

China Steel Corporation

November 12th, 2019



Sustainability, our STEEL commitment.

<http://www.csc.com.tw/csc/hr/csr/index.htm>



- **Opening Remarks from Chairman**
- **Steel and Raw Material Dynamics**
- **Business Highlight**
- **Grasp the Trend, Win the Future -**
 - Electric Vehicle
 - Renewable energy
 - National Defense Industry
 - Industrial Upgrade
- **Appendixes: Sales Analysis,
Financial Performance and Dividend
Policy**

Safe Harbor Statement

This presentation may contains forward-looking statements. All statements other than historical and current fact, without limitation, including business outlook, predictions, estimates, are forward-looking statements.

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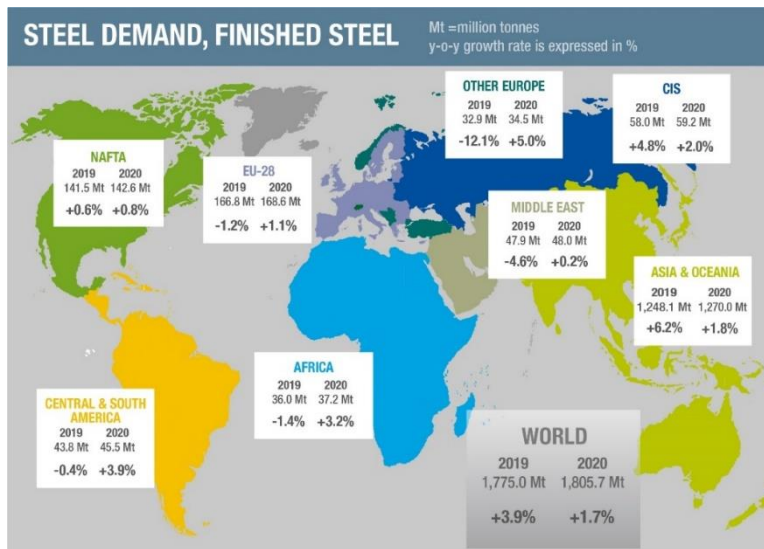


OPENING REMARKS FROM CHAIRMAN



worldsteel Revises up Steel Demand Outlook

- worldsteel has released the upward revision for the short range outlook of steel demand growth in 2019 from previous forecast 1.3% to **3.9%**, and 2020 from 1.0% to **1.7%**.
- Global steel demand continues to grow in 2019 mainly owing to China. China's real estate market reported strong performance, benefited from the relaxation of control policies and the newly implemented construction standards.



Source: worldsteel SRO, 2019.10.14

- Steel demand **keeps growing** for two years consecutively in North America, CIS and Asia .
- Steel demand in 2020 will **revive** in EU, Central & South America, Middle East and Africa.
- Steel market is at the bottom in 2019, and the outlook for 2020 is cautiously optimistic.



Top 10 Steel-Using Countries

TOP 10 (2015)	
Country	Steel demand [Mt]
China	672.3
United States	96.1
India	80.2
Japan	63.0
South Korea	55.8
Russia	39.8
Germany	39.1
Turkey	34.4
Mexico	24.9
Italy	24.5

TOP 10 (2020)	
Country	Steel demand [Mt]
China	909.1
India	108.7
United States	101.2
Japan	64.1
South Korea	54.2
Russia	43.9
Germany	37.8
Turkey	27.7
Italy	27.5
Vietnam	25.3

Source: worldsteel SRO, 2019.10.14

- India's steel demand will be **greater than that of the US** in 2020.
- **Vietnam will formally become one of the world largest steel-using countries.** Steel demand in 2020 will grow to **25.3 million MT.**
- Global manufacturing industry is gradually **transferring the supply chain to India and Vietnam** from China's red supply chain.



Global Steel Demand Will Keep Growing in 2020

- **Gradual recovery in three major steel using sectors in 2020 :**
 - **Construction:** Active infrastructure investment in emerging markets, such as ASEAN and India, will drive global steel demand.
 - **Automotive:** As many countries plan to introduce several tax cut policy and stimulus measure to boost sales, demand is expected to **bottom out** in major car consuming countries such as China, India, Russia and Germany.
 - **Mechanical machinery:** Infrastructure projects in developing countries will drive demand for construction and energy related machinery. The replacement demand for equipment will also provide support in 2020.

Source : worldsteel SRO, 2019.10.14



Steel Market Outlook in 2020

- **Almost all global steel mills were operated at break-even or at a loss in 2019 Q3 and will strive to stop loss.**
- **Deferring Q4 peak season demand and restocking demand in 2020 are expected to raise steel price.**
- **US-China trade war is easing. Weaker USD and stabilizing emerging currencies are benefit to the rebound of steel price.**
- **Blast furnace mills have started to cut production and steel price is bottoming out.**
- **US steel mills announced price increase of US\$40/st; less low-priced imports are offered from India and Russia; Steel price in China has rebounded.**
- **The return of Taiwanese companies will drive up steel demand for factory construction.**
- **Steel demand from green energy sector will be released in 2020.**
- **The auto and motor industry is expected to recover in 2020, and the rapid growth in EV will increase the demand of steel for electric motors and auto steel and aluminum material.**



STEEL AND RAW MATERIAL DYNAMICS



Major Steel Market Dynamics

- US & EU :

- ✓ Manufacturing sector are declining due to the economic downturn and rising uncertainties.
- ✓ In Germany, manufacturing industry has fallen into recession, especially the auto industry.
- ✓ Weak steel demand and lower-priced imports both make the steel market stressed further.



China : The social inventory stays at a healthy level, thanks to the support of domestic demand, especially the growth in construction sector.

- South Asia :

- ✓ India's steel export has increased due to economic slowdown and decline in automotive demand. In recent months, hot-rolled export per month surged to 600 thousand tons from the normal level of only 200 thousand tons.



Major Steel Market Dynamics

- Southeast Asia :

- ✓ Market price continues plunging due to fierce competition from Turkish and Indian-origin materials.
- ✓ The infrastructure investment is expected to keep growing in 2020 and stimulates the growth of steel demand after the effect from imports fades out.

- Taiwan :

- ✓ Taiwan's steel processing industry exports have declined and demand has decreased.
- ✓ Construction projects are projected to raise steel demand :
 - ◆ Public construction projects, such as offshore wind farm and Taoyuan Metro
 - ◆ Other major projects, such as Xinyi A7 (Taipei sky tower) and technology park factory buildings

