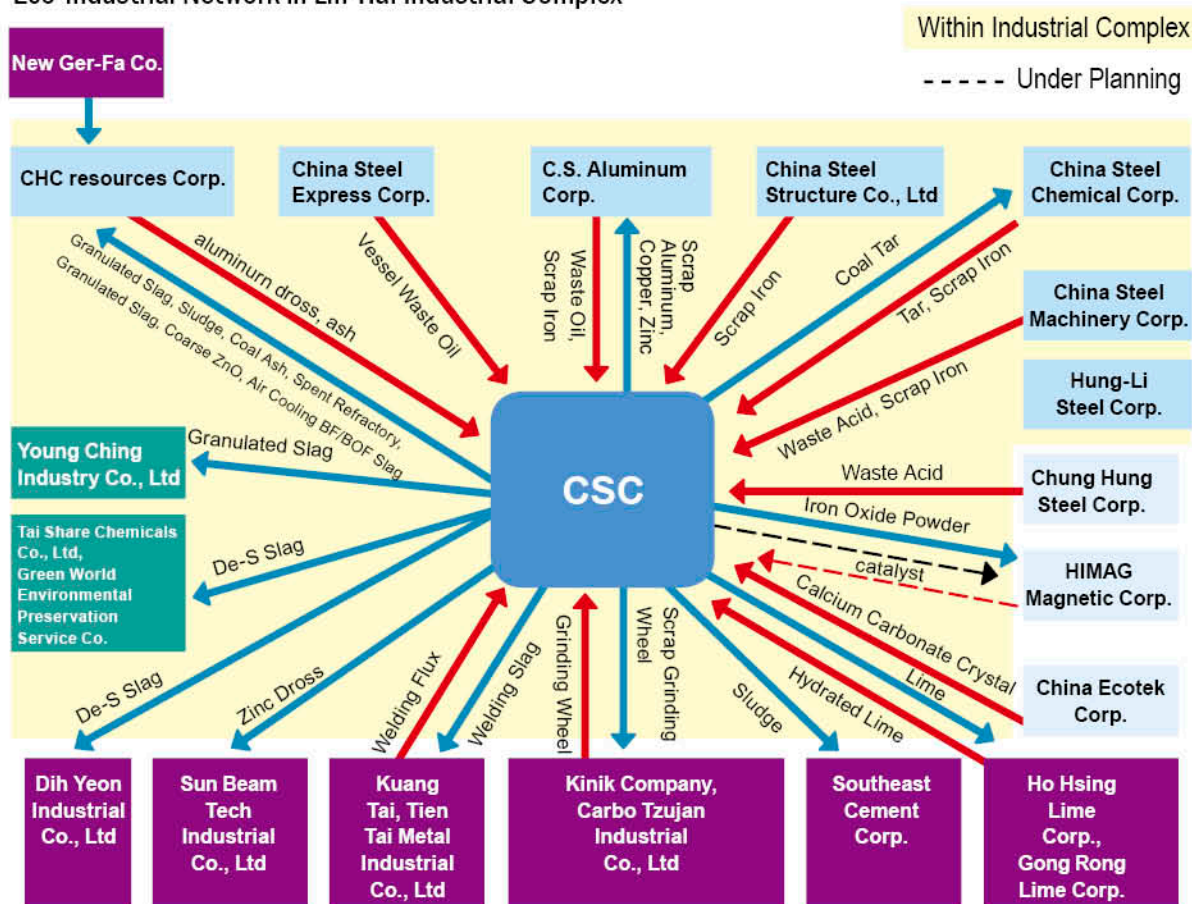




## (2) Eco-Industrial Systems

Base on the original recycling crosslink, CSC cooperated with Taiwan EPA and IDB (Industrial Development Bureau) to expand the eco-system networks inside and outside of LinHai Industrial Park in Kaohsiung. Wastes generated from industries in the eco-system networks can be recycled effectively. Taking CSC as a center, the eco-system networks are composed of 22 companies which are traditional industries mainly, as shown in the following figure:

Eco-industrial Network in Lin-Hai Industrial Complex





Additional examples for recycling in 2010 are highlighted in the following:

- 1. Aluminum Dross and Dust:** Al dross and dust contain AlN which can react with water and release harmful ammonia, and therefore are regarded as soil and water pollutants. They have been big problems in southern Taiwan due to no properly ways of recycling. With the assistance of IDB and EPA, CSC started to use Al dross and dust (pre-treated by CHC) in hot metal de-S process in 2009. This practice not only helps Al smelting companies to solve their waste problems but also helps CSC cut material cost for hot metal de-S.
- 2. Calcium Carbonate Crystals:** Calcium carbonate crystal is a byproduct from softening process in Chengcing Lake Water Purification Plant. It contains mainly CaO and can be recycled at CSC's sinter plant for mutually beneficial result.

### (3) Green Building

Steel structure and BF slag powder are important structural materials of green building. CSC not only promote the use of these materials through its subsidiaries, such as CSSC and CHC, but also support the construction of special green buildings such as the 2010 completed Magic School of Green Technology (the photo on lower left) in National Cheng Kung University. The BF slag cement that CSC Group donated can reduce its cement consumption by 30%, GHG emission by 10%, while increase the ultimate strength of its concrete by 40%.



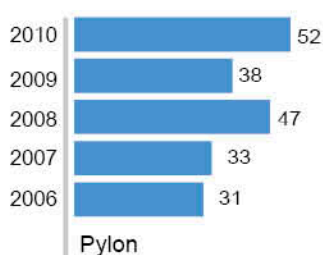
Courtesy of National Chen-Kung Univesity for Providing the Photo of Magic School ofGreen Technology.



Headquarter of CSC Group

In addition, the new factories and buildings of CSC group are designed under Green Building Guidelines as closely as possible. A notable example is the new headquarter building of CSC Group. It was based on the 2005 Green Building Code, featuring low carbon footprint. Except the biodiversity indicator which requires a minimum land area of 2 hectares, the 1.1 hectare based headquarter of CSC group fulfills all the requirements of the remaining 8 indicators (the photo on upper right).

NO. OF WIND MILL POSTS  
MANUFACTURED BY  
CSMC IN 2006~2010



Water Purification Plant



#### (4) Green Business

##### 1. China Steel Machinery Corporation (CSMC)

With former identity as Taiwan Machinery Manufacture Corporation (TMMC), CSMC was established in November 2001. In recent years, CSMC has actively taken part in green industries, making much effort on the design and manufacture of rolling stock equipment, waste heat recycling equipment, and wind power generator posts, etc. With many year's effort and unique strengths such as best qualified manpower, excellent manufacture techniques, and outstanding performance of engineering management, etc., CSMC has advanced to become one of the most important machinery companies in Taiwan and one of main manufacturer of wind power generator posts for internationally well-known companies like GE, Gamesa, Vestas, etc. The actual records of finished posts in the past five years is listed on the left side.

CSMC has accumulated a lot of experience in the manufacture of 227 wind power generator posts. CSMC's quality of products, delivery on schedule, and service have won a good reputation from its customers, and thus strengthened its competitive advantage in the market. Based on the existing achievement, CSMC will continuously cooperate with foreign system suppliers and positively participate in domestic and foreign projects on wind power generation.

##### 2. CHC Resources Corporation

CHC Resources Corporation (CHC) was established in 1991. It is the biggest professional corporation for resources reutilization in Taiwan. Since decades ago, CHC has made great efforts to develop BF slag cement and BF slag powder with high quality, high strength and high value from granulated BF slag. These products can be utilized in construction industries as highly environmental friendly materials. Besides, CHC has expanded its products and services into the recycling and reutilization of BOF slag, mineral sludge from steel mill, waste refractory, aluminum dross, waste glass, treatment of hazardous industrial wastes, remediation of contaminated soil/ground water and other relative fields. BF slag powder is a green product that can reduce GHG emission. The production of 1 ton slag powder, replacing cement in construction, reduces coal consumption by 96kg, electricity consumption by 40kWh and lime requirement by 1.2T. According to the calculation based on the annual production capacity of CHC, 2.65 million tones, the total reduction of GHG emission is approximately 1.9 million ton per year.

##### 3. China Ecotek Corporation

CEC (China Ecotek Corporation) was founded in 1993. It stands as the flagship of the environmental protection industry in Taiwan and aims at enhancing environmental protection quality through engineering capacity and introduction of advanced technology from abroad.

Since its establishment, CEC has achieved remarkable accomplishments in areas such as water treatment, wastewater treatment and recycling, waste management, incinerator construction and so on. It has also expanded



business into photovoltaic, co-generation, biopharmaceutical and biochemical engineering, anti-corrosion and waterproof business as well as some turnkey projects. In addition, CEC is working with domestic and foreign partners to upgrade its potential in environmental domain. Adhering to the principles of excellence, good faith, technological advancement and guarantee of quality, CEC has generated a stable line of business in environmental-related projects.



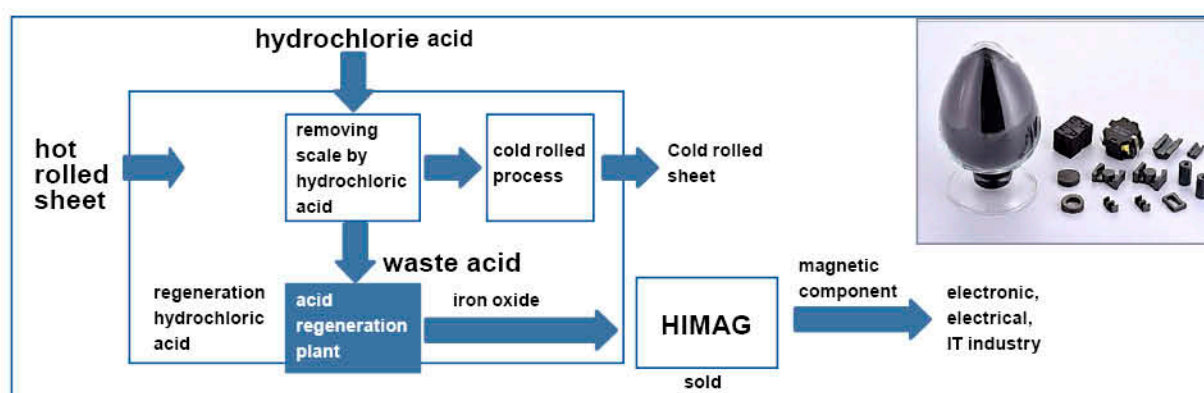
#### 4. China Steel Chemical Corporation

Coal tar and crude light oil are the derived byproducts of coke making process from integrated steel mills. CSC's coal tar and crude light oil are transferred by pipelines to China Steel Chemical Corporation (CSCC) to produce naphthalene, creosote oil, pitch, benzene, toluene, and etc. through a distillation process. For years on, CSCC have upgraded pitch's value-chain by developing Mesophase-pitch Carbon Micro Bead (MCMB). The dubbed MCMB for the anode of secondary lithium ion battery, with quality meeting international standard, has received orders come from domestic and overseas cell manufacturers. In addition, CSCC is continuing to innovate ever higher energy capacity of carbon anode and better performing activated carbon for super capacitors in electrical vehicles, and carbon precursor for tar-based carbon fiber used in value-added pitch products.



#### 5. HIMAG

HIMAG, founded in 1991, endeavors in the development and sales of iron oxide powder for advanced applications. The oxidation scale of steel sheets, generated under hot rolling process, is removed by hydrochloric acid in the pickling line. The waste acid is then treated in the Acid Regeneration Plant of CSC to reclaim hydrochloric acid and iron oxide powder. The regenerated acid is reused in the pickling line, while the iron oxide powder is processed by Himag to produce high quality magnetic materials that are applied widely in electronic, electrical and IT industries as shown in the following flowchart:





### (5) Energy Saving Service

Responding to the request of the Bureau of Energy, CSC Group established its Energy Service Team in 2007 to provide technical service to downstream customers and to upgrade CSC Group companies' performance in saving energy. In 2010, CSC Energy Service Team completed on-site energy saving services to 7 downstream customers with 93 proposals. Due to this remarkable contribution in 2010, CSC received a Memorial Award from Minister of Economic Affairs.

### 3.2.5 Carbon Credit Management

The huge global efforts in climate change will become a big constraint for business operation. Besides seriously devoted in energy saving and GHG reduction on a voluntary basis, CSC also participates in carbon credit activities according to the rules set by Taiwan government. The key progress is shown below:

- (1) **Early Action Credits:** CSC's past performances in GHG reduction can be credited via this scheme. Once finalized, CSC expects to receive a good sum of carbon credits that can be used in GHG reduction commitments such as the one made by DSC for their 2nd phase expansion.
- (2) **Off-Set Credits:** Future carbon credits of CSC could largely come from the District Energy Integration projects. Therefore, CSC is discussing with its partners to find a way of realizing these credits.
- (3) **Future Development:** CSC will support and help government devise other new carbon credit schemes and platforms that are cost effective, followed by full participation.

### 3.2.6 Connected to Global trend

#### (1) Information in Energy and Environmental Policies

Advanced countries, such as EU, US and Japan, are somewhat ahead of Taiwan in the developments of energy and environmental policies and regulations. Understanding the principles and packaged practices developed in advanced countries is very helpful when Taiwan is enacting acts or regulations of similar nature. In recent years, CSC has devoted deeply in collecting the needed information in energy and environmental policies and regulations. Sharing information and providing suggestions based on this reliable sources not only have helped Taiwan government in formulating energy and environmental policies and regulations, but also lessened the tension between government and industrial sectors..

#### (2) Technical Exchange and Cooperation

Technical exchange and cooperation with top ranked peer steel companies can help widen views and trigger further improvements of both companies. In recent years, CSC proactively interacts with top ranked steel companies in Japan, Korea, Mainland China and EU. It is believed these in-depth technical exchange meetings and visits are mutually beneficial. They could also trigger future strategic cooperations, especially in energy and environmental issues, green business and raw materials investments.