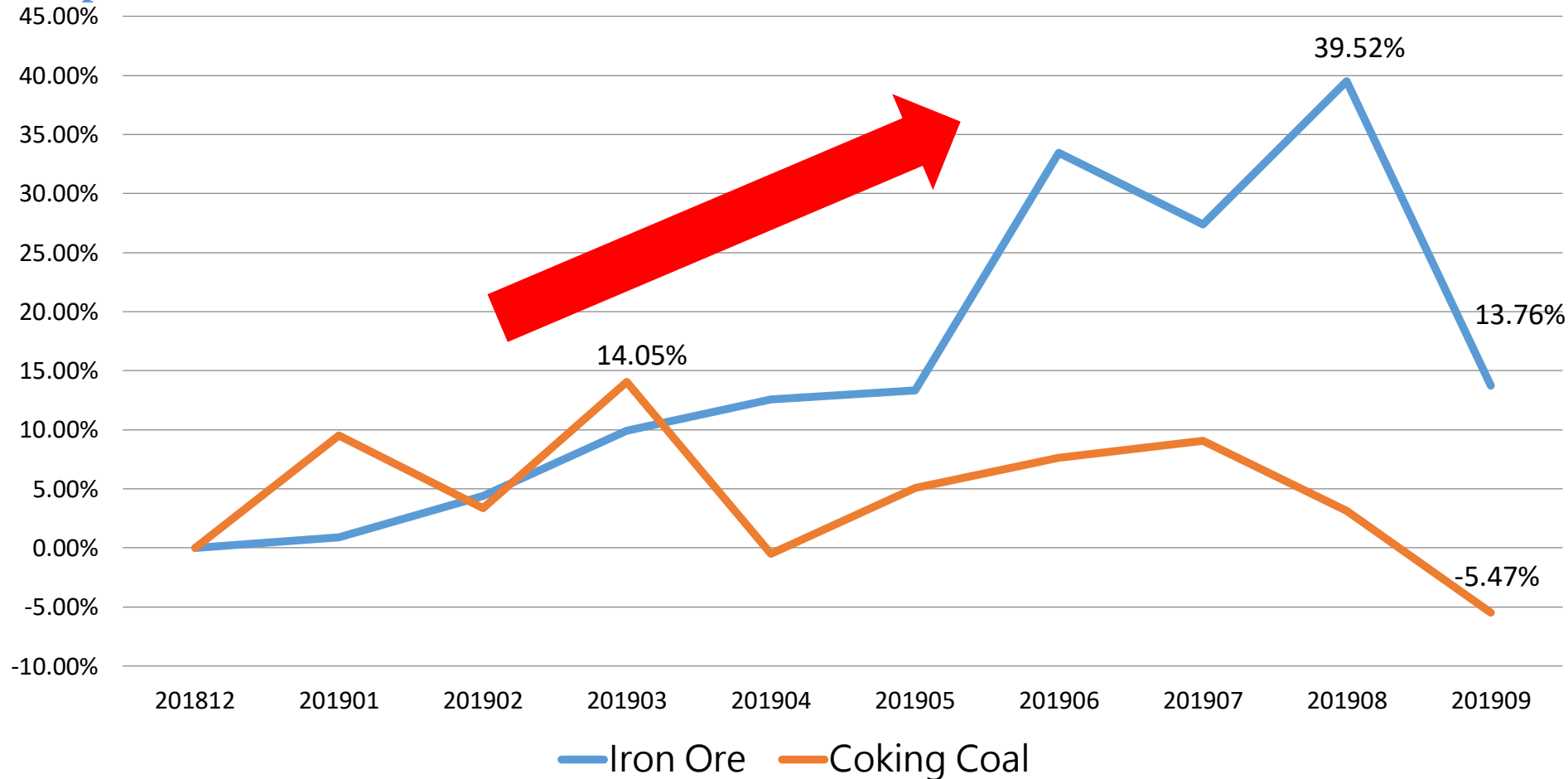




Raw Material Price Trend

Percentage change compared to Dec. 2018

CSC incoming raw material price trend

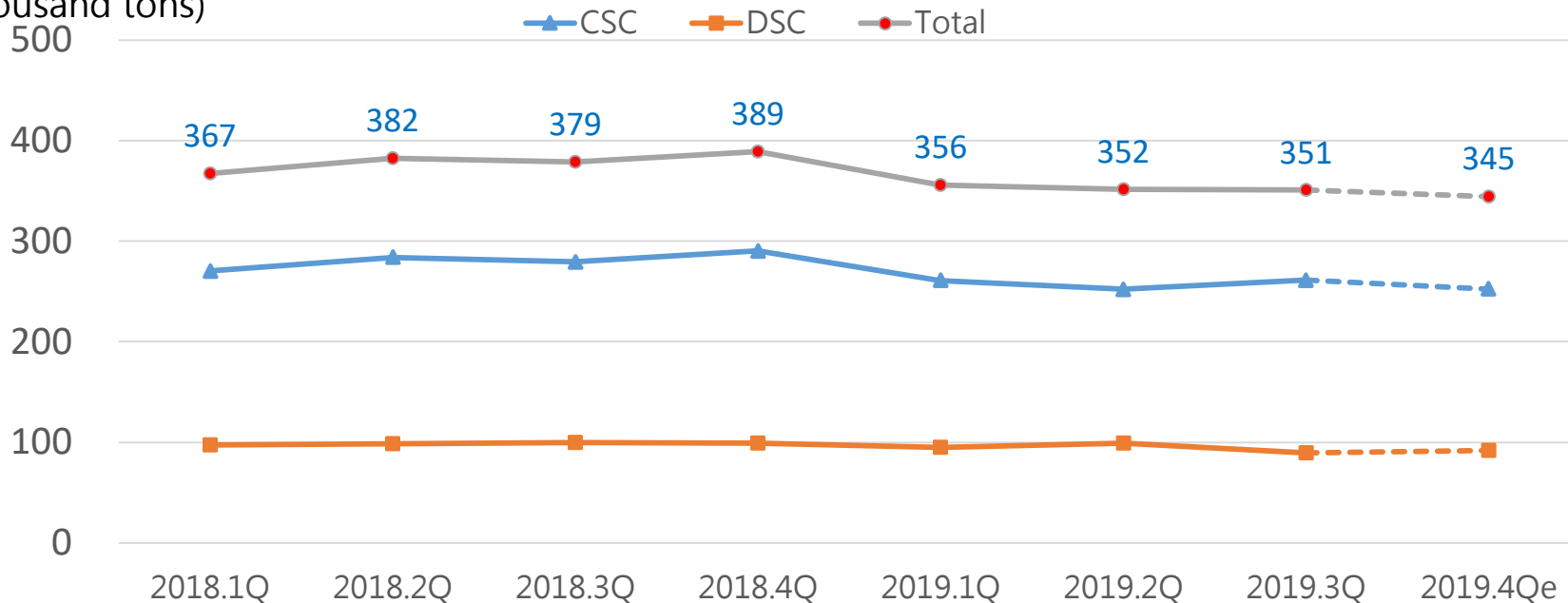




Sales Analysis (CSC & BF Products of DSC)

Sales volume
(10 thousand tons)

CSC & BF Products Sales Analysis



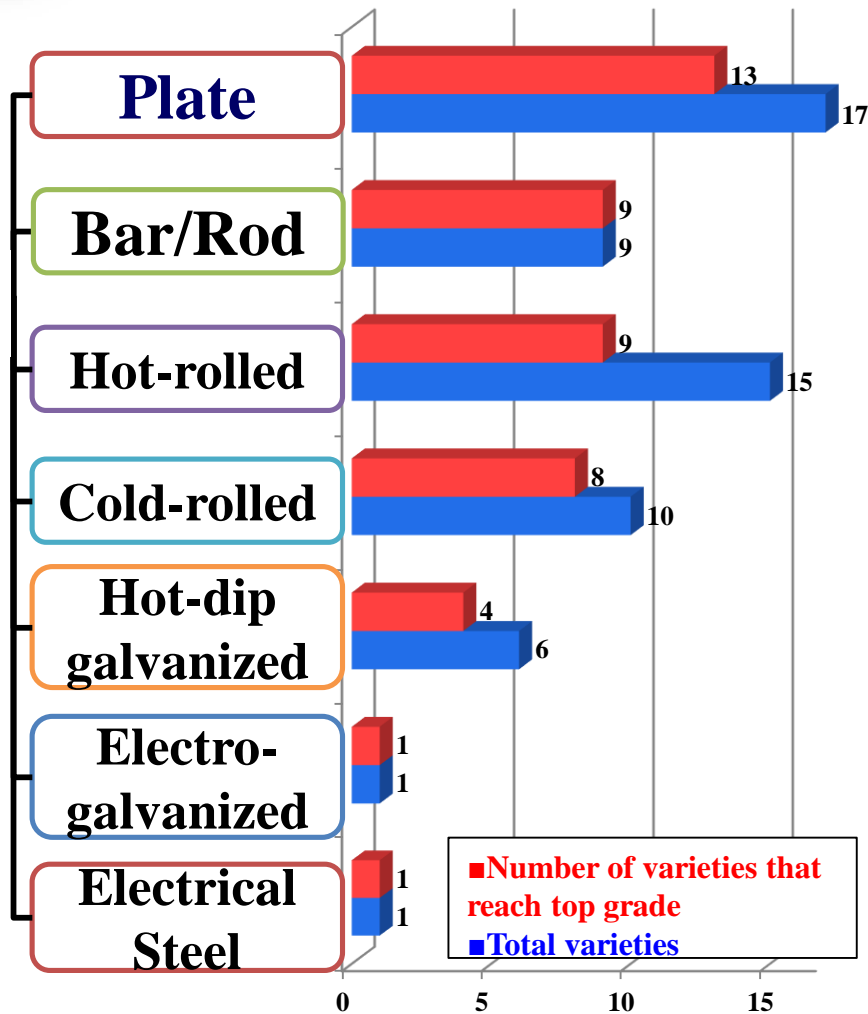
- **The global steel market has declined due to the US-China trade war in 2019. CSC group total orders have decreased accordingly.**
- **To adapt to market changes, CSC group will assist all downstream customers in increasing competitiveness.**