### (3) Participate in Multi-National R&D

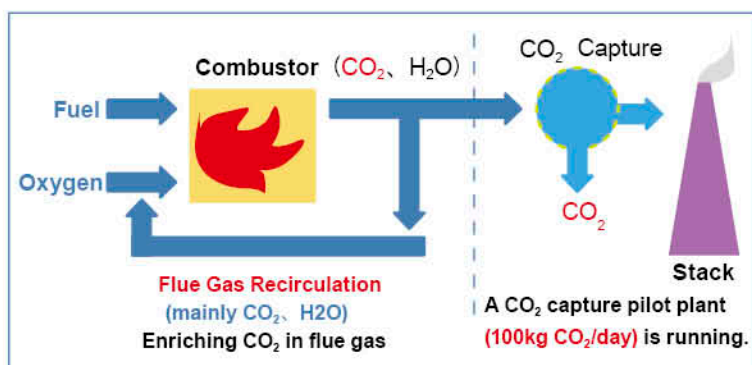
Participation in international R&D programs is a good way to enhance international connections and technical interchanges. At present, the international R&D projects that CSC has signed up are mostly focused on the energy conservation and CO<sub>2</sub> reduction. They were promoted heavily by World Steel Association as shown in the following:

- 1. CO<sub>2</sub> Breakthrough Program:** This program, sponsored by the league of global steel companies, is devoted to reducing CO<sub>2</sub> emission by 30~70% in the ironmaking process. To develop the feasible low CO<sub>2</sub> emission combustion technology, CSC schemed to invest 20 million NTD in the initial 2.5 years to establish an oxy-fuel combustion system, which is to enrich CO<sub>2</sub> concentration in a flue gas, and to develop high-effective carbon capture technologies. In addition, a carbon capture demonstration system has been installed since 2010, for developing CCS chemical absorption agents.
- 2. FSV, Future Steel Vehicle:** The FSV project, the newest large-scale research project sponsored by the international steel industry, is aiming at the body structure of electric vehicles for 2015 to 2020. The challenges that automobile industry is going to face, such as high fuel efficiency, lower green house gas emission, higher safety performance, and lower maintenance cost etc., can be solved by virtue of upgraded steel products.

Courtesy of worldsteel for Providing the FSV photo on the right.



- 3. Biological CO<sub>2</sub> Fixation:** Biological CO<sub>2</sub> fixation and recycling using microalgal photosynthesis has emerged as a potential option for CO<sub>2</sub> reduction. CSC is engaged in this forward-looking research hoping to draw up good strategies for future planning.



### 3.2.7 Environmental Compliance

CSC is in an energy intensive and resource intensive industry. All its massive and sophisticated production facilities are concentrated at Hsiao-Kang Kaohsiung. Naturally, the local Environmental Protection Bureau (EPB) takes CSC as a major factory for close audit. With the improved control installations and enhanced self management to reduce human error, the abnormal emissions of CSC have been largely reduced, as shown in the penalties over the past 5 years:

|                       | 2006                      | 2007                      | 2008                      | 2009                    | 2010                    |
|-----------------------|---------------------------|---------------------------|---------------------------|-------------------------|-------------------------|
| <b>Category</b>       | <b>Air, Water</b>         | <b>Air, Water</b>         | <b>Air</b>                | <b>Air</b>              | <b>Air</b>              |
| <b>Issued by</b>      | <b>Kaohsiung EPB</b>      | <b>Kaohsiung EPB</b>      | <b>Kaohsiung EPB</b>      | <b>Kaohsiung EPB</b>    | <b>Kaohsiung EPB</b>    |
| <b>Piece/ Penalty</b> | <b>17/<br/>NT\$ 2.25M</b> | <b>20/<br/>NT\$ 2.42M</b> | <b>14/<br/>NT\$ 1.91M</b> | <b>9/<br/>NT\$ 1.1M</b> | <b>7/<br/>NT\$ 0.7M</b> |

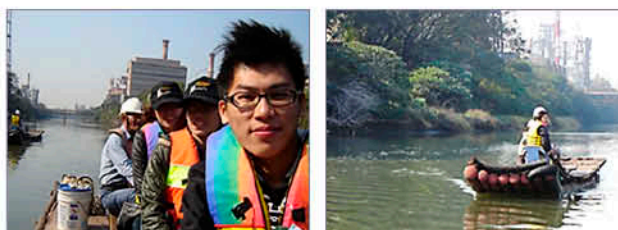
### 3.2.8 Happy Homeland

#### (1) Reduce Environmental Load

- 1. Ecology Restoration:** CSC is located in Lin-Hai Industrial Park, not a ecological sensitive area. The environmental impact assessments of this Park and its enterprises have been well conducted. CSC not only keeps its own environmental commitments very closely, but also help the authorities watch over local environment. The special attention on the water quality of a 60-meter wide river surrounding the eastern and southern parts of CSC site as well as the participation in environmental and ecological activities organized by EPB or communities are good examples.
- 2. Emission Reduction:** CSC has improved its performances in various environmental activities such as waste recycling, air emission control, effluent improvement and energy saving, based on a concept of continual improvement towards the top level. The reductions in particulate, NOx, SOx and dioxin emissions and the river protection efforts, especially during the 2009 World Game period, were highly regarded.
- 3. Voluntary Energy Saving:** Targeted on the administrative area, CSC signed a voluntary energy saving MOU with Kaohsiung City in 2007. After 3 years of implementation, the results were significantly better than expected.

In 2010, other environmental measures and performances include:

- a. Greener Transportation for Fluxtones: CSC is planning to convert these transportations from truck to rail so that the dust emission can be largely reduced, road condition improved while their carbon footprint reduced. The estimated GHG reduction was 4,600 ton/year.
- b. Low-Carbon Truck Transportation: Promote the use of larger and newer trucks, and returning trucks. In the case of using returning trucks from DSC, the estimated GHG reduction was 14,400 tons in 2010.
- c. Connecting Buses for KMRT: CSC funded the No. 2 red connecting bus for KMRT (Kaohsiung Mass Rapid Transit) in 2010, under Kaohsiung City's proposition with the aim to encourage civilians take KMRT more often.





## (2) Ecological City

Ecological city is a global trend for municipalities. It is also a key policy item for central and local governments. To help governments realize this policy, CSC is working on the following:

1. Donate 8,500 bicycles as connecting tools for KMRT so as to increase its taking capacity.
2. Participate in waste energy recovery projects of Kaohsiung City to convert the energy-containing wastes into process inputs to reduce GHG emission and associated air emissions.
3. Increase the reuse of industrial effluent and sewage wastewater after proper treatment.
4. Promote the use of smart grid technologies in CSC and nearby industrial parks.
5. Expand the Green Procurement of CSC Group and the Green Consumption of CSC Group employees.
6. Upgrade the carbon footprint calculator for local daily life to help employees transform to a lower carbon living style. After its completion, this calculator will be tried in energy and environment related departments, followed by revisions and promotions to CSC Group and the general public to gain a wider application.

## (3) Vegetation and Pollution Reduction

To achieve comprehensive and multi-layer re-vegetation, CSC had introduced expertise and techniques for the task. Trees, shrubs and herbaceous plants vegetation were used in a configuration to enrich the ecology and the vegetation forest appearance. As of current status, the size of re-vegetation area is 48 hectares which is nearly one-tenth of the total CSC land, and equivalent to twice the area of Taipei Daan Forest Park. More than 20 thousand stems of trees and 1.34 million stems of shrubs were planted, covering over 284 species. In addition, potted plants as well as vegetation on roof-tops and walls of buildings were used to amplify the multi-layer configuration. Scholars had assessed that the beneficial effects of these vegetation could purify 2,613 tons of particulate pollutants, 292 tons of nitrogen oxides, and 11 tons of sulfur dioxide each year.



## (4) External Vegetation and Forestation

1. Approximately 500 employees and their families were invited to plant trees in Jiasian Township, Kaohsiung County between July and Aug. 2010. This activity was led by CSC's chairman, and the area of afforestation is about 2ha.; 5000 trees, like Chinese sweet gum, *Euphorbia hirta* L., *delonix regia*, *Cassia fistula* and Griffith's ash were planted. The forest will be taken care of by CSC for about one year.
2. Take care of the trees planted in Kaohsiung Park and along the bike routes of Lover's Wharf.
3. Take care of the trees planted on both sides of Jhongshan 3rd Road and Jhongshan 4th Road (between Jhongann Road and Kai-Xuan Road)
4. Plant trees in Kaohsiung Metro Park to beautify the City and donating a Steel Transforming and Uplifting Sculpture located at the entry of the Lin-hai Industrial Park.
5. Afforestation in the national forest lands situated in Liouguei.



Planting in Jiasian



Kaohsiung Metro Park



Planting in XingDa port



A steel sculpture donated by CSC to Lin-Hai Industrial Park.

### (5) Better Ecology and Biodiversity

Although CSC is not situated in an ecological reserve area or its periphery, its efforts in re-vegetation over the years had created an environment of sound biodiversity. According to the surveys by National Pingtung University and CSC's Bird-Watching Club, there are 2 species of mammals, 5 species of amphibians, 32 species of insects, and 75 species of birds in CSC's territory. This has improved the ecological content in HsiaoKang area considerably as shown in the following table:



(Courtesy of Mr.Guey-Fwu Su for providing the photo taken at csc)





## Record of Bird Found at CSC site

|    | English Name               | Scientific Name            | breed recorded | Resident | Transit | Migratory | Vagrant | Leisurely |
|----|----------------------------|----------------------------|----------------|----------|---------|-----------|---------|-----------|
| 1  | Tree Sparrow               | Passer montanus            |                |          |         |           |         |           |
| 2  | Chinese Bulbul             | Pycnonotus sinensis        |                |          |         |           |         |           |
| 3  | Spotted Dove               | Streptopelia chinensis     |                |          |         |           |         |           |
| 4  | Red Turtle Dove            | Streptopelia tranquebarica |                |          |         |           |         |           |
| 5  | Chinese White-eye          | Zosterops japonica         |                |          |         |           |         |           |
| 6  | Tawny-flanked Prinia       | Prinia subflava            |                |          |         |           |         |           |
| 7  | Nutmeg Mannikin            | Lonchura punctulata        |                |          |         |           |         |           |
| 8  | Crested Myna               | Acridotheres cristatellus  |                |          |         |           |         |           |
| 9  | Himalayan Tree Pic         | Dendroica formosac         |                |          |         |           |         |           |
| 10 | Pacific Swallow            | Hirundo tahitica           |                |          |         |           |         |           |
| 11 | Red-rumped Swallow         | Hirundo daurica            |                |          |         |           |         |           |
| 12 | Barn Swallow               | Hirundo rustica            |                |          |         |           |         |           |
| 13 | HouseSwift                 | Apus affinis               |                |          |         |           |         |           |
| 14 | Black- crowned Night Heron | Nycticorax nycticorax      |                |          |         |           |         |           |
| 15 | Little Egret               | Egretta garzetta           |                |          |         |           |         |           |
| 16 | Eastern Reef Heron         | Egretta sacra              |                |          |         |           |         |           |
| 17 | White's Ground Thrush      | Turdus dauma               |                |          |         |           |         |           |
| 18 | Common Kingfisher          | Alcedo atthis              |                |          |         |           |         |           |
| 19 | Ruddy-breasted Crake       | Porzana fusca              |                |          |         |           |         |           |
| 20 | White Wagtail              | Motacilla alba             |                |          |         |           |         |           |
| 21 | Little Grebe               | Podiceps ruficollis        |                |          |         |           |         |           |
| 22 | Brown Shrike               | Lanius cristatus           |                |          |         |           |         |           |
| 23 | Blue Rock Thrush           | Monticola solitarius       |                |          |         |           |         |           |
| 24 | Chinese Little Bittern     | Ixobrychus sinensis        |                |          |         |           |         |           |
| 25 | Common Sandpiper           | Tringa hypoleucos          |                |          |         |           |         |           |
| 26 | Striated Heron             | Butorides striatus         |                |          |         |           |         |           |
| 27 | American Golden Plover     | Pluvialis dominica         |                |          |         |           |         |           |
| 28 | Siberian Ruby throat       | Erithacus calliope         |                |          |         |           |         |           |
| 29 | Midderdoffs Grasshopper    | Locustella ochotensis      |                |          |         |           |         |           |
| 30 | Black Paradise Flycatcher  | Terpsiphone atrocaudata    |                |          |         |           |         |           |
| 31 | Brown Hawk Owl             | Ninox scutulata            |                |          |         |           |         |           |
| 32 | Yellow Wagtail             | Montacilla flava           |                |          |         |           |         |           |
| 33 | Black Drongo               | Dicrurus macrocercus       |                |          |         |           |         |           |
| 34 | Ruddy Kingfisher           | Halcyon coromanda          |                |          |         |           |         |           |
| 35 | Black Bittern              | Ixobrychus flavicollis     |                |          |         |           |         |           |
| 36 | Lanceolated Grasshopper    | Locustella lanceolata      |                |          |         |           |         |           |