BUSINESS HIGHLIGHT



Wide Variety, High Grade, and Customization



- **59 varieties** in the 7 main product types, with **45 (76.3%)** reaching top grade or even higher
- Establish **metallurgical process dynamic control system** using smart production technology, which **customizes products** depending on customers' preference



Cost saving with scientific method

Raw Material

Use more lower cost materials

Localize materials

Product

Cut alloy usage

Substitute alloy

Optimize process

Downstream Application

Save process

Equipment

Stabilize equipment

Localize spare parts

Process

Improve efficiency and pass rate

Develop high efficiency process

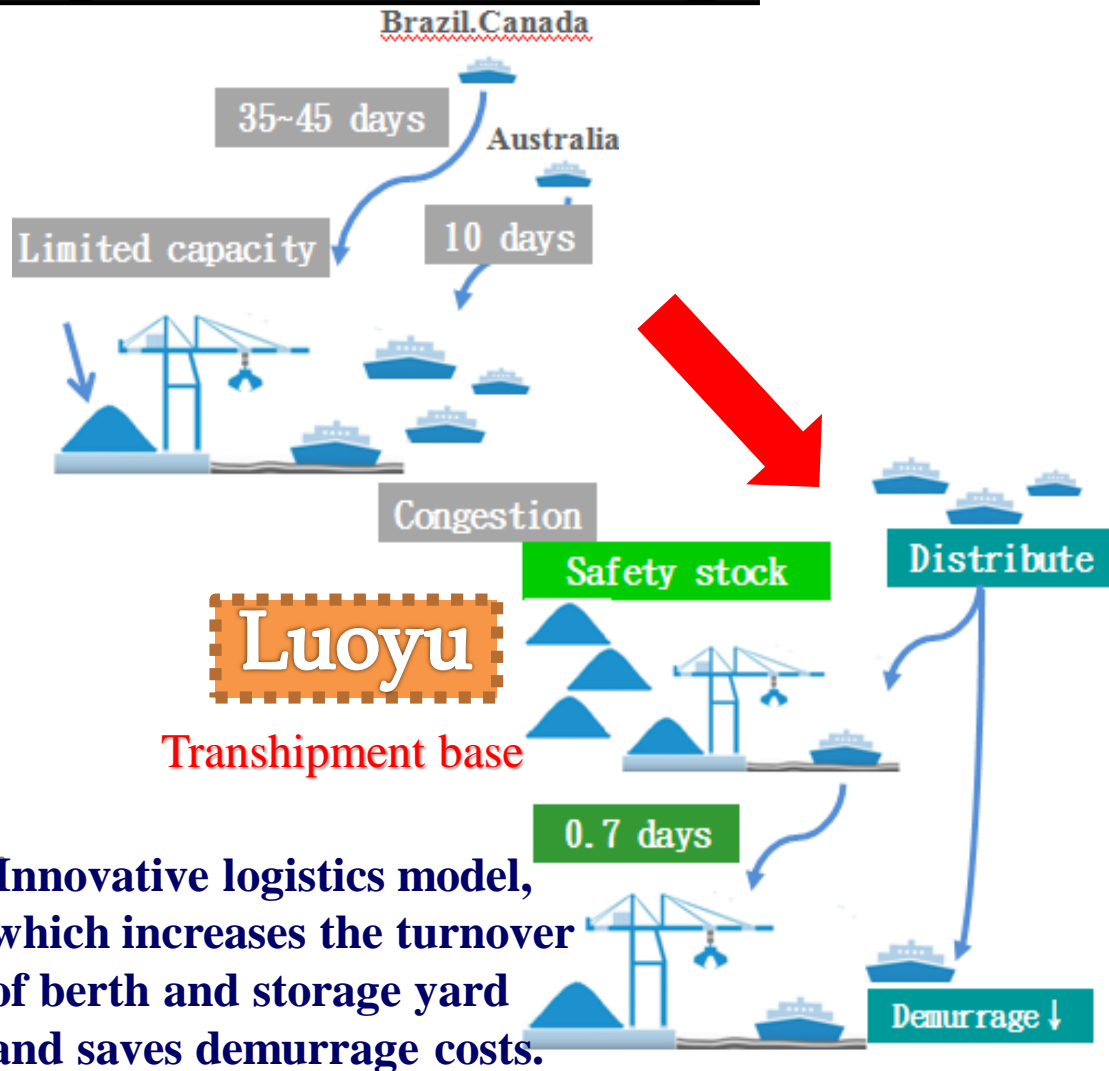
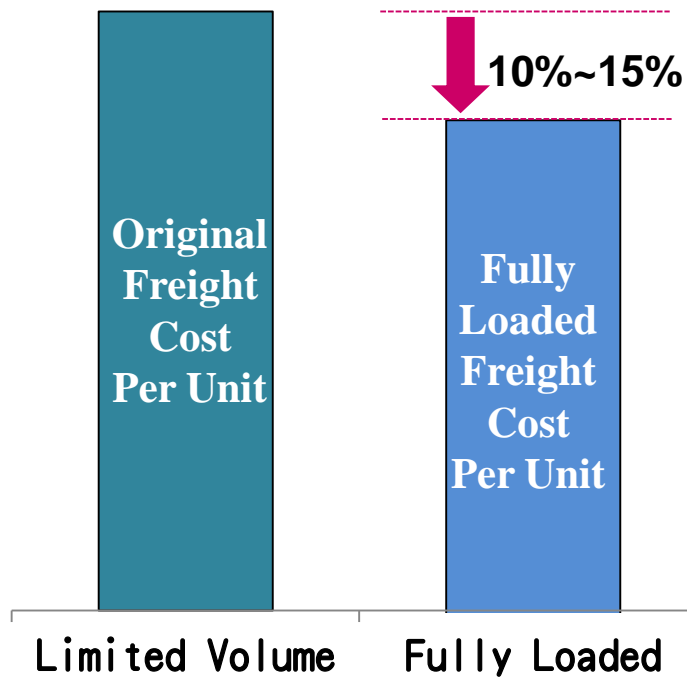
- In 2019, CSC promotes 418 cost saving projects aiming at saving 6.18 billion.



Innovative Transformation of Raw Material Shipment and Storage

Optimize vessel's capacity

Minimize freight costs

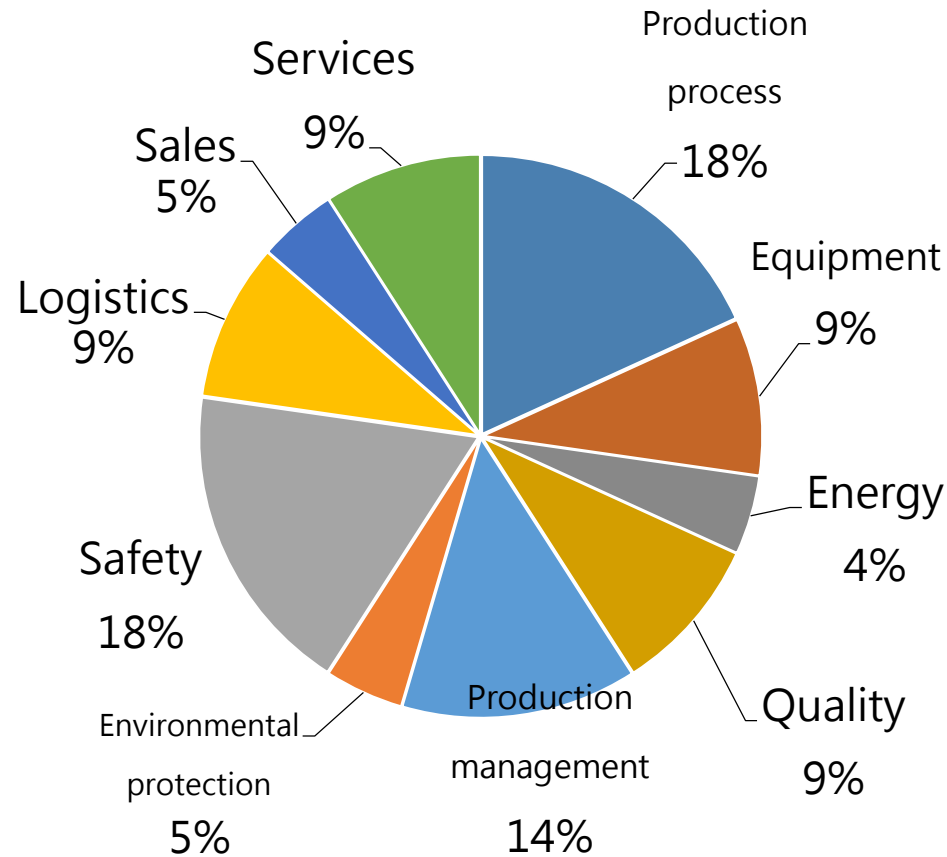


Innovative logistics model, which increases the turnover of berth and storage yard and saves demurrage costs.



Intelligentization Development

Use digital technology such as sensor, cloud, big data, AI, etc. on the establishment of intelligent system of production, production scheduling, equipment maintenance, logistics and storage, quality management, sales, finance and accounting, safety, and environmental protection so as to improve operational efficiency.



**Total benefit in 3 years:
NTD 276 million**



CSC Hot Strip Mill Intelligencization Progress

Intelligence

Integration

Instrument

Quality alert prediction system

Cross-process quality analysis system

Cloud Database and Intelligencization Application Module

Metallurgical process dynamic control system → reduce quality variation, increase production flexibility

Production process

Equipment

Quality

Process setting

Equipment monitoring and diagnosing

Quality inspection

Cross process

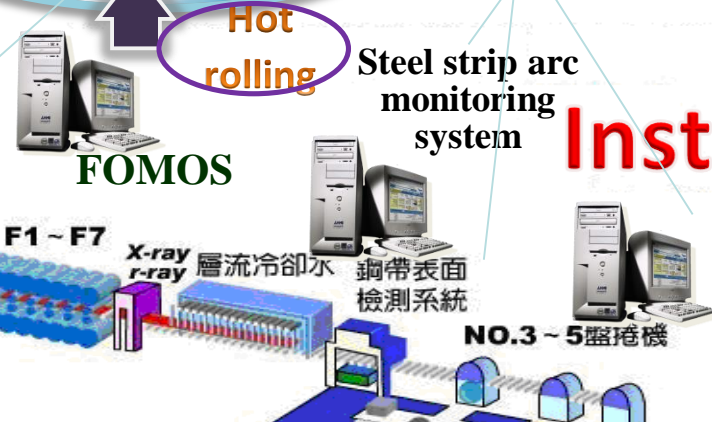
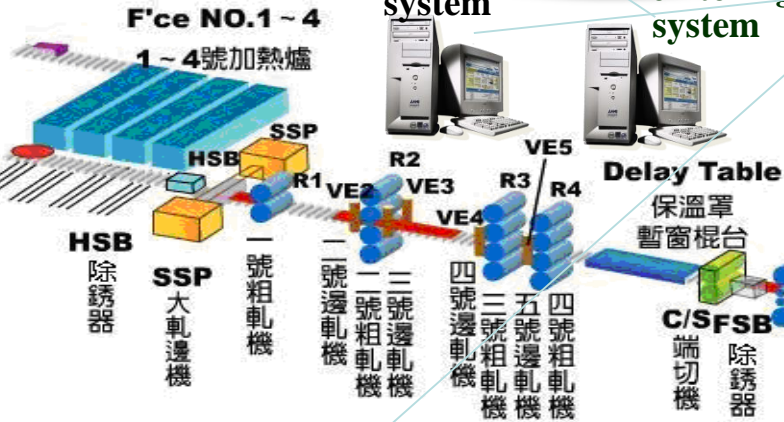
Cross process

Steelmaking

Cold rolling

Cross platform

Hot rolling





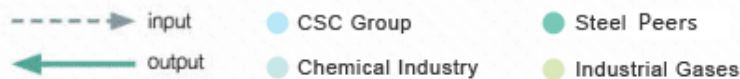
Energy Saving and Environmental Protection

Continue to carry out equipment inspections and approved several upgrade and environmental improvement plans to improve the production efficiency and environmental protection.

- As of the end of 2018, CSC has invested NTD 67.8 billion in environmental protection equipment. From 1992 to 2018, the emission of particles, SO_x, NO_x, and VOCs decreased by 89.7%, 76.6%, 56.2%, and 78.3% respectively.
- **Promote 5G strategy** (Green Processes, Green Products, Green Businesses, Green Partners, and Green Living), **fulfill the concept of circular economy and create external environmental protection benefit.**



District Energy Integration



input	
China Petrochemical Development Corp.	Waste fuel gas, H ₂ Condensate water
CPC Corp.	H ₂ , Fuel Oil, NG

output	
C.S. Aluminum Corp.	Steam, Ar, N ₂
Chung Hung Steel Corp.	Steam
China Steel Express Corp.	Shore electricity
China Steel Chemical Corp.	COG, N ₂ , PA Steam, DM Waer
Shang Chen Steel Co., Ltd.	Steam, N ₂
Taiwan Chlorine Industries Ltd.	Steam
CPC Corp.	Steam, N ₂
Tang Eng Iron Work Co., Ltd.	Steam, N ₂ , Ar, O ₂
Linde LienHwa Corp. / Air Products and Chemicals, Inc.	N ₂
China Petrochemical Development Corp.	Steam, N ₂
LCY Chemical Corp.	Steam, N ₂
Sheng Yu Steel Co., Ltd.	Steam

- Connect 14 plants in Kaohsiung Linhai Industrial Park, sell steam and industrial gases such as steam, oxygen and nitrogen, and create a **win-win situation for CSC, neighboring plants and environment.**
- In 2018, CSC sold **1.67 million tons** of steam, saving energy equivalent to 129,000 kL fuel oil and reducing 385,000 tons emission of GHG.