(Courtesy of Mr.Guei-Fu Su for providing the photo taken at CSC)

|    | English Name                | Scientific Name         | breed<br>recorded | Resident | Transit | Migratory | Vagrant | Leisurely |
|----|-----------------------------|-------------------------|-------------------|----------|---------|-----------|---------|-----------|
| 37 | Magpie                      | Pica pica               | ■                 | ■        |         |           |         |           |
| 38 | Gray-spotted Flycatcher     | Muscicapa griseisticta  |                   |          | ■       |           |         |           |
| 39 | Common Kestrel              | Falco Tinnunculus       |                   |          |         | ■         |         |           |
| 40 | Emerald Dove                | Chalcophaps indica      |                   | ■        |         |           |         |           |
| 41 | Blackbird                   | Turdus merula           |                   |          | ■       |           |         |           |
| 42 | Lesser Coucal               | Centropus bengalensis   |                   | ■        |         |           |         |           |
| 43 | Allied Nightjar             | Caprimulgus affinis     | ■                 | ■        |         |           |         |           |
| 44 | Muller's Barbet             | Megalaima aorti         |                   | ■        |         |           |         |           |
| 45 | Eurasian Woodcock           | Scolopax rusticola      |                   |          | ■       | ■         |         |           |
| 46 | White-breasted Water Hen    | Amaurornis phoenicurus  |                   | ■        |         |           |         |           |
| 47 | Eye-browed Thrush           | Turdus obscurus         |                   |          | ■       |           |         |           |
| 48 | Pale Thrush                 | Turdus pallidus         |                   |          | ■       | ■         |         |           |
| 49 | Red-bellied Thrush          | Turdus chrysolaus       |                   |          | ■       | ■         |         |           |
| 50 | Red Phalarope               | Phalaropus fulicarius   |                   |          |         |           | ■       |           |
| 51 | Painted Snipe               | Rostratula benghalensis |                   | ■        |         |           |         |           |
| 52 | Gray-backed Starling        | Sturnus sinensis        |                   |          |         | ■         |         |           |
| 53 | Daurian Redstart            | Phoenicurus aureus      |                   |          |         | ■         |         |           |
| 54 | Blue-breasted Banded Rail   | Rallus striatus         |                   | ■        |         |           |         |           |
| 55 | Tufted Duck                 | Aythya fuligula         |                   |          |         | ■         |         |           |
| 56 | Little Ringed Plover        | Charadrius hiaticula    |                   | ■        | ■       |           |         |           |
| 57 | Dusky Thrush                | Turdus naumanni         |                   |          |         | ■         |         |           |
| 58 | Banded Crane                | Rallina eurizonoides    |                   | ■        |         |           |         |           |
| 59 | Arctic Warbler              | Phylloscopus borealis   |                   |          |         | ■         |         |           |
| 60 | Gray's Grasshopper Warbler  | Locustella fasciolata   |                   |          |         |           | ■       |           |
| 61 | Intermediate Egret          | Egretta intermedia      |                   |          |         | ■         |         |           |
| 62 | Oriental Great Reed Warbler | Acrocephalus orientalis |                   |          |         | ■         |         |           |
| 63 | Superb Starling             | Lamprotornis superbus   |                   |          |         |           |         | ■         |
| 64 | Fairy Pitta                 | Pitta nympha            |                   |          |         | ■         |         |           |
| 65 | Ring-necked Pheasant        | Phasianus colchicus     |                   | ■        |         |           |         |           |
| 66 | Crested Goshawk             | Accipiter trivirgatus   |                   | ■        |         |           |         |           |
| 67 | Grey-capped Woodpecker      | Picoides canicapillus   | ■                 | ■        |         |           |         |           |
| 68 | Malaysian Night Heron       | Gorsachius melanolophus | ■                 | ■        |         |           |         |           |
| 69 | Oriental Magpie Robin       | Copsychus saularis      |                   |          |         |           |         | ■         |
| 70 | Black-chinned Fruit Dove    | Ptilinopus leclancheri  |                   |          |         |           | ■       |           |
| 71 | Red-cheeked Starling        | Sturnus philippensis    |                   |          |         | ■         |         |           |
| 72 | Ashy Drongo                 | Dicrurus leucophaeus    |                   |          |         |           | ■       |           |
| 73 | Gray Thrush                 | Turdus cardis           |                   |          | ■       |           |         |           |
| 74 | Green Sandpiper             | Tringa ochropus         |                   |          |         | ■         |         |           |
| 75 | Eastern Turtle Dove         | Streptopelia orientalis |                   | ■        |         |           |         |           |

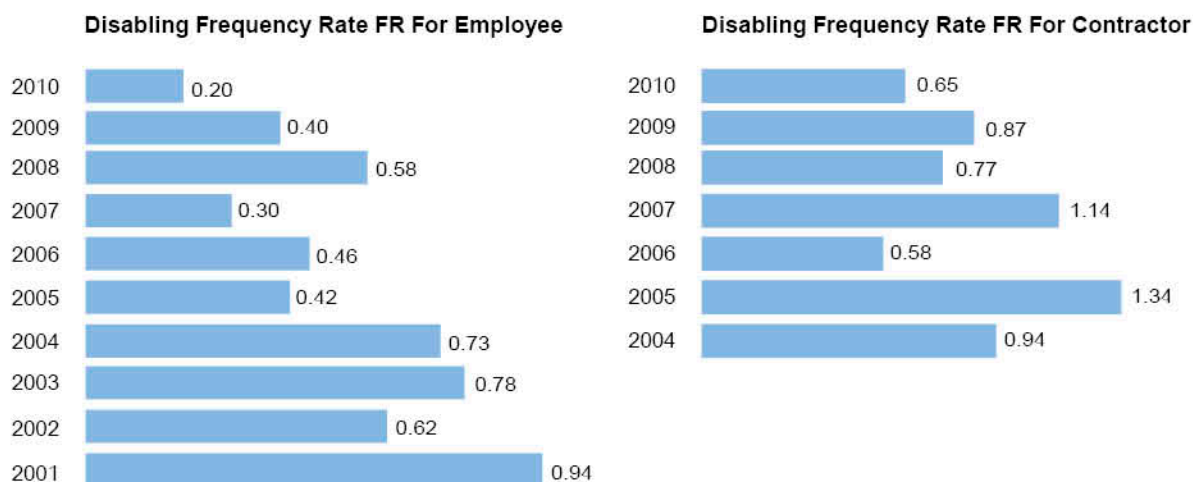


### 3.3 ENGAGEMENT IN SOCIAL HARMONY

#### 3.3.1 Labor Safety and Health

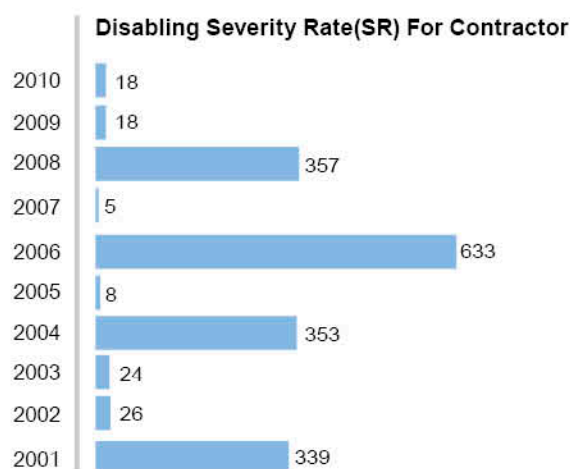
##### (1) Disabled Injuries

Over the past 10 years, the FR and SR of CSC employees and contractors are shown in the following figures:



**Remark**

Disabling Frequency Rate(F.R.)=  
(Number of Disabling Injuries times 1,000,000) divided by the Employee-hours of exposure



**Remark**

Disabling Severity Rate(S.R.)=  
(Days Charged times 1,000,000) divided by  
the Employee-hours of Exposure

CSC has reduced its FR and SR year by year. There were 13 and 19 workplace accidents without death in 2010. 16 of these accidents were disabled injuries and the remaining were light injuries. All wounded persons were male.

To minimize traffic accidents CSC continued to hold courses in traffic safety, no-disaster program, risk prediction, operational risk assessment and etc. to prevent the occurrence of injuries. The number of courses and persons in 2010 are shown below:

1. **On-Job Training of Regulations:** 14 kinds of courses, 75 classes, total trainee 3,827.
2. **On-Job Training of Radiation:** 5 classes, total trainee 375.
3. **Training of Returning Contractors:** 61 classes, total trainee 3,170.
4. **Education and Training for ESH Management:** total trainee 35,832, 77,227 hours.
5. **Physical Simulation Training:** 459 classes, total trainee 3,884.

## (2) Treat of Near Misses

Whenever a near miss occurs, the related department must file an event report and register it within 24 hours on the computerized Safety Management System. This report will be shared by all other departments on CSC site. It will be reviewed by Safety Department and selectively used as a case study in internal education and training. In 2010, 1,380 near misses were submitted. The Safety Department also made use of these reports to review potential hazards in workplaces and discuss prevention programs.

## (3) Accident-Prevention Maneuver

To enhance on-site response abilities to prevent occupational injury, property loss and environmental impact, CSC carried out 6 company-wide emergency response maneuvers in 2010, for the following cases:

1. Coke oven gas (COG) holder leakage in coal chemical process.
2. Ammonia tank leakage in sinter process.
3. Company-wide power failure.
4. Fuel storage and transportation system breakdown.
5. LDG leakage in NO.1 BOF plant.
6. LDG leakage in NO.2 BOF plant.

## (4) Exposure Monitor

CSC selects qualified institutions to regularly monitor workplace environment regarding carbon dioxide, dust, organic solvent, specific chemical material, noise and temperature. If any result is abnormal or above the regulated level, the condition should be immediately corrected.

## (5) Health Examination and Care

1. **Employees:** CSC has established a well-equipped clinic with professional medical care personnel since many years ago to provide early disease diagnosis and treatment. In addition, employees can get subsidies from CSC for the services offered by this clinic. As the employees are gradually aging, it is a very important responsibility of CSC to strengthen health checks and provide recommendations to help employees prevent major diseases. In 2010, the number of people receiving health checks totaled 8,688 and the number with special health checks totaled 3,809.
2. **Contractors:** CSC's contractors are all provided with the same medical services and health checks in CSC's clinic as its employees.



**3. Health Care:** CSC's clinic periodically reminds employees of the key issues for health improvement based on the results of annual health examination. Clinic also hires experts to study the data of health examination in order to grasp the risk factors and propose prevention programs more effectively. In addition, the Health Management Center of CSC's clinic has the responsibility to provide health assistance, activities such as:

- a. Health Lectures:** Every quarter, there are lecture courses for chronic disease prevention. Medical experts are invited sometimes for special forums.
- b. Physical Fitness Program:** CSC has set a annual physical fitness program. The results show that participants have improved their conditions significantly after this program.
- c. Special Health Checks:** Special health checks are offered to needed employees to reduce their health risks, work accidents and the cost of health insurance.

#### (6) Health Management Program

- 1. For Employees and Contractors:** The programs in 2010 include annual health checks, health checkup management, fitness, health information column, male employee health project, health meals, spiritual reconstruction, health lectures, female employee health project.
- 2. Public:** CSC Group Education Foundation transact health lectures for employees, their family members and local communities from time to time to provide more information for personal health management.



Physical Fitness Program



Checking Blood Pressure of contractors

### 3.3.2 Decent Management

#### (1) Participate in Public Affairs

It is a tradition of CSC that its employees do not involve in national politics as a CSC employee, nor does CSC provide contributions to political parties. In public affairs, CSC considers it a social responsibility to provide government and society with suitable information and opinions for in-depth communication and better policy making. These messages are conveyed under a creditable and trustworthy manner through the industrial institutes or associations. The key guiding principles include:

- 1. For a Better Whole:** Not taking the corporate benefit as the only concern but covering the concerns of all stakeholders and the social responsibility of CSC.
- 2. Appropriate Statement:** Statements are offered based on a customer-oriented and empathy mind as well as a fair, open and democratic process to gain wider acceptance.
- 3. Consistence with Global Trend:** To collect suitable and in-depth information from foreign sources followed by proper adjustments according to domestic conditions.

4. **Sound Professional Basis:** Combine collected information with expertise to enhance the credibility of statements and comments.
5. **Target on Fairness and Rationality:** To comply with fair competition principle, and to realize social justice and substantive justice.

## (2) Prevent Malpractice

Since its establishment, CSC has deemed bribery, accepting unjustified benefits or entertainments from suppliers or other stakeholders, as the most serious misconducts. In addition to transmission through the corporate culture to continue this good tradition, CSC implements organizational regulations, control mechanisms and employee training to guard against violations, which include:

1. **Risk Assessment:** According to the "Regulations Governing Establishment of Internal Control Systems by Public Companies" issued by the Financial Supervisory Commission, the Internal Auditors of CSC carry out risk assessment regularly, including compliance of relevant laws, on each trading cycle and operational activities, and prepares annual audit plan according to the results of risk assessment.
2. **Self-Inspection:** According to "Departmental implementation provisions on management review", the general managers prepares self-inspection reports. The inspection items include staff's personal integrity. The self-inspection report is then reviewed by the Internal Audit Office, as well as the President in order to understand whether each department fulfills the purpose of self-inspection mechanism, in a timely manner. Then IA office can adjust the design and implementation of internal control system in response to environmental changes and requirement.
3. **Employee Training:** New employee's training courses include moral integrity, compliance with the company's relevant regulations and disciplines. Company's Culture Committee meeting is held regularly to review the corporate spirits, corporate culture and values, incidents which has adverse effects to corporate cultural heritage of the business. In addition, the concept and practices of corporate culture is advocated by CSC's Semimonthly Journal and website in order to achieve companywide training effect.
4. **Complaints Mailbox:** The complaint hotline and complaint mail box were set up to collect misconduct of employees extensively. After due diligence, the misconducts are dealt with the properly together with relevant departments.
5. **Countermeasures against Misconduct:** personnel management system requires a malpractice actor to be removed. Misconduct cases shall be sent to "Incentive Review Committee" and then dealt with in accordance with its appraisal.

## (3) Socializing Norms

In order to fulfill its profound corporate culture and maintain its corporate image, CSC set up norms requiring employees not to accept gifts or benefits of any stakeholder related to their duties, shall not participate in the banquets and socializing of stakeholders (except for special cases, and approved by department general manager). As those with subordinating affiliation, reason or common sense will be taken into account in the norms.

## (4) Information Transparency

CSC built up an information disclosure system for uploading information such as monthly revenues, materials of shareholders meeting, company profile updates, issuance of corporate bond, material announcements regularly and irregularly through internet in accordance with "Matters on Information Disclosure through Internet for Public Companies" set by Securities and Futures Bureau.



## (5) Evasion due to Conflicts of Interests

According to the STANDARDS OF ETHICAL CONDUCT FOR DIRECTORS AND SUPERVISORS OF THE CHINA STEEL CORPORATION, if an agenda item at a Board Directors meeting involves the director himself or the concerned parties, such that there are concerns of Company's interests being damaged, the director should immediately and voluntarily recuse himself or herself, must not participate in voting, and must not exercise voting rights as proxy for another director.

## (6) Human Right Codes in Major Contracts

In 2010, major investments of CSC includes private offering of Dragon Steel Corporation, private offering of China Steel Structure Corporation, increase of the investment on Adimmune Corporation, investment on Dongbu Metal, investment on Chang-Zhou Xinzhong Precision Alloy Forging Products co. through CSAPH. All the articles of the investment were set according to national laws and no codes of human rights were included. Articles of CSC's contracts with suppliers, contractors and other commercial partners are determined under the regulation of the laws of national human rights. Therefore codes of human rights are not included additionally.

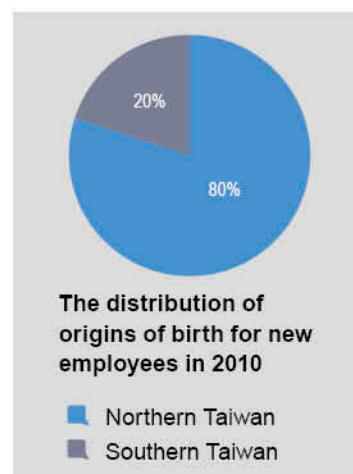
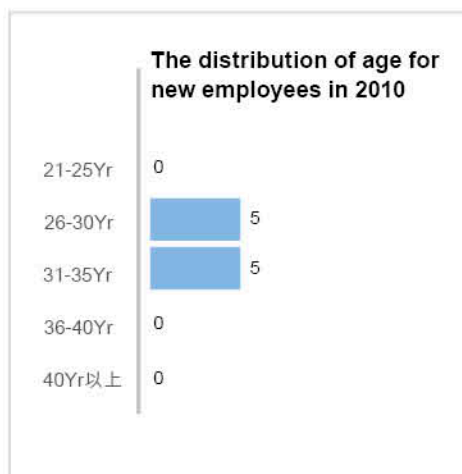
## (7) Fair Trade

Crude steel production in Taiwan is lower than its market need, therefore certain amount of finished and semi-finished steel are imported each year. Since 2004, while the import tariff on steel was relieved, Taiwan steel market has evolved to become free and competitive. CSC group produces and sells products without taking part in any joint-pricing activity, and is fully in compliance with Taiwan Fair Trade Act. CSC transfer pricing policy offers the same price level to CSC affiliated enterprises as to external customers. CSC treats its subsidiaries and trade partners fairly and equally in terms of commission fee or service charge.

### 3.3.3 Human Right Management

#### (1) Employment

CSC absolutely abides by the Labor Standards Act, and has never hired children labors before. Based on the equal opportunity in employment, CSC hires employees on the basis of their professional competences and experience, instead of races, thoughts, religions, parties, origins of birth, sex, sexual orientation, marriages, faces, physical or mental disabilities or union membership. In 2010, the issues in violation of human rights or discrimination never happened while hiring employees. CSC hired 10 new employees in 2010, 7 males and 3 females. The distributions of age and origin of birth are listed as follows:

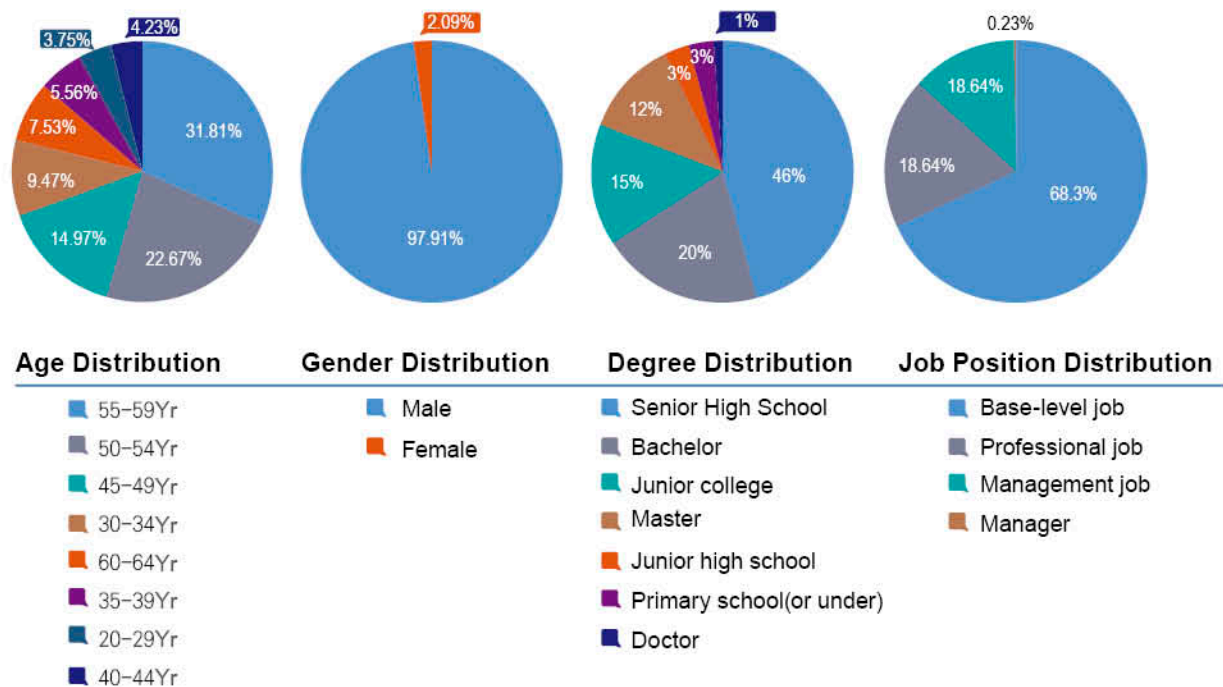


According to the development strategies, investment plans and retirement situation, CSC reviews the necessary manpower periodically, and draws up short-term or long-term employment plans based on minimal and timely needs. In addition, CSC implements a Mentor Program for the succession of key knowledge and skills.

In terms of equal employment rights, CSC has hired 131 physically or mentally disabled up to the end of April, 2011, which is 1.42% of CSC's total number of employees. This is a little higher than the mandatory 1% under the "Protection of Rights for Physically or Mentally Disabled Act". The "Gender Equality in Employment Act", renewed in December 2007, initiates elimination of sex discrimination, promotion of substantial gender equity, establishment of friendly working environment, and child-care benefits. In 2010 there was one female CSC employee, who applied for child-care leave (from July 19 to December 18), then returned to work.

CSC sets up a Committee of Sexual Harassment Grievance to prevent employees from sexual harassments. Employees have multiple routes to communicate and deal with sexual harassment matters. If an employee's legal rights have been violated, he or she can submit or appeal to the administrative system. If a convincing solution can not be obtained, he or she can fill in an appeal form, and send it directly to "Kaoshiung Mail Box 47-77." CSC's President will act as an arbiter, for each appeal and assign one top manager to mediate and investigate the matters.

At the end of 2010, CSC had 9,147 employees, which are all domestically hired. The average age of the employees was 50.1 years. The average employee tenure was 24.9 years. 9,054 employees (98.9 %) are union members. There is no woman in CSC's top management. The distributions of age, gender, degree, and job position for employees are shown in the figures:



## (2) Contractors' Right

Outsourced workers in CSC factories must follow the insurance laws and regulations issued by the government, wear uniforms and safety equipment and comply with CSC's Health and Safety Rules for Outsourcing Vendors, Environmental Regulations for outsourcing Vendors, Work Permit Regulations, Construction Work Safety and Health Rules. Any violation shall be punished in accordance with contract provisions.



### (3) Compensation Management

CSC adopts responsibility-pay system for its compensation management. The compensation criteria is established according to market's compensation level, corporate financial conditions and organizational structure. There are no differences between genders in terms of compensation. Employees at the same job position and job grade are compensated the same. The main items of CSC's compensation include:

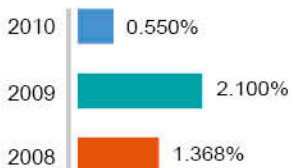
- 1. Base Salary:** Including basic wage, meal allowance, specific environmental allowance.
- 2. Year-end Incentive:** Those who stay employed at the end of the year are offered with the base salary of the last month salary as the year-end incentive. For those employed for less than one year due to retirement, death, severance, transference to invested enterprises, new-entry or reinstatement, their year-end incentive are in proportion to their actual employment days.
- 3. Operating Profit Incentive:** This incentive is provided according to relevant regulations to motivate better operation, and to increase production, reduce costs and raise revenue.
- 4. Compensation for New-entries:** The new entries of CSC are compensated according to the supply-demand of workforce market and the market compensation level. In addition, the following are also taken into consideration: target position, educational background, relevant seniority, market's workforce demand, as well as the compensation of present employees at the same position or with the same seniority.

### (4) Position Change and Turnover

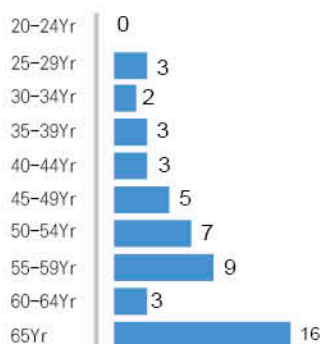
The position change and turnover of CSC's employees are conducted according to relevant regulations. Formal employees' retirement is based on mandatory retirement of 65 years old or voluntary retirement at an earlier age. The relevant regulations are shown below:

- 1. Position Change:** If position change leads to performing difficulties, employees are allowed to address an annulment of employment contract to the company within 24 days after the effective date of change notice; or make an appeal within 24 days after the effective date of change notice, and address an annulment of employment contract to the company within 7 days after appeal dismissal. For any of those described above, annulment of employment contract behind time is regarded as an acceptance of change.
- 2. Early Retirement Program:** In order to promote the industrial safety, personnel metabolism and moderately improve the structures of manpower and employees' age, CSC established "The Early Retirement Program" in September 2010 to show solicitude for employees who were seriously ill or and severely wounded and attract them to voluntarily retire. Applications were accepted from September 1 to December 31, 2010. Once their application got approved, they could retire on February 1, 2011. Totally 168 employees applied for the program. Except for the pension paid on the basis of Labor Standards Act, CSC offered an additional beneficial retirement payment. There were 51 people to resigned in 2010, one of them was female who resigned due to expiration of labor contract. The average turnover rate in past three years was 1.34%. The statistics of turnover rate between 2008 to 2010 are listed as follows:

THE STATISTICS OF  
TURNOVER RATE BETWEEN  
2008 TO 2010



THE DISTRIBUTION OF AGE  
FOR THE RETIREMENT



In 2010, 35 employees resigned before the legal retirement age, including 15 employees applied due to death (not on duty), 2 applied for the Early Retirement Program, 4 for voluntary retirement, 4 due to accidental death, 1 due to expiration of employment contract, and 8 for voluntary resignation. The distribution of age for retirement and resignation of employees in 2010 is shown in:

## (5) Management of Anomalies

1. **Employee Assistance Program:** Including psychological counseling and referral for various issues affecting employee's mental and emotional well-being, such as alcohol and other substance abuse or disorders. Management team is obliged to take care and handle in accordance with corporation's regulations.
2. **Keep Overtime under Control:** For the sake of employees' health, the working time, including overtime, of an employee shall not exceed 12 hours per day. Besides the overtime hours of an employee shall not exceed 46 hours per month. But there are exceptions to the general rule above. If certain emergent situations occur (e.g. unforeseeable machine shutdown), the employee, with supervisors' approval, employees may extend the overtime hours stated above. Subsequent to the over time, the employee shall have suitable time off or recovery.

### 3.3.4 Human Resource Development

#### (1) Functional Orgnization

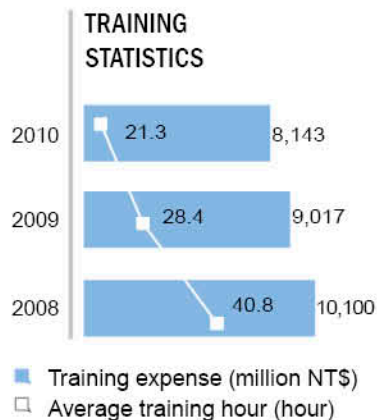
CSC Human Resources Department (HRD) oversees the Manpower Development Section (MDS) whose functions include regulating policies, organizing training roadmaps for talent acquisition and management, managing training budget, and implementing Vigor Management, Knowledge Management and e-Learning. Annual training plans are executed for workforce development, skills utilization, and the transference of knowledge. MDS also selects qualified employees for advanced training programs held by domestic and international organizations.

The establishment of HRD Committee is in accordance with corporate operations, human resources development and the promotion of operational efficiency of CSC. This Committee is responsible for auditing, implementing and reviewing the following:

1. Human resources management policies and goals.
2. Organization development and employee skills utilization plans.
3. Human resources development and talent management plans.