Strengthening R&D Capability

*Strengthening
R&D
Capability*

- ✓ Planning to recruit about 100 doctoral researchers personnel in the next few years
- ✓ Deepening **cooperation with academia and institutes to increase R&D efficiency by bringing in research resources**
- Establish **5 Engineering Research Centers (ERC)** in NTU, NCKU, NSYSU, NTUST and MIRDC; establish **5 Joint Research Laboratories (JRL)** in auto, compressor, and refractory industries; execute **2 phases of Industry and Academia Alliance** program.
- Engage with **Industrial Technology Research Institute (ITRI)**, through three **R&D platforms** in the fields of intelligent manufacturing, water resources and high-end metals.
- Deepen **basic capability**, cultivate **core technology**, and improve **competitiveness through differentiation**.



GRASP THE TREND, WIN THE FUTURE

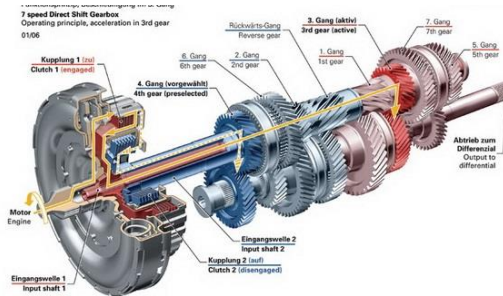
- Electric Vehicle
- Renewable energy
- National Defense Industry
- Industrial Upgrade



Penetration in the EV Industry

High Efficiency Power System

Drive Motor Transmission system



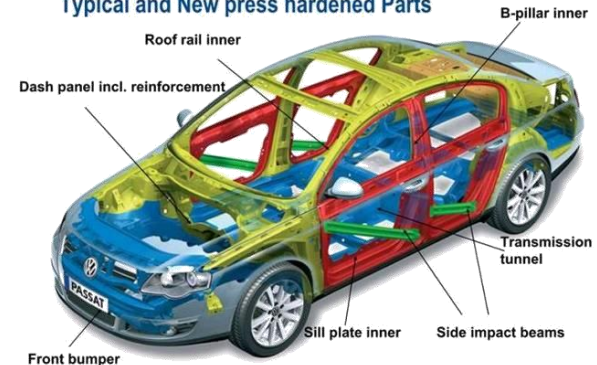
- ❑ Thin gauge ES
- ❑ Magnetic material

- ❑ High quality wire and rod products
- ❑ Precision forging technology

- ❑ High strength steel and aluminum : 3rd generation AHSS 、BH series 、High strength aluminum plate for automobile
- ❑ Advanced processing technology : the forming technology for high-strength steel & aluminum, and hot stamping

Lightweight Car Body to Save Energy

Typical and New press hardened Parts



- Develop **key materials** and build **CSC-inside** power systems of EV
- Exploit the advantage of our group **supply capability in both steel and aluminum material** and provide customers with **one-stop solution**.



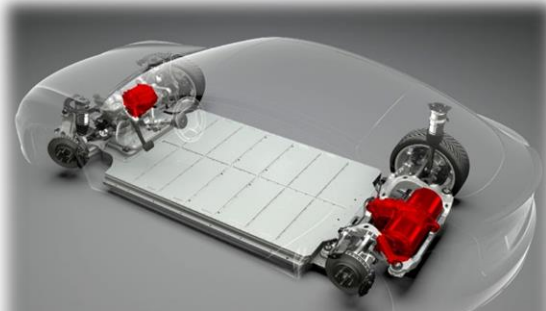
Electrical Steels for Motor of Electric Vehicle

Benefit

- CSC is the major ES supplier for T Company, a big EV manufacturer worldwide and also expanded into the supply chain of A Company and V Company in Europe. The sales volume is expected to keep growing.
- CSC has passed through material verification of four mainstream EV manufacturers in US, Japan and China, and is actively pursuing supply.
- Annual output value will reach NTD 5B in 2023 from current NTD 1.5B.



ES and Motor



Power System



Electric vehicle

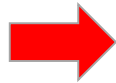


Innovative Process for Bake Hardening Steels

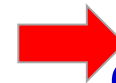
Innovative Process

- Intelligent metallurgy : Dynamic Adaptive Tuning with **AI, stabilizing quality.**
- Significantly improved yield, topped global peers

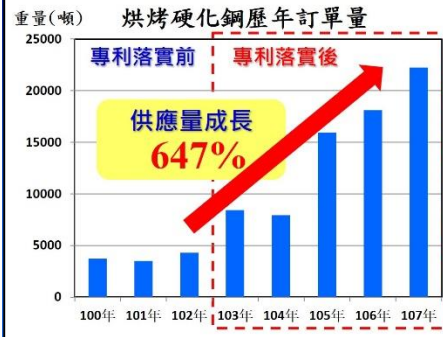
All series of 12 BH steels



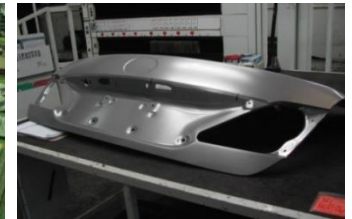
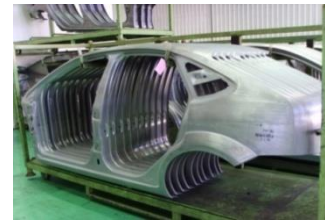
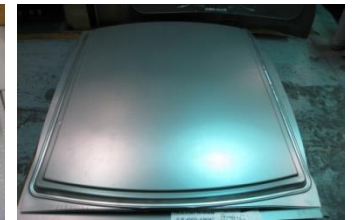
Order increased by 6.5 times



Revenues exceed NTD 2.06 billion



Application on auto parts, such as door / roof / hood / fender / bag-gage cover , etc.





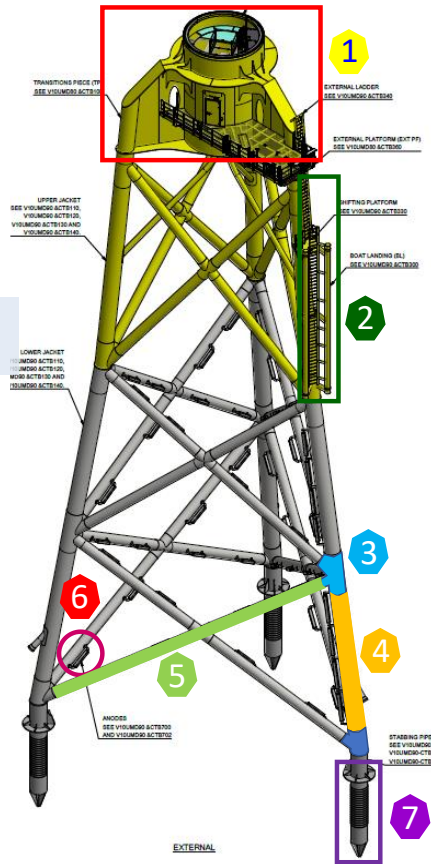
Development of Renewable Energy

Renewable energy is **the trend**, and is expected to **prosper** for over 20 years.





Foundation Business Opportunity











Components	Supply Chain	
	Tier1	Tier2
1 Transition Piece	CSBC, CSMC, CTCI	WanChi, Liang Lian
2 Secondary Steel	CSMC, CSSC	Chang Mao, Jin Qing, Heng Chang
3 Node	CSMC, CSSC	Heng Chang, Hi Weld, Sheng Chun, Bing Tsen, Jiun Chi
4 LEG	CSMC, WanChi, Rong Sheng, APEX	Chang Mao, CSBC Coating Solutions
5 Bracing	Far East Machinery, WanChi	-
6 Anode	CSAC · Fer Mo	-
7 Stabbing Pin	CSMC, CSSC	Chang Mao, Liang Lian, Bing Tsen, Bore Yuan
Total suppliers	10	10

- Invested NTD\$6.842 billion in the production line of foundation. To complete construction at the end of 2019.
- Establish a **fully localized emerging industry cluster**, from material to end product, to create **NTD 10 billion annual output value**.