#### (2) Employee Training

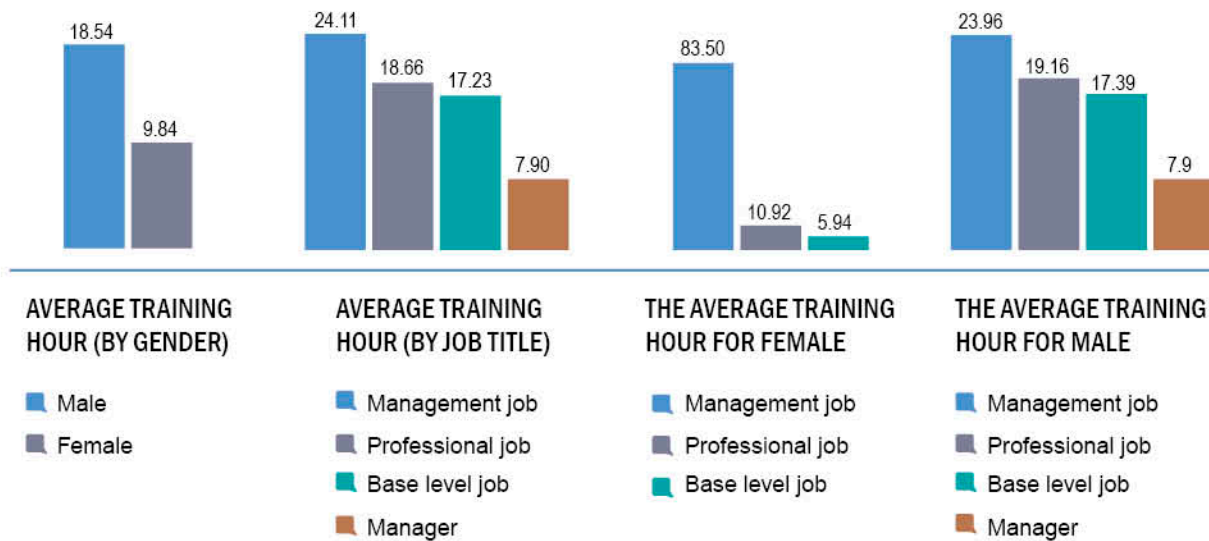
1. **Professional Training:** Suitable training programs are provided by CSC to upgrade employees' capability, knowledge and expertise. Training courses, e-Learning and Mentor system are used for individual employees and career planning. At year-end appraisal, every employee accepts the job efficiency reviewing and the current position duty evaluation. In 2010 the training expense was NT\$81,427,820. Within the last three years, the training expense and average training hour are slightly dropped, which are shown at left:



Mentors for New Employees



Average training hour for genders and job titles for 2010 are shown as followings:



As shown in the figures, in 2010 the average training hour for female managers are 83.50 hour/person, higher than management job for male, 23.96 hr/person. The reason was that there were only three female managers, two of them are recently-promoted and took more professional and leadership training courses.

2. **Domestic and Overseas Training:** In 2010, CSC dispatched 37 employees to get further training in production, research and development, management and foreign languages at domestic and overseas organizations. CSC also selects potential and qualified employees to participate in advanced training programs, 11 was trained at domestic universities and 7 at overseas ones.
3. **Fair Trade Training:** Board members and related personnel from CSC Group companies, Top Managers as well as General Managers of CSC participated in the training course of Regulations for Compliance and Behavior Standard for Taiwan Companies in Response to the Anti-trust Law, held in October, 2010, to get more understanding of international trend and acquire the right rules to follow.
4. **The Impetus of 6- $\sigma$ :** To upgrade the qualities of products and services while minimizing the waste and lowering the costs, CSC adopted the 6- $\sigma$  scheme to improve the thinking pattern and the decision making process. Its development is shown as below:
  - a. **Statistical Training:** For engineers to establish their capabilities as seeds for further promotion in the company.
  - b. **Encourage Articles:** In various internal publications expounding on technical report and training.
  - c. **Create Social Groups:** For sharing the ideas and measures related to 6- $\sigma$  to improve the effectiveness in application.
  - d. **Provide Statistical Tools:** On the knowledge management platform for friendly learning.
  - e. **Construct 6- $\sigma$  Website:** Displayed documents include project initiation, follow-up, analysis, reference papers and good examples.
  - f. **Achievements in 2010:** Trainees received certificates amounted to 86 with black belt and 66 with green belt, and the total registered case amounted to 120. In June 2010, a 6- $\sigma$  presentation conference was held for internal sharing.

### (3) Technical Exchange

CSC's employees have plenty opportunities for visits and technical exchanges with international or domestic institutes, peer steel companies and professionals. In 2010 the major activities include:

1. Organized and hosted a series of symposiums on Engineering and Industrial development in Southern Taiwan, on behalf of Chinese Engineers Association-Kaohsiung Branch.
2. Attended various committee meetings and annual meeting organized by world steel association.
3. Attended the 20th and 21st of CSC-Sumitomo Metals Technical Exchange Meetings.
4. Hosted the 11th CSC-Baosteel Technical Exchange Meeting and the High Rank Management Exchange Forum.
5. Initiated the technical exchange meetings with Ann-Steel, Nan-Jin Steel, Sino-Steel and etc of Mainland China.
6. Continued technical exchange meetings with ThyssenKrupp Steel (Germany) and MEFOS (a Sweden Metallurgical Research Institute).
7. Participated in Bao-Steel's 4th Academic Conference.
8. Attended the exchange meetings with Japanese petro-chemical industries on Safety Examination for High Pressure Facilities.
9. Attended the 2010 Technical as well as Environmental and Safety Committee Meetings and Seminars.
10. Attended the AISTech 2010 International Conference.



visit SMI



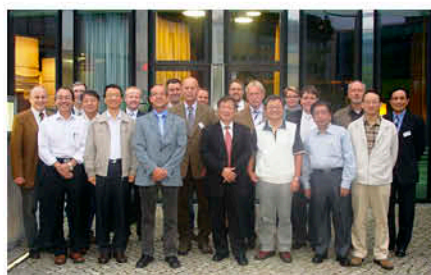
Baosteel's visit



SEAISI Symposium



Conference of AISTech



Visit Thyssen krupp in Germany



MEFOS's visit



#### (4) Contractor Training

Contractors are an integral part of CSC's workforce. It is crucial to ensure their compliance to work safety regulations and professional skills. Therefore, contractors are carefully regulated and supervised by CSC regarding workplace safety and technical training. In 2010, the total training hours for subcontractors are 95,592.5, as shown in the following:

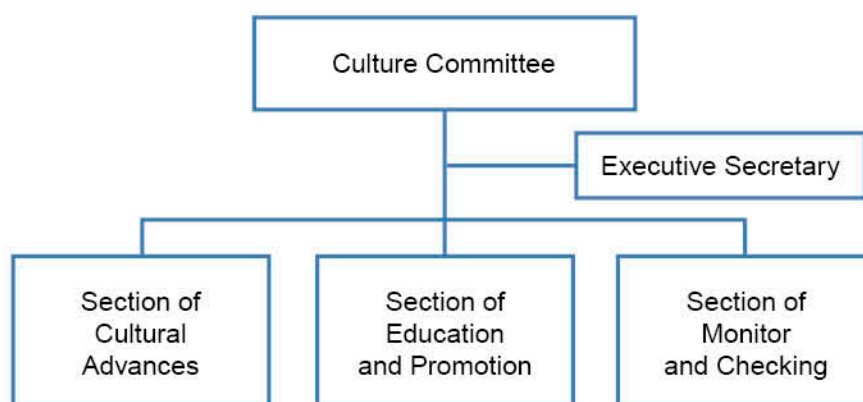
| ITEM                                | TRAINING COURSES               | PERSONS | HOURS | TOTAL HOURS |
|-------------------------------------|--------------------------------|---------|-------|-------------|
| <b>Safety Training</b>              | New Employee Training          | 8,146   | 6     | 48,876      |
|                                     | Safety Certificate Re-training | 3,170   | 3     | 9,510       |
|                                     | Safety Sense                   | 3,884   | 8     | 31,072      |
| <b>Technical Skill Training</b>     | Electric Welding               | 0       | 0     | 0           |
|                                     | Bearing                        | 0       | 0     | 0           |
|                                     | Construction Frame             | 139     | 3     | 417         |
|                                     | Roofing Work                   | 274     | 2     | 548         |
|                                     | Others                         |         |       | 4,486.5     |
| <b>Skill Qualifying Examination</b> | Electric Welding               | 122     | 1     | 122         |
|                                     | Pincer                         | 130     | 1     | 130         |
|                                     | Quenching                      | 62      | 1     | 62          |
|                                     | Construction Frame (Truss)     | 123     | 3     | 369         |

#### (5) Security Training

China Steel Security Corporation (CSSC), one of CSC's subsidiaries, is in charge of CSC's indoor safety including plant site and administration area. Currently there are 145 CSSC employees employees garrison in CSC's sites. They all are trained with the courses of safety duty and human rights.

#### (6) Cultural Heritage

In the next 5 years, there will be 690 employees to retire from CSC. Hence, the pass-on of expertise and organizational culture to new employees is a critical issue. To better realize the four spirits of CSC, teamwork, Entrepreneurial approach, down-to-earthiness and pursuit of innovation, the CSC Culture Committee was established in September 2010, with high rank managers as its chairman and committee members. Its organization is shown as follows:



The committee is assigned with the following functions:

1. Review the spirits, culture and values of CSC, and upgrade them by proving suitable meaning according to the needs in modern society.
2. Plan, promote, review and realize the pass-on of premium culture and value of CSC.
3. Promote the culture of self-directing towards excellence on management level, and formulate a sound atmosphere for better credibility, consensus, cooperation, effectiveness, innovation, and proactive attitude.

### (7) Encourage Self-Development

CDA (Creative Development Activities) and ESS (Employee Suggestion System) are the activities adopted in CSC since many years ago, aiming at encouraging employees to discover problems at their workplaces and to make suggestions and offer solutions via group endeavors. The performances in 2010 are shown below:

1. **CDA:** CDA involved 565 "circles" with 5,785 participants (97.4% of the blue-collar personnel of the department concerned), with the completion of 693 topics which more than NT\$82 million in benefits.
2. **ESS:** The Suggestion System offered 21,832 suggestions of which 21,255(97.4%) were adopted, resulted in more than NT\$140 million in estimated tangible benefits.



### (8) Knowledge Management

To prepare for the high retiring rate in the next few years, CSC established a knowledge management system that identifies key capabilities and the associated specialists and documents for inventory banking, passing-on and further innovation. The Knowledge Management committee of CSC and its activities were launched in 2006 under the following structure:

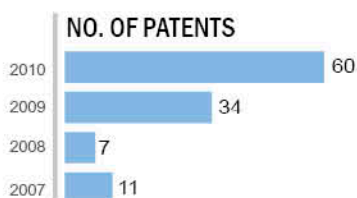
The main tasks of this committee include:

1. **Knowledge Roadmap and Pass-down:** Focus on the expertise and experiences needed in practical work.
2. **Knowledge Group Activities:** To encourage group discussions at fundamental levels to the culture of sharing and to energize the organization.
3. **Successor Training and Mentor System:** To maintain mold the corporate culture of sharing, motivate individuals for better learning and working environment.

In 2010, 69 Knowledge groups were in action, 5,727 pieces of documents completed, and 121 e-learning courses offered, indicating the blooming activities in knowledge management and sharing.







## (9) Patent Management

CSC created a Patent Application and Promotion Committee to facilitate its technical planning and competitiveness edge. The committee members meet twice year at least. A special award is set to encourage and reward the departments and individuals that have excellent performances. The organization chart of this committee is shown as follows:

1. **Chairman:** VP of Technical Division.
2. **Vice chairman (2):** Assistant VP of Technical Division and one Assistant VP of Production Division.
3. **Executive Secretary:** General Manager of Technical Planning Department.
4. **Committee Members (23):** General Managers of related departments and Head of Legal Affairs.
5. **Review Experts:** Appointed by chairman depending on needs.

In the past 4 years, the patents obtained by CSC is steadily increasing, as shown in the left figure:

### 3.3.5 Operation of Labor Union

#### (1) Collective Agreement

Labor and employer relation is considered a crucial issue in CSC. In order to maintain a good mutual communication and interaction, CSC signed the first collective agreement with its Labor Union on Feb 14, 1997. This agreement was deemed as a milestone in Taiwan's labor movement. Thanks for the foresighted concepts implanted in various articles, this collective agreement has been a model template for many labor unions in Taiwan.

#### (2) Participation in Corporate Governance

To fulfill corporate democracy at CSC, apart from the monthly Labor and Management Committee Meeting, a Labor Director has been appointed in CSC Board since June 30, 1999. The President of the Labor Union was nominated and elected as this Board Director for the first time on May 31, 2001. In addition, there are certain seats provided to Labor Union Representatives in both Human Resource Development Committee and Rewards and Punishment Committee.

#### (3) Defending Members' Rights

Labor Union's approach for defending and improving members' rights is featured with rational communication meetings, such as Labor and Management Committee Meeting, meeting between Labor Union's leaders and CSC's top management, collective agreement negotiation meeting and etc. Over the past 30 years only in few cases when communication meetings did not reach agreement, Labor Union initiated collective protest march or litigation, such as:



1. Gathered a sit-down demonstration with 5,000 members on Nov 29, 1994 for requesting "No lay-off and No decreased salary after CSC's privatization".
2. Protested on Dec 13, 2002 and July 2, 2003, against CSC's unjustified evaluation on employees' performances, which had a large impact on annual bonus.
3. 1,441 members commenced a suit on April 7, 2000 against CSC management to include workers' shift allowance in their average wage calculations for pension.
4. Filed a law suit against CSC management: e.g. CSC's dispute of working time in 2002 and its inadequate time off policy for overtime hours in 2011.