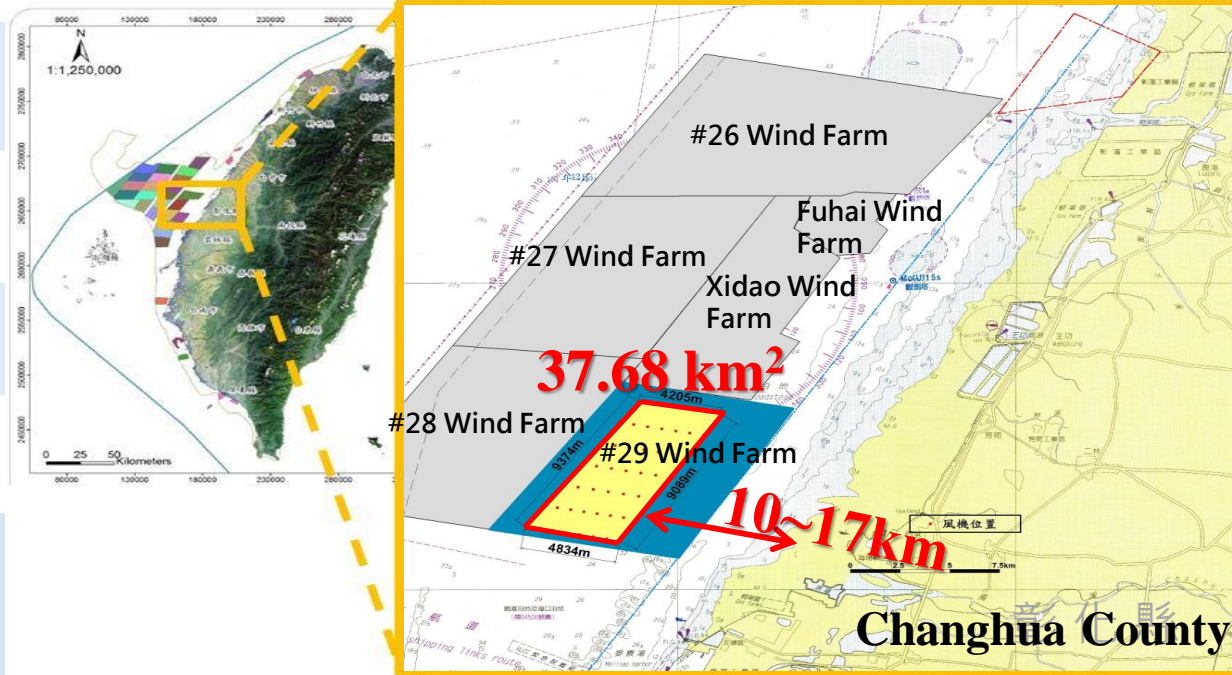
Business Vision of Jacket Foundations for Offshore Wind Farm

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Wind Farm Developer Grid Connection (Jacket Type)		CHW 01,02a 900MW 111sts 		Chang Fang 452MW 47sts 	Zhong Neng 300MW 31sts 	CHW 02b,04 920MW 97sts 	Phase III Zonal Development. Since 2026, MOEA will release 1GW/yr. Estimated 100sts/yr. *Assuming wind turbine generator capacity 10MW/unit.				
		Chang Fang 100MW 10sts 		Xidao 48MW 5sts 	TPC II 300MW 31sts 	Hai Long II, III 744MW 78sts 					
Market Target	SDMS is expected to produce and sell 18 sets in 2020, and upgrades to 50 sets per year in 2022.										



Offshore Wind Farm Development

Location	Off the coast of Changhua
Offshore Distance	10 ~ 17 km
Area	37.68 km ²
Depth	27 ~ 40 m
Annual Average Wind Speed	9.66 m/s



- #29 Wind Farm is close to the coast, at shallow water, with decent wind resources, and away from the fault and ecologically sensitive area.
 - ➔ **Easier construction and better operation outlook**
- Obtained preparatory permit and signed power purchase agreement, the wind farm is expected to **connect to the grid in 2024** and generate an estimated **115 million kwh** annual output, bringing in **NTD 6.34 billion** revenues annually.



Solar Power

CSC Solar Corporation

- Construction Plan : Invest NTD 4.36 billion in setting up **80MW** PV panels on the roof of factories in CSC group. **102 million kwh** annual output is expected.
- Holding percentage : CSC 55%, CEC 20%, CSCC 15%, DSC 10%

Year	2017	2018	2019	Total
Estimated Capacity Installed (MW)	30	30	20	80
Actual Capacity Installed (MW)	31.16	30.01	>20 (under construction)	>80 (under construction)
Electricity Output (100m kwh)	0.04	0.47	0.54 (until Sep.)	

- As of Sep. 2019, the **accumulated electricity output of solar power in CSC group reached 105 million kwh**. Carbon reduction reached 56 thousand tons, equivalent to the CO2 absorption of **140 Taipei Daan Park**.

(Estimated based on the 2018 Taipower electricity carbon emission factor, 0.533 kg CO2e/kwh)



Materials for National Defense



■ Plates for armored vehicle enable the founding of **Taiwan Infantry Fighting Vehicle** force.



■ Plates for submarine and naval vessel to support government's defense autonomy policy.



■ Key magnetic material for military radar.



Industrial Upgrade

Facilitating industry 4.0

- **Constructing industry cloud** to enhance cross-factory efficiency.
- Introducing **AI**-based production and marketing.

EVI-based Concurrent Engineering

Establishing **JRL** to **proceed overall researches** from materials to end products and **enhancing the effect of industry chain**.



Cultivating core technologies

Integrating the resources from government, academia and research institutes to **execute the collaborative programs** such as power system of EV.

Promoting industry service teams

Providing multi-program of process technology, quality control, logistics management, etc. to cultivate medium-sized enterprises

**Promoting Integrated Innovation
Facilitating Upgrade and Transformation**

Thank you!

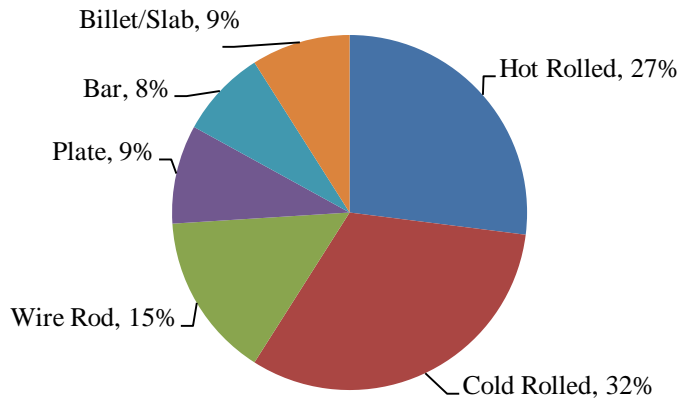


Appendix 1: Sales Analysis

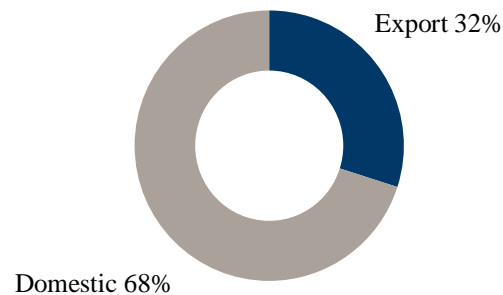
CSC Sales Analysis

CSC Group Domestic Market Share

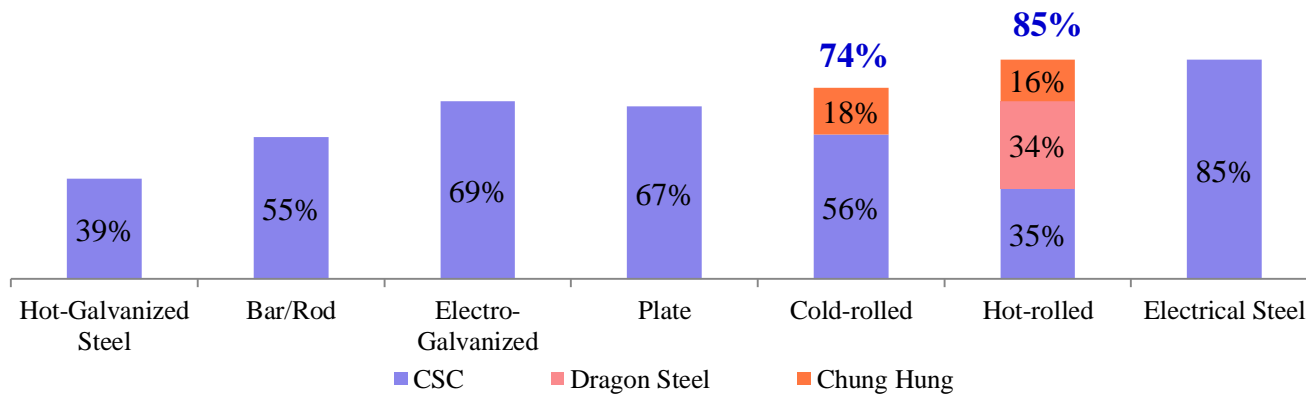
Steel Sales revenue breakdown by products (2019.1~3Q)



Domestic/Export by revenue (2019.1~3Q)



2019.1~3Q



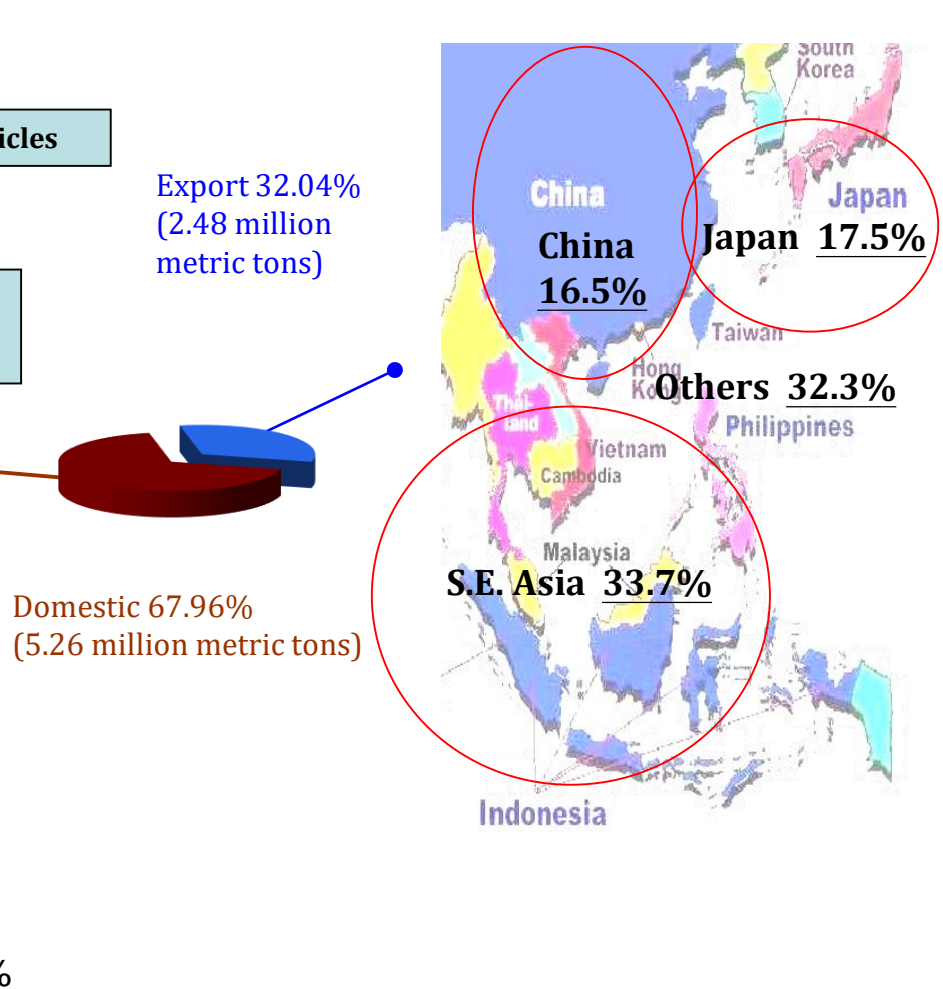
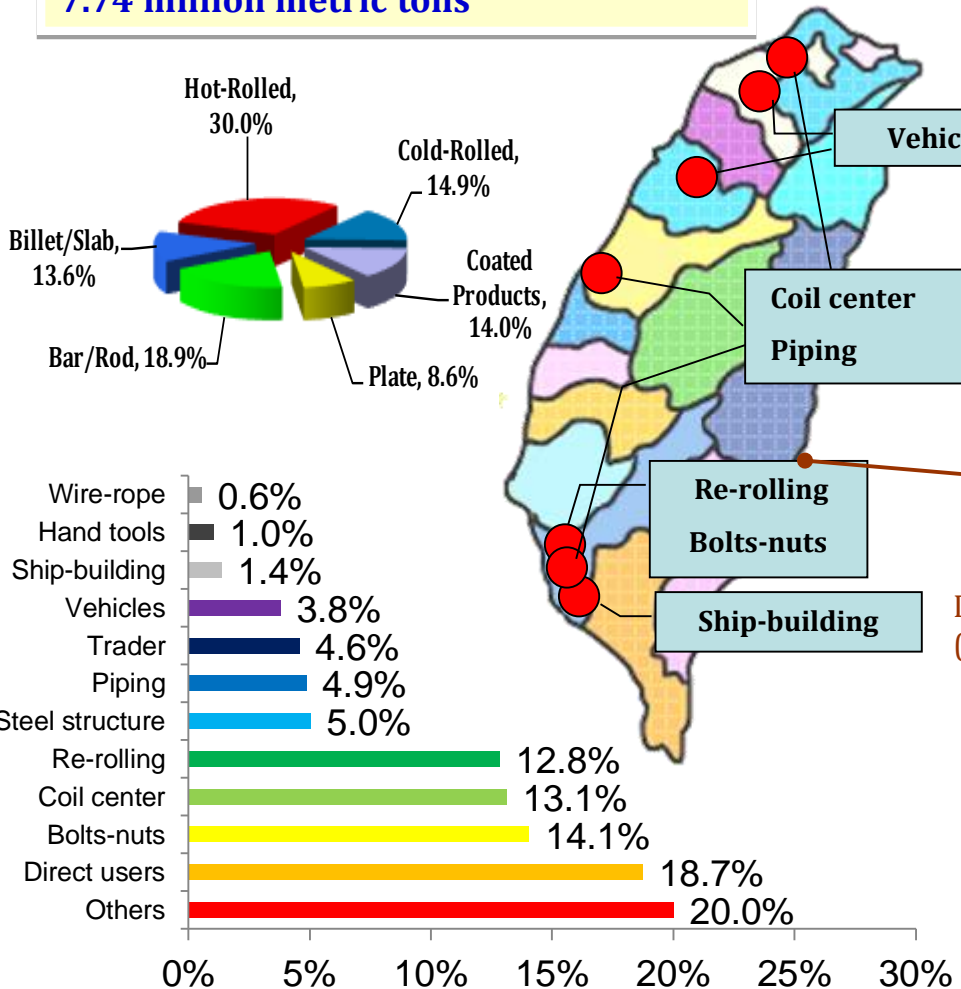