#### (4) External Activities

Labor Union actively associated with national and international labor unions. The main events and activities in 2010 are shown below:

1. Annual Summit on Jan. 11: Hosted by Taiwan Confederation of Trade Unions.
2. KYMCO Workers' Union Congress on Mar 12
3. China Steel Aluminum Union Congress on Mar 30
4. Support the protest march of Taiwan Petroleum Workers' Union for Anti-factory Relocation, Lay-off and Decent Work, in front of Ministry of Economic Affairs, April 7.
5. Anti-Poverty parade on May 1, hosted by Taiwan Confederation of Trade Unions.
6. International Labor Affairs Conference from May 30 to June 5, hosted by Turkish Metal Workers Union (Turk Metal Sendikasi)
7. International Labor Affairs Seminar from Dec 16 to the 17th, hosted by Heavy Industry Committee.

#### (5) Social Welfare Activities

Labor Union not only defends members' rights and improves services but also contributes to the society with great efforts, e.g:

1. Initiated books donation to NGOs.
2. Swept and cleaned the neighborhood streets and parks.
3. Initiated a donation for Typhoon Morakot via the local government of Kaohsiung, Tainan and Pingtung, Aug 2009.
4. Initiated a donation with NT\$18,300,000 for 921 Earthquake Damaged Households, Sep 21, 1999.

#### 3.3.6 Welfare Measures

In order to provide decent working conditions and to meet the welfare needs of employees, the Labor Union and Management of CSC jointly form CSC Welfare Committee and set up Employee Benefits Section to handle the affairs of employee benefits, including internal recreation activities, trust loan, four holidays' bonuses, cash gifts for birthday and new babies, wedding and children education subsidies, year-end lottery and dinner party allowance, member welfare subsidy, discount stores and many more.





## (1) Facilities and Associations

The Welfare Cooperative Store of CSC provides several facilities to employees, including a shopping mall, an employee restaurant, a singles dormitory, a gym, shuttle bus services, a self-service laundry center and reading room. CSC always takes an encouraging attitude on the establishment of associations, providing employees with ways to restore physical and mental health as well as chances to offer social and human care to the society. To the end of 2010, there are 41 associations in CSC, each having its own characteristics. For example:

- 1. Philanthropy Club:** Registered to Social Affairs Bureau of Kaohsiung City Government in 2000, philanthropy club holds the belief of "Be in one's Shoes" and tries to contribute to the society proactively. Club members participate in the work of emergency relief, regular help, life care and orphan care. They also periodically hold social activities such as promoting friendly relationship among neighbors, servicing communities, and relieving people from disasters. Some members and their families donate to charity fund monthly, visit children in poverty at remote indigenous villages termly, and engage in other community services.
- 2. Bicycle Club:** Promoting the advantages of riding bicycle and contributing to the reduction of CO<sub>2</sub> emission.
- 3. Bird Watching Club:** Based on the concept of ecological protection, Bird Watching Club holds bird watching activities irregularly and invites external experts to share ecological concepts. They also help with the recording of birds discovered within CSC territory.
- 4. Chorus:** Group singing and reading are the main activities of the chorus association. It has opportunities to perform alone or together with outside choirs.
- 5. Others:** To provide employees and communities with exhibitions, lectures and performances irregularly for leisure and recreation. Notable ones include Stone Watching Club, Horticulture Association, Photography Club, Traditional Chinese Music Club, Tai-Chi Club and many others.

Moreover, many employees of CSC also serve as volunteers in outside associations such as Tzu-chi, Family Helper and etc. to contribute more widely to the society.





## (2) Contractors' Benefits

Contractors working in CSC sites can also enjoy the same benefits and part of the welfare facilities as the local residents of Hsiao-Kang District. For example, they can enter the shopping mall, employee restaurant, gym, reading rooms and etc. and enjoy the offered services.

## (3) Services to Retirees

In March of 2011, CSC set up the Retirees Service Department for caring and providing services to its retirees. Its vision is to promote the sense of being a family member of CSC and help its retirees maintain a healthy and sustainable lifestyle. The major activities of this new department include:

- Conduct periodically LOHAS seminars for the life of retirement preparation.
- Set up retirees' website which connects to the intranet community and updated information of company, employee committee, labor union and others.
- Encourage retirees participate in the company sponsored charitable activities and friendship network.
- Develop retirees' talent pool and retirees' knowledge bank on internet platform.
- Provide the information of retirees' manpower resource to CSC group companies for related outside projects in technical and management consultation.

The caring and services action plans for CSC's retirees are implemented in stages. The key is to emphasize that the retirement life is another new beginning, and to promote the worthwhile lifestyles and enjoy a more meaningful life.



## 3.3.7 Social Participation

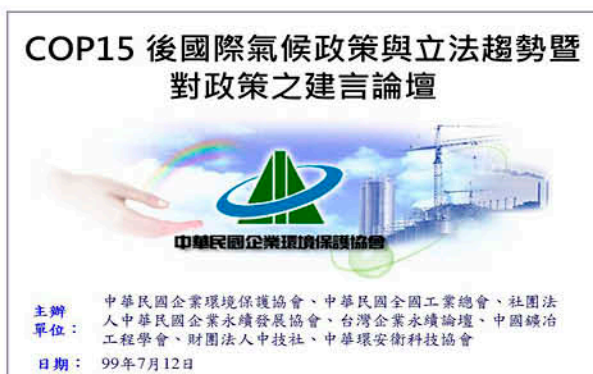
### (1) Public Policy

After collecting reliable information from advanced countries, CSC made in-depth studies, shared with industrial peers, followed by organizing various policy forums for reporting and proposals. The aim was to assist governmental authorities to have better understanding and basis in making environmental policies and regulations. The major subjects include:

1. **Energy Taxes:** Information and exemptions in EU, Japan, Korea and other OECD countries were very helpful.
2. **GHG Reduction Act:** Again the existing and future Acts of EU, Japan, Korea and other OECD countries played a important role.
3. **Waste Cleaning and Disposal Act:** The 2010 modifications in Articles 28 and 36 against lawful enterprises created lot of unnecessary problems. CSC also joined the industrial efforts for a reasonable amendment.
4. **Soil and Groundwater Control Standards:** To control  $\text{Cr}^{3+}$  and  $\text{Cr}^{6+}$  separately based on their health risks will help rationalize these control standards and provide steel making slag with a suitable room for reuse. In addition, health risk assessment approach will also increase the feasibility to remediate contaminated soil.



**5. Fund for Orphanage Contaminated Sites:** The global trend is that polluter(s) or potentially responsible parties are the payers with higher priorities. CSC and other industrial peers strongly suggested Taiwan EPA to adopt these widely accepted principles, as also indicated in the newly revised Soil and Groundwater Pollution Control Act of Taiwan.



GHG Policy and Regulatory Forum after COP15

## (2) Social Responsibilities Expenditure

In recent years CSC has given donations in various occasions. The major ones are listed below:

1. **Relief Donation for Typhoon Mindfully in Taiwan:** NT\$20 million and over NT\$60 million for building the Dongsu Bridge, Liouguei.
2. **Relief Donation for Earthquake in Sichuan, China:** NT\$100 million.
3. **Emergency Assistance Funds for Typhoon Morakot in Taiwan:** NT\$20 million and NT\$500 million for reconstruction works after the disaster (including building Sinfa Bridge, Kaohsiung County).
4. **Disaster Relief Funds for Earthquake Tsunami in Japan on March 11, 2011:** NT\$30 million.
5. **For Retired Employees:** Implement welfare services; give them the feeling that they are still members of CSC.
6. **For Institutions and Associations:** Budgets were set for local and foreign seminars or workshops to improve the competitiveness of CSC and create communication channels for employees.
7. **CSC Group Education Foundation:** In 2010 NT\$16.45 million were donated to the foundation by CSC to implement cultural and educational policies so that steel-related education and talents can be cultivated.
8. **Public Affairs Dept.:** Budgets were planned for local public services, emergency assistance and natural disaster relief funds.

### (3) Contribute to Society and Good-Neighbor

CSC endeavors great efforts in providing a better living environment for local residents. Other than paying income tax and other fees to Kaohsiung. Based on good-neighbor policy, CSC is regularly promoting the following :

1. According to "Guidelines to Recruit Siaogang Young Residents as CSC New Employees", additional points are given to local residents in their recruiting tests.
2. Provide new facilities to local public schools and fund their educational activities.
3. Award scholarships to distinguished students in the community and aid funds for students from low-income families.
4. Irregularly invite vulnerable groups to participate in activities held by CSC.
5. Promote filial devotion and ethics as well as praise the performance of students.
6. Provide aid funds to low-income families on holidays, such as Chinese New Year, Dragon Boat Festival and Moon Festival as well as emergency relief funds for people in poor situation.
7. Participate in local folklore activities or public services.
8. Movies are arranged every Saturday to both CSC employees and neighboring communities; provide leisure facilities and invite local residents to attend CSC's activities or festivals.
9. Assist in local public activities, such as reconstructing parking area and Activity Center, publishing plantation brochure in Siaogang District; inviting institutions, schools, citizen representatives, local residents and etc. to visit CSC for a better understanding of the steel production process and achievements in environmental protection.
10. The kindergarten in Siaogang, managed by CSC Employees Welfare Committee, is open to local residents since many years ago.
11. Donate old computers to children from vulnerable groups and aboriginal tribes; Children-care activities are arranged from time to time; help Minchuan Elementary School in Namaxia Township restart after the disasters due to typhoons.
12. Hold summer camps for elementary school students of Siuogang District; hold outdoor learning classes in the Steel Journey Program to help students understand the continuous operation of the only integrated steel mill in Taiwan.



注重原住民文化關懷弱勢



少女城訪視





#### (4) Emergency Assistance

Donating money and needed materials to people who suffered from natural disasters, such as flooding and earthquake, are common practices of CSC. CSC also helped steel mill owners in Southern Taiwan to solve their problems and restart their production as soon as possible after natural disasters. In Sept. 2010 when Typhoon Fanapi caused disasters in southern Taiwan, CSC and its associations helped clean local schools and parks, delivered water to neighborhoods and helped local residents restore their daily life and normal work.

#### (5) Reconstruction after Natural Disasters

CSC not only provided resources to the ruined area but also helped their reconstruction work. For example, CSC had spent NT\$500 million to construct the Sinfa Bridge and donated the Road Bureau after Typhoon Fanapi. The groundbreaking ceremony was held in Jan. 2010 (picture in below) and the bridge was completed in June 2011. This bridge will provide safe transportation and bring economic prosperity to the mountain area.



## (6) Sponsor Art Activities and Education

Major activities sponsored and promoted by the CSC Group Education Foundation in 2010 include:

1. Fostered cooperation between industry and educational institutions in order to train local college and high school students by providing steel related courses and job-site touring to steel industries. It is hoped that the collaboration between industry and academia will attract outstanding students to gain understanding of the steel industry, the progress and development of Kaohsiung City, and to choose steel-related careers.
2. Sponsored related programs to encourage citizens to take Kaohsiung Mass Rapid Transport System (KMRT) to promote public transit system and the concept of energy conservation and carbon reduction.
3. Held educational camps of ecological conservation for school children in Kaohsiung Municipality and Kaohsiung County to cultivate ecological conservation education.
4. Jointly held the cultural and social speech with United Daily News by inviting the celebrated figures, giving lectures to high school students of Kaohsiung city.
5. Cooperated with Teacher Chang Foundation to process a series course of lectures, concentrating on the subject of motivational and positive inspiration.
6. Irregularly sponsored musical and literature activities.
7. Assisted Greater Kaohsiung City in cultural and art activities to thrive the spirit of art and literature on a long term basis.





## (7) Sponsor Civil Society

In order to establish a multi-channel of communication with society, CSC participates in various international and local organizations actively and sponsored their activities and forums, such as:

1. Sponsored seminars related to steel technologies to assist the downstream industries to upgrade their technology level.
2. Found the CSCGEF Award in material science department. Encourage student major steel related thesis and lesson.
3. Cooperated with the Material Science Departments of National Taiwan University, National Cheng Kung University and National Sun Yat-Sen University in offering introductory courses on the fundamentals of steel and providing CSC scholarship; also sponsored National Cheng Kung University to establish "China Steel Metal laboratory", cultivating future talents for the steel industry.
4. Jointly held "Children, Go to the Theater" series activities with World Vision for children from the Sandimen Township which was severely damaged by Typhoon Morakot, also sponsored the event of "Make Melodies for Hope / 2010 Watoto Care-for-Children Concert".
5. Cooperated with Kaohsiung City Symphony Orchestra to hold the concerts of "Shuttle in the 1Q84 Heterotopia of Murakami", "Akiko Suwanai vs Yu Kosuge"



**中鋼集團教育基金會**  
CSC GROUP EDUCATION FOUNDATION

### 第二屆「中鋼集團教育基金會獎學金」

**設立宗旨**  
財團法人中鋼集團教育基金會基於促進鋼鐵相關領域之教育及人才培育之宗旨設立本獎學金，獎勵材料系所學生努力向學，並致力鋼鐵、冶金相關研究，為社會培養優秀的鋼鐵產業人才。

**獎勵對象及名額**  
中鋼集團教育基金會特別提供國立成功大學材料科學及工程學系暨研究所碩士班及大學部大四學生獎學金共三名。

**金額**  
頒發新台幣壹拾萬元之金額及證書，得獎學生須配合至基金會受獎，日期另行通知。

**申請資格**  
一、國立成功大學材料科學及工程學系碩士班及大學部大四學生。  
二、大學部學生須選修鋼鐵冶金相關課程至少二門；碩士班學生須選修鋼鐵冶金相關課程至少二門，或撰寫鋼鐵材料相關之研究論文。

**檢附資料**  
一、大學部及研究所修業歷年成績單及第肆修第二項修課及相關證明文件(碩士班學生亦須提交大學部成績單)。  
二、自傳及生涯規劃(2000字以內)。  
三、教授推薦信。

**申請日期及評選**  
• 於97年10月15日前，將資料送至材料科學及工程學系辦公室。  
• 材料科學與工程系將於97年10月底前完成初審程序，評選後推薦7名候選人至中鋼集團教育基金會評選後決定獎學金之人選。

**頒獎及就業**  
一、中鋼集團教育基金會公告得獎名單後，將邀得獎學生至基金會接受頒發獎學金及證書。  
二、獲獎學金之學生，中鋼集團得視人力需要提供優先就業之機會。

Scholarship from CSC Group Foundation



CSC employees participating in Forth Challenge Contest in Steel University

### 3.3.8 Regulatory Issues

#### (1) Identify Safety Regulations

According to the OHSAS 18001 and ISO 14001 management system, the organization must promise to obey the related laws and identify the related regulations and requests. CSC transfers the related regulations through intranet to related departments for identification and early response. In 2010, CSC identified 45 Pieces of regulations related to OHSAS 18001 and ISO 14001.