Appendix 2:

Sales Analysis (CSC standalone)

2019.1~3Q CSC sales volume totaled 7.74 million metric tons

Domestic/Export sales volume breakdown of 2019.1~3Q



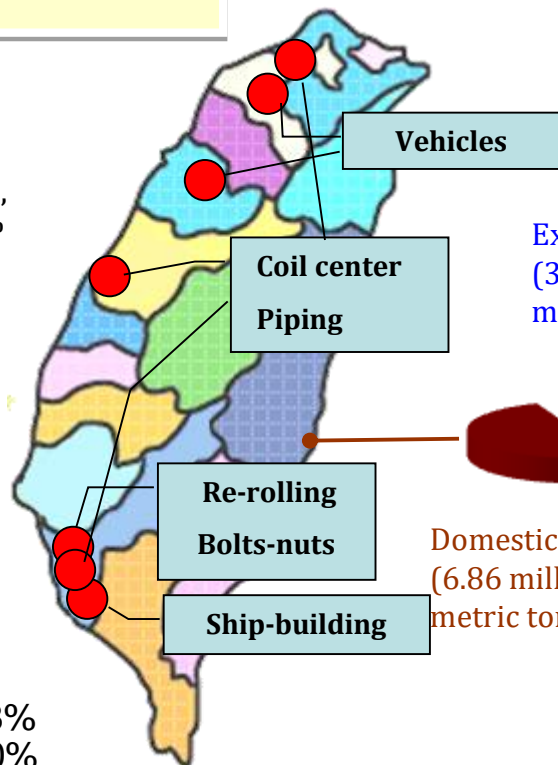
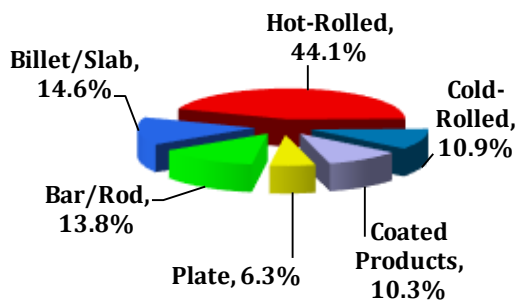


Appendix 3:

Sales Analysis (CSC & BF Products of DSC)

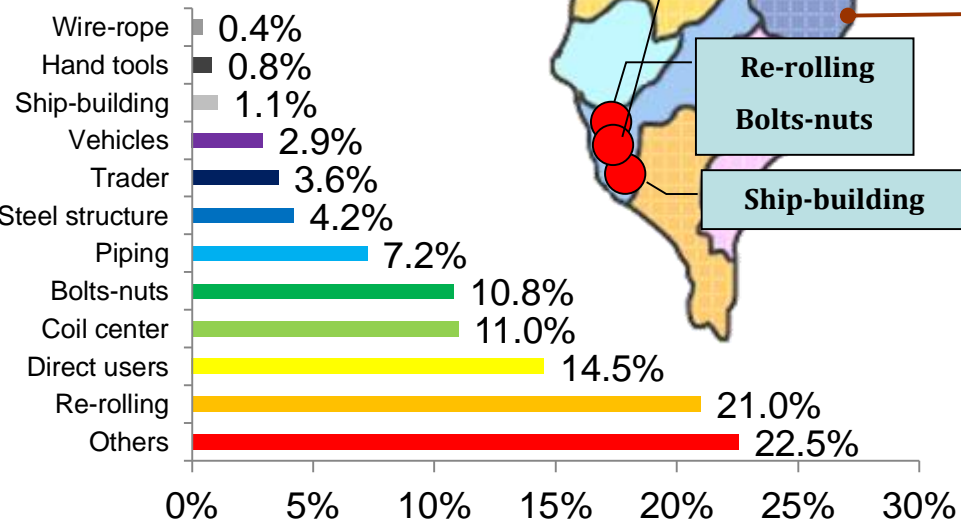
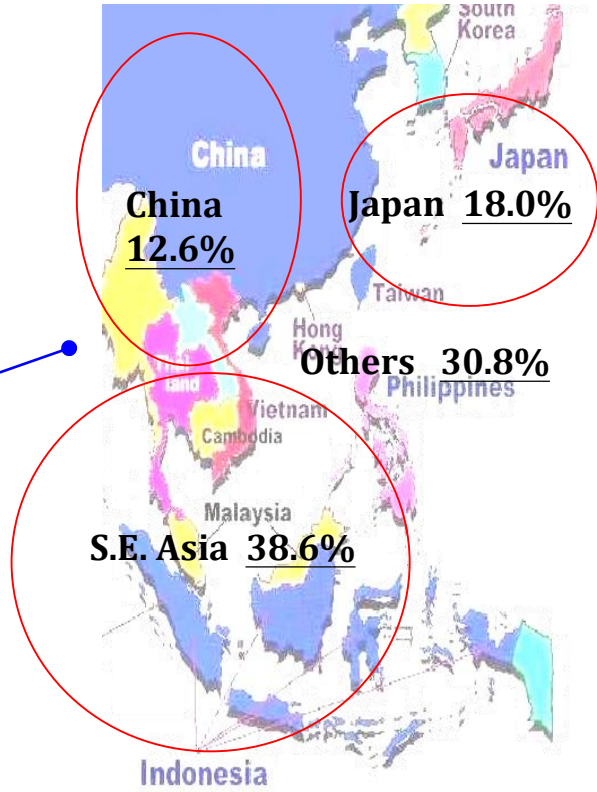
2019.1~3Q sales volume (CSC & BF products of DSC) totaled 10.58 million metric tons

Domestic/Export sales volume breakdown of 2019.1~3Q



Export 35.21%
(3.72 million metric tons)

Domestic 64.79%
(6.86 million metric tons)





Appendix 4: Consolidated Operating Results

Amount: NT\$ million

Item	*2019.1~9	2018.1~9
Consolidated Operating Revenue	281,806	296,446
Consolidated Operating Income	13,169	25,032
Consolidated Operating Income Margin	4.67%	8.44%
Consolidated Income Before Income Tax	13,617	23,594

*preliminary result



Appendix 5:

Consolidated Income Statement

IFRSs

Units: NT\$ millions

	2019.1H	2018.1H
Revenues	191,111	193,714
Gross profit	18,504	22,133
Gross margins	9.68%	11.43%
Profit before tax	10,528	13,880
<u>Net profit</u>	<u>8,378</u>	<u>13,053</u>
Attributable to		
Owners of the corporation	7,181	11,168
Non-controlling interests	1,197	1,885
Earnings Per Share(NTD)	\$ 0.46	\$0.72



Appendix 6: Consolidated Financial Status

Units: NT\$ millions

	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	6/30/2019
Debt	348,049	357,414	346,542	335,764	331,729	363,081
Debt/Equity	103.99%	111.44%	105.15%	101.15%	96.77%	107.11%
Asset	682,737	678,139	676,122	667,716	674,527	702,066
Debt/Asset	50.98%	52.71%	51.25%	50.29%	49.18%	51.72%
Net Debt *	250,540	269,034	254,390	238,426	212,949	205,484
Net Debt/Asset	46.88%	39.67%	37.62%	35.71%	31.57%	29.27%

* 2014~2017 :

Net debt = Interest Bearing Debt – cash & cash equivalents – (*financial assets at fair value through profit or loss-current*+ *available-for-sale financial assets-current* +*held-to-maturity financial assets-current*+ *derivative financial assets for hedging-current*)

* 2018~ :

Net debt = Interest Bearing Debt – cash & cash equivalents – (*financial assets at fair value through profit or loss-current*+ *financial assets at fair value through other comprehensive income-current*)



Appendix 7: Dividend Policy

(in NTD per share)