#### (2) Safety Compliance

Except the accident caused by human error, CSC had no other violation record in 2010. There were 2 violations on health and safety system, the total amount of penalty were NT\$180,000 in 2010. The records for the past 5 years are shown bellow:

|                   | 2006              | 2007              | 2008               | 2009               | 2010               |
|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| ISSUED BY         | Kaohsiung LID*    | Kaohsiung LID     | Kaohsiung LID      | Kaohsiung LID      | Kaohsiung LID      |
| PIECE/<br>PENALTY | 1/<br>NT\$ 60,000 | 1/<br>NT\$ 60,000 | 3/<br>NT\$ 180,000 | 2/<br>NT\$ 120,000 | 2/<br>NT\$ 180,000 |

\*LID:Labour Inspection Dept.



# 4



## FUTURE GOALS AND DIRECTIONS

- CORPORATE GOVERNANCE
- ENERGY & ENVIRONMENTAL MANAGEMENT
- ENGAGEMENT IN SOCIAL HARMONY

### 4.1 CORPORATE GOVERNANCE

1. The 2011 business policies of operation include:
  - Proactively invest in upstream raw materials.
  - Widen downstream channels for product sales.
  - Innovate in R & D for high value-added steel products.
  - Upgrade processes for GHG reduction.
2. Increase the total sales of CSC Group by 42% before 2015 with steel production of 21.04 million ton and steel sales volume of 20.28 million ton.
3. Enhance customer service and the strategic cooperation with top level steel companies.
4. Participate in the activities of World Steel Association to maintain good partnership and interaction for fair competition worldwide.

### 4.2 ENERGY AND ENVIRONMENTAL MANAGEMENT

1. Continue the development of high grade, high strength steel products to help reduce the carbon footprint of down-stream's products (such as motors, compressors, vehicles and low carbon energy equipment)
2. Continue the implementation of best available technologies in energy and environmental fields under permitted space conditions, with the target that CSC's intensities approaching or staying at the world top level.
3. Energy intensity of 2011 is 5,600 Mcal/tcs, SOx intensity is reduced by 10% or more.
4. The main installations from 2011 to 2015 include: install windbreaks at stockpiles and de-S equipment at No. 4 sinter plant, while upgrade de-SOx and de-NOx facilities of coal firing boilers (No. 6~8), to reduce particulate emission by 1,651kg/day, SOx emission by 5,590kg/day and NOx emission by 1,045kg/day.



5. Develop and use low carbon and carbon neutral energies, including various forms of biomasses, photovoltaic energy and fuel cell technology, while support government in the development in carbon capture and storage.
6. Enhance water saving and reliability of water supplies, targeting on 5.0 m<sup>3</sup>/tcs consumption (including cooling water for power plants), and further reduce fresh water consumption by using purified industrial effluent and sewage wastewater.
7. Continually reduce the pollutants of effluent and thereby minimize its load to nearby water body.
8. Improve the volume stability of BOF slag, and promote the revision of control standard for Cr<sup>3+</sup>, to allow reasonably reuse of BOF slag.
9. Assist satellite factories and downstream customers in their energy and environmental performances to reduce the environmental footprint of supply chain.

### 4.3 ENGAGEMENT IN SOCIAL HARMONY

1. CSC endeavors to take responsibility on reducing its environmental load and provide the neighborhood with a better living environment. CSC will also assist Kaohsiung City in its low carbon evolution.
2. Treat employees and suppliers fairly and nicely, and continue with the good interactions with CSC Labor Union.
3. Assist central and local governments to establish energy and environmental policies, regulations and mechanism so that they are aligned with global trend and local needs.
4. Actively participate in activities of domestic and international associations to enhance the knowledge and credibility of industrial sectors to participate in public affairs.
5. Care for vulnerable groups and aboriginal tribes in their life and culture; continue with the support to mobile libraries.
6. Support the activities of literature groups and vulnerable groups to enrich the cultural and literature flavor of Kaohsiung City.
7. Continue with public welfare services, including emergency assistance and reconstruction after natural disasters.
8. Continue to provide scholarships to local students and organizing activities such as Steel Journey and summer camps so that knowledge of steel production can be well extended.



## APPENDIX

### Appendix I: Global Reporting Initiative (GRI) Sustainability Reporting Guidelines G3.1 and its Content Index

⊙: Fully disclosed ○: Partially disclosed

| GRI Indicators |   | Status | Related CSC CSR Report Section | Explanatory Notes     |
|----------------|---|--------|--------------------------------|-----------------------|
| 1              | Strategy and Analysis   | ⊙      |                                |                       |
| 1.1            | Statement from the most senior decisionmaker of the organization about the relevance of sustainability to the organization and its strategy.  | ⊙      | Messages from Top Management   |                       |
| 1.2            | Description of key impacts, risks, and opportunities.   | ⊙      | 2.1.5 、 2.1.9 、 3.1.11         |                       |
| 2              | Organizational Profile  | ⊙      | Messages from Top Management   |                       |
| 2.1            | Name of the organization.   | ⊙      |                                |                       |
| 2.2            | Primary brands, products, and/or services.  | ⊙      | 1.1.1 、 1.1.2 、 3.1.1          |                       |
| 2.3            | Operational structure of the organization   | ⊙      | 2.1.3                          |                       |
| 2.4            | Location of organization's headquarters.  | ⊙      | 1.1.1 、 2.1.1                  |                       |
| 2.5            | Number of countries where the organization  | ⊙      | 1.1.1 、 1.3.2 、 2.1.1 、 3.1.10 |                       |
| 2.6            | Nature of ownership and legal form.   | ⊙      | 1.1.1 、 1.3.2                  |                       |
| 2.7            | Markets served  | ⊙      | 1.1.2 、 3.1.1                  |                       |
| 2.8            | Scale of the reporting organization   | ⊙      | 3.1.1 、 3.1.2 、 3.3.3 、 3.3.3  |                       |
| 2.9            | Significant changes during the reporting period   | ⊙      |                                |                       |
| 2.10           | Awards received in the reporting period   | ⊙      | Appendix II                    | No significant change |
| 3              | Report Parameters   |        |                                |                       |
| 3.1            | Reporting period  | ⊙      | 1.3.2                          |                       |
| 3.2            | Date of most recent previous report   | ⊙      | Messages from Top Management   |                       |
| 3.3            | Reporting cycle   | ⊙      | Messages from Top Management   | annual                |
| 3.4            | Contact point for questions regarding the report or its contents.   | ⊙      | Back Cover                     |                       |
| 3.5            | Process for defining report content   | ⊙      | 1.2.3 、 1.2.4                  |                       |
| 3.6            | Boundary of the report  | ⊙      | 1.3.2                          |                       |
| 3.7            | State any specific limitations on the scope or boundary of the report   | ⊙      | 1.5                            |                       |
| 3.8            | Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations. | ⊙      | 1.1.3 、 2.1.3                  |                       |
| 3.9            | Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.          | ⊙      | 1.3.3                          |                       |
| 3.10           | Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement  | ⊙      | Messages from Top Management   |                       |
| 3.11           | Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.   | ⊙      | Messages from Top Management   |                       |
| 3.12           | Table identifying the location of the Standard Disclosures in the report.   | ⊙      | Appendix I                     |                       |
| 3.13           | Policy and current practice with regard to seeking external assurance for the report.   | ⊙      | 1.4                            |                       |
| 4              | Governance, Commitments, and Engagement Governance  | ⊙      |                                |                       |
| 4.1            | Governance structure of the organization.   | ⊙      | 2.1.3                          |                       |
| 4.2            | Indicate whether the Chair of the highest governance body is also an executive officer  | ⊙      | 2.1.3                          |                       |
| 4.3            | For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members.                                   | ⊙      | 2.1.3                          |                       |
| 4.4            | Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.   | ⊙      | 1.2.3 、 2.1.6                  |                       |
| 4.5            | Linkage between compensation for members of the highest governance body, senior managers, and executives, and the organization's performance.   | ⊙      | 3.1.3                          |                       |
| 4.6            | Processes in place for the highest governance body to ensure conflicts of interest are avoided.   | ⊙      | 3.3.2                          |                       |
| 4.7            | Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees.  | ⊙      | 2.1.3                          |                       |

| GRI Indicators                              |  | Status | Related CSC CSR Report Section  | Explanatory Notes   |
|---|--|--------|---|---|
| 4.8   | Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.   | ⊙      | Messages from Top Management<br>1.2.2 、 2.2.1 、 2.3.1                         |   |
| 4.9   | Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles. | ⊙      | Messages from Top Management  |   |
| 4.10  | Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.  | ⊙      | 2.1 、 2.1.4 、 2.1.8 、 3.1 、 3.1.3 、 3.1.5                                     |   |
| 4.11  | Explanation of whether and how the precautionary approach or principle is addressed by the organization.   | ⊙      | 2.1.4 、 2.1.5 、 3.3.2   |   |
| 4.12  | Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.  | ⊙      | 3.2.6   |   |
| 4.13  | Memberships in associations (such as industry associations) and/or national/international advocacy organizations   | ⊙      | 2.1.10  |   |
| 4.14  | List of stakeholder groups engaged by the organization.  | ⊙      | 1.2.3   |   |
| 4.15  | Basis for identification and selection of stakeholders with whom to engage.  | ⊙      | 1.2.3   |   |
| 4.16  | Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.  | ⊙      | 1.2.3   |   |
| 4.17  | Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.  | ⊙      | 1.2.4   |   |
| <b>Economic Performance Indicators</b>      |  |        |   |   |
| EC1   | Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.  | ⊙      | 3.1.1 、 3.1.2 、 3.1.3 、 3.1.5 、 3.1.6 、 3.1.7 、 3.1.8 、 3.3.3 、 3.3.7         |   |
| EC2   | Financial implications and other risks and opportunities for the organization's activities due to climate change.  | ⊙      | 3.1.11 、 3.2.2 、 3.2.3 、 3.2.4 、 3.2.5  |   |
| EC3   | Coverage of the organization's defined benefit plan obligations.   | ⊙      | Messages from Top Management<br>1.2.2 、 2.3.1 、 3.2.8 、 3.3.2 、 3.3.6 、 3.3.7 |   |
| EC4   | Significant financial assistance received from government.   | ⊙      | 3.1.8   |   |
| EC5   | Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.   | ⊙      | 2.3.4 、 3.3.3   |   |
| EC6   | Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.  | ○      | 1.1.3 、 3.1.9   |   |
| EC7   | Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.  | ⊙      | 3.3.3   |   |
| EC8   | Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.   | ⊙      | 3.3.7   |   |
| EC9   | Understanding and describing significant indirect economic impacts, including the extent of impacts.   | ⊙      |   |   |
| <b>Environmental Performance Indicators</b> |  |        |   |   |
| EN1   | Materials used by weight or volume.  | ⊙      | 3.1.7   |   |
| EN2   | Percentage of materials used that are recycled input materials.  | ⊙      | 3.2.3   |   |
| EN3   | Direct energy consumption by primary energy source.  | ⊙      | 3.1.7   |   |
| EN4   | Indirect energy consumption by primary source.   | ⊙      | 3.1.7   |   |
| EN5   | Energy saved due to conservation and efficiency improvements.  | ⊙      | 3.2.3 、 3.2.4   |   |
| EN6   | Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.   | ⊙      | 3.2.2 、 3.2.3 、 3.2.4 、 3.2.6 、 3.2.8 、 4.2                                   |   |
| EN7   | Initiatives to reduce indirect energy consumption and reductions achieved.   | ⊙      | 3.2.3   |   |
| EN8   | Total water withdrawal by source.  | ⊙      | 3.2.3   |   |
| EN9   | Water sources significantly affected by withdrawal of water.   | ⊙      | 3.2.3   |   |
| EN10  | Percentage and total volume of water recycled and reused.  | ⊙      | 3.2.3   |   |
| EN11  | Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.   | ⊙      | 3.2.8   | Doesn't located at protected areas and areas of high biodiversity value outside protected areas |
| EN12  | Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.  | ⊙      | 3.2.8   | Doesn't located at areas of high biodiversity value outside protected areas                     |
| EN13  | Habitats protected or restored.  | ⊙      | 3.2.8   | Doesn't located at protected areas and areas of high biodiversity value outside protected areas |



| GRI Indicators  |  | Status | Related CSC CSR Report Section | Explanatory Notes   |
|---|--|--------|--------------------------------|---|
| EN14  | Strategies, current actions, and future plans for managing impacts on biodiversity.  | ⊙      | 3.2.8                          | Doesn't located at protected areas and areas of high biodiversity value outside protected areas |
| EN15  | Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.                                   | ⊙      | 3.2.8                          | Doesn't located at protected areas and areas of high biodiversity value outside protected areas |
| EN16  | Total direct and indirect greenhouse gas emissions by weight.  | ⊙      | 3.2.3                          |   |
| EN17  | Other relevant indirect greenhouse gas emissions by weight.  | ⊙      | 3.2.3                          |   |
| EN18  | Initiatives to reduce greenhouse gas emissions and reductions achieved.  | ⊙      | 3.2.3                          |   |
| EN19  | Emissions of ozone-depleting substances by weight.   | ⊙      | 3.2.3                          |   |
| EN20  | NO, SO, and other significant air emissions by type and weight.  | ⊙      | 3.2.3                          |   |
| EN21  | Total water discharge by quality and destination.  | ⊙      | 3.2.3                          |   |
| EN22  | Total weight of waste by type and disposal method.   | ⊙      | 3.2.3                          |   |
| EN23  | Total number and volume of significant spills.   | ⊙      | 3.2.3                          | No significant spill  |
| EN24  | Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention, and percentage of transported waste shipped internationally.   | ⊙      | 3.2.3                          |   |
| EN25  | Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff. | ⊙      | 3.2.3                          |   |
| EN26  | Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.   | ⊙      | 3.2.2 、 3.2.8                  |   |
| EN27  | Percentage of products sold and their packaging materials that are reclaimed by category.  | ⊙      | 3.2.3                          |   |
| EN28  | Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.  | ⊙      | 3.2.7                          |   |
| EN29  | Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.          | ⊙      | 3.2.3 、 3.2.8                  |   |
| EN30  | Total environmental protection expenditures and investments by type.   | ⊙      | 3.2.1                          |   |
| <b>Labor Practices and Decent Work Performance Indicators</b> |  |        |                                |   |
| LA1   | Total workforce by employment type, employment contract, and region, broken down by gender.  | ⊙      | 3.3.3                          |   |
| LA2   | Total number and rate of new employee hires and employee turnover by age group, gender, and region.  | ⊙      | 3.3.3                          |   |
| LA3   | Benefits provided to full-time employees that are not provided to temporary or parttime employees, by significant locations of operation.  | ⊙      | 3.3.5                          |   |
| LA4   | Percentage of employees covered by collective bargaining agreements.   |        | 3.3.3 、 3.3.5                  |   |
| LA5   | Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.  | ⊙      | 3.3.3                          |   |
| LA6   | Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.    | ⊙      | 2.3.2                          |   |
| LA7   | Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender.  | ⊙      | 3.3.1                          |   |
| LA8   | Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.        | ⊙      | 3.3.1                          |   |
| LA9   | Health and safety topics covered in formal agreements with trade unions.   | ⊙      | 3.3.5                          |   |
| LA10  | Percentage of employees covered by collective bargaining agreements.   | ⊙      | 3.3.4                          |   |
| LA11  | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.                               | ⊙      | 3.3.4                          |   |
| LA12  | Percentage of employees receiving regular performance and career development reviews, by gender.   | ⊙      | 3.3.4                          |   |
| LA13  | Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.      | ⊙      | 3.3.3                          |   |
| LA14  | Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.  | ⊙      | 3.1.7 、 3.3.3                  |   |
| LA15  | Return to work and retention rates after parental leave, by gender.  | ⊙      | 3.3.3                          |   |
| <b>Human Rights Performance Indicators</b>                    |  |        |                                |   |

| GRI Indicators                                       |  | Status | Related CSC CSR Report Section | Explanatory Notes  |
|--|--|--------|--------------------------------|--|
| HR1  | Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.                            | ⊙      | 3.2.2                          | Percentage is zero   |
| HR2  | Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening, and actions taken.   | ⊙      | 3.2.2                          |  |
| HR3  | Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.                                     | ⊙      | 3.3.3 、 3.3.4                  |  |
| HR4  | Total number of incidents of discrimination and corrective actions taken.  | ⊙      | 3.3.3                          | No incidents of discrimination   |
| HR5  | Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights. | ⊙      | 3.3.5                          |  |
| HR6  | Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.                               | ⊙      | 3.3.3                          | No child labor   |
| HR7  | Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.  | ⊙      | 3.3.3                          |  |
| HR8  | Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.  | ⊙      | 3.3.4                          |  |
| HR9  | Total number of incidents of violations involving rights of indigenous people and actions taken.   | ⊙      | 3.3.3                          | No violations involving rights of indigenous people and actions taken            |
| HR10   | Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.  | ⊙      | 3.3.3                          | No violations involving rights of indigenous people and actions taken            |
| HR11   | Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms.  | ⊙      | 3.3.3                          | No violations of human rights  |
| <b>Society Performance Indicators</b>                |  |        |                                |  |
| SO1  | Percentage of operations with implemented local community engagement, impact assessments, and development programs.  | ⊙      | 3.2.8                          |  |
| SO2  | Percentage and total number of business units analyzed for risks related to corruption.  | ⊙      | 3.3.2                          |  |
| SO3  | Percentage of employees trained in organization's anti-corruption policies and   | ⊙      | 3.3.2                          |  |
| SO4  | procedures.  | ⊙      | 3.3.2                          |  |
| SO5  | Actions taken in response to incidents of corruption.  | ⊙      | 3.3.7                          |  |
| SO6  | Public policy positions and participation in public policy development and lobbying.   | ⊙      | 3.3.2                          |  |
| SO7  | Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.   | ⊙      | 3.3.2                          |  |
| SO8  | Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes.   | ⊙      | 3.3.8                          |  |
| SO9  | Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.  | ⊙      | 1.1.3 、 3.2.8                  |  |
| SO10   | Operations with significant potential or actual negative impacts on local communities.   | ⊙      | 1.1.3 、 3.2.8                  |  |
| <b>Product Responsibility Performance Indicators</b> |  |        |                                |  |
| PR1  | Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.             | ⊙      | 3.2.2                          |  |
| PR2  | Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.                       | ⊙      | 3.3.8                          |  |
| PR3  | Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.  | ⊙      | 3.2.2                          |  |
| PR4  | Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.   | ⊙      | 3.3.8                          | no non-compliance with regulations   |
| PR5  | Practices related to customer satisfaction, including results of surveys measuring   | ⊙      | 2.1.12                         |  |
| PR6  | customer satisfaction.   | ⊙      | 3.3.3                          |  |
| PR7  | Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.   | ⊙      | 3.3.8                          | no non-compliance with laws, standards, and voluntary codes                      |
| PR8  | Total number of incidents of compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.                           | ⊙      | 2.1.8                          | no non-compliance with regulations   |
| PR9  | Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.   | ⊙      | 3.3.8                          | no complaints regarding breaches of customer privacy and losses of customer data |



## Appendix II: Awards Received Recent Years



### (1) Corporate Governance

2010

- 1 First prize of metal industry for 16 years in benchmarking corporate reputation survey of Common Wealth Magazine in 2010.
- 2 Ninth prize of "Top Ten Excellent Exporters/Importers in 2009"

2009

- 1 Commonwealth Magazine's "2009 Corporate Citizen Award"
- 2 "Industrial Innovation Achievement Award for Excellence in Science and Technology", presented at the 17th session by the Ministry of Economic Affairs.
- 3 VW Group's Best Supplier Award
- 4 "Certification of Taiwan Corporate Governance Association(TCGA), 3 years in a row, Assessment of the Listed Companies' Governance, the Fourth Session.
- 5 The 17th session Industrial Technology Advancement Award for Excellence.
- 6 Fourth prize of "Top Ten Excellent Exporters/Importers in 2008"

2008

- 1 "Annual World's Best Supplier Award in 2007" of the American General Motors
- 2 "The Listed Companies Governance Assessment Work at the Third Session ", rated A+ by Taiwan Corporate Governance Association(TCGA)
- 3 "The listed companies disclose information evaluation in 2007", was named Information Disclosure Evaluation A + rating at the Sixth session, and listed in the " Voluntary exposition information transparent "
- 4 "The gold trade Award of blue-chip companies of Top Ten Excellent Exporters/Importers in 2007" of Ministry of Economic Affairs, ranked sixth prize of blue-chip companies.
- 5 First prize in metal industry of "Taiwan's Most Admired Company in 2008" of CommonWealth magazine

### (2) Energy & Environmental Management

2010

- 1 Designated by Ministry of Economic Affairs as "The Only Expert Enterprise on Water-Saving."
- 2 Bureau of Energy, "Award of business representatives for Energy Conservation Services Group", by Ministry of Economic Affairs
- 3 Ministry of Economic Affairs select the power plants of CSC as especially superior power plant in 2010.
- 4 Ministry of Economic Affairs "The benchmarking enterprise with integrating resource."
- 5 "Award of outstanding unit on water-saving of industrial group" by Ministry of Economic Affairs.
- 6 The Premium Award of competition of "National Workplace Safety and Health Week " by Council of Labor Affairs

2009

- 1 CSC's Rolling Mill Department, "Award of Outstanding Unit on Water-Saving of Industrial Group and Individuals Who Care of Water", by Ministry of Economic Affairs
- 2 During the World Games held in Kaohsiung, CSC Suspend some Processes to Improve Local Air Quality.
- 3 Excellent Construction Site: The Development Projects of CSC's 3rd Cold-Rolling Mill.
- 4 Kaohsiung City issued the Award of "Blue Chip Jobsite of Fire Management ".
- 5 EPA issued "Outstanding Business Award of green procurement, 2008."

2008

- 1 CSC's Steelmaking Department, "Water Conservation Award for Outstanding Units" by Ministry of Economic Affairs
- 2 "ROC Enterprise Environmental Protection Award at the 17th session": Utilities Department
- 3 Counseling Evaluation Premium Prize on Pollution Prevention of Construction Project Site in Kaohsiung: The Construction of Headquarters Building of CSC Group
- 4 Green Label Stores: CSC Welfare Shop, reviewed by EPA and the Kaohsiung Environmental Protection Agency
- 5 Award of Environmental Corporate, at the 17th session, issued by Taiwan EPA
- 6 Blue Chip Companies of Energy Conservation and Greenhouse Gas Reduction, 2007, issued by Ministry of Economic Affairs
- 7 2nd Prize of the Blue Chip Company of Greening Zone at Industrial Area in 2008.
- 8 Outstanding Award for Water Conservation in 2008, awarded by Water Resources Agency



## INDEPENDENT ASSURANCE OPINION STATEMENT

### 2010 China Steel Corporation Social Responsibility Report

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

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

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 covers the whole report and focuses on systems and activities during the 2010 calendar year on the CSC headquarter and relevant operations in Taiwan.
2. The evaluation of the nature and extent of the CSC's adherence to all three AA1000 AccountAbility Principles in this report as conducted in accordance with type 1 of AA1000AS (2008) assurance engagement and therefore, the information/data disclosed in the report is not verified through the verification process.

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

#### Opinion Statement

We conclude that the 2010 CSC Corporate Social Responsibility Report review provides a fair view of the CSC CSR programmes and performances during 2010. We believe that the 2010 economic, social and environment performance indicators are fairly represented. The CSR performance indicators disclosed in the report demonstrate CSC's efforts recognized by its stakeholders.

Our work was carried out by a team of CSR report assurers in accordance with the AA1000 Assurance Standard (2008). We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that CSC's description of their approach to AA1000 Assurance Standard and their self-declaration of compliance with the GRI guidelines were fairly stated.

#### Methodology

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

- review of issues raised by external parties that could be relevant to CSC's policies to provide a check on the appropriateness of statements made in the report
- discussion with managers on CSC's approach to stakeholder engagement. However, we had no direct contact with external stakeholders.
- 6 interviews with staffs involved in sustainability management, report preparation and provision of report information were carried out.
- review of key organizational developments.



- review of the findings of internal audits.
- review of supporting evidence for claims made in the reports, and
- an assessment of the company's reporting and management processes concerning this reporting against the principles of Inclusivity, materiality and responsiveness as described in the AA1000 AccountAbility Principles Standard (2008).

### Conclusions

A detailed review against the AA1000 AccountAbility Principles of Inclusivity, Materiality and Responsiveness and the GRI G3.1 guidelines is set out below:

#### Inclusivity

This report has reflected a fact that CSC is seeking the engagement of its stakeholders. The participation of stakeholders has been initiated in developing and achieving an accountable and strategic response to sustainability. The reporting systems are being developed to deliver the required information. There are fair reporting and disclosures for economic, social and environmental information in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the CSC's inclusivity issues, however, the future report should be further enhanced by the following areas:

- Developing the organization-level social responsibility policies enable all employees to understand and follow.
- Conducting a formal stakeholder mapping process to strengthen the identification of the key concerns for each stakeholder group.

#### Materiality

CSC publishes sustainability information that enables its stakeholders to make informed judgments about the company's management and performance. In our professional opinion the report covers the CSC's material issues, however, the future report should be further enhanced by the following areas:

- Aligning priority to decision of materiality issues with business strategy.
- Publishing a written guideline for the methodology to identify and prioritize CSC's material issues to enable all departments to follow continuously.

#### Responsiveness

CSC has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for CSC is developed and provides the opportunity to further enhance CSC's responsiveness to stakeholder concerns. In our professional opinion the report covers the CSC's responsiveness issues, however, the future report should be further enhanced by the following areas:

- Assuring proactive responsiveness by identifying stakeholders and encouraging direct stakeholders' participation.
- Encouraging to work towards a Type 2 of AA1000AS (2008) engagement with a view to providing the reliability of sustainability performance information that stakeholder concerns.

#### GRI-reporting

CSC provided us with their self declaration of compliance within GRI G3.1 Guidelines and the classification to align with application level A+. Based on our review, we confirm that social responsibility and sustainable development indicators with reference to the GRI index are reported, partially reported or omitted. In our professional opinion the self declaration covers the CSC's social responsibility and sustainability issues, however, the future report will be improved by the following areas:

- Providing an infrastructure to systematically collect information for supporting their report including performance indicators.

#### Assurance level

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

#### Responsibility

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

#### Competency and Independence

The assurance team was composed of Lead auditors and Carbon Footprint Verifiers experienced in industrial sector, and trained in a range of sustainability, environmental and social standards including AA1000 AS, ISO14001, OHSAS18001, ISO14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.

For and on behalf of BSI:



Peter Pu  
Managing Director BSI Taiwan  
04 August, 2011



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