



# CSC Group Joint Conference

November 22, 2024





# Agenda

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**01**

Steel & Raw Material  
Dynamics

**02**

Carbon Neutrality &  
Sustainable Development

**03**

CSC Operation and  
Development Strategies

**04**

Appendices

## 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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01

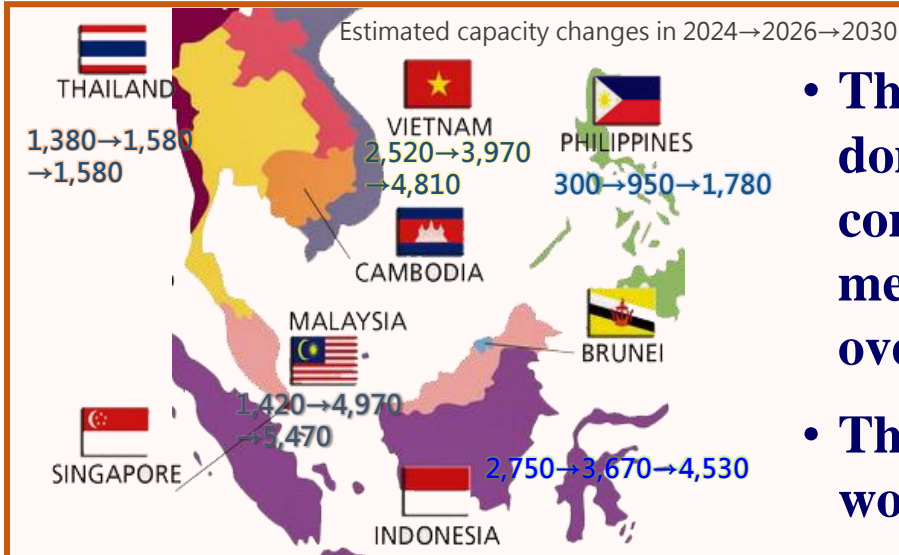
# Steel & Raw Material Dynamics

# 01 Global Steel Demand Improving

## Demand

- **The high-inflation and high interest rates environment has begun to cool down.** Governments around the world strengthen spending, and **construction industry has regained momentum.**
- The global economy (except China) has shown resilience, **with inflation weakening and government spending expanding** to support the economy.
- worldsteel expects global steel demand except China to increase by 10.8 million tons (+1.2%) and 29.3 million tons (+3.3%) in 2024 and 2025. Global steel demand in 2025 is estimated to be 1.772 billion tons in total, with a growth rate of 1.2%.

## Supply



- The Chinese government restricts the expansion of domestic crude steel capacity, but does not restrict the construction of downstream new production lines. To meet domestic downstream demand, steel mills turn to overseas investment.
- The expansion of crude steel capacity in ASEAN is worth further attention.

# 01 worldsteel Outlook

» worldsteel predicts global steel demand in 2024 to be **1.751 billion tons (YoY-0.9%)** and **1.772 billion tons in 2025 (YoY+1.2%)**, an increase of nearly 20.6 million tons compared to the demand in 2024.

## » 2024~2025 Outlook

### North America

Interest rate cuts boost the economy, public construction could resume after the general election, and it is expected to return growth in 2025.

### India & Southeast Asia

Infrastructure investment rise and foreign capital inflow, being the strongest driver of steel demand growth from 2024 to 2025.

### China

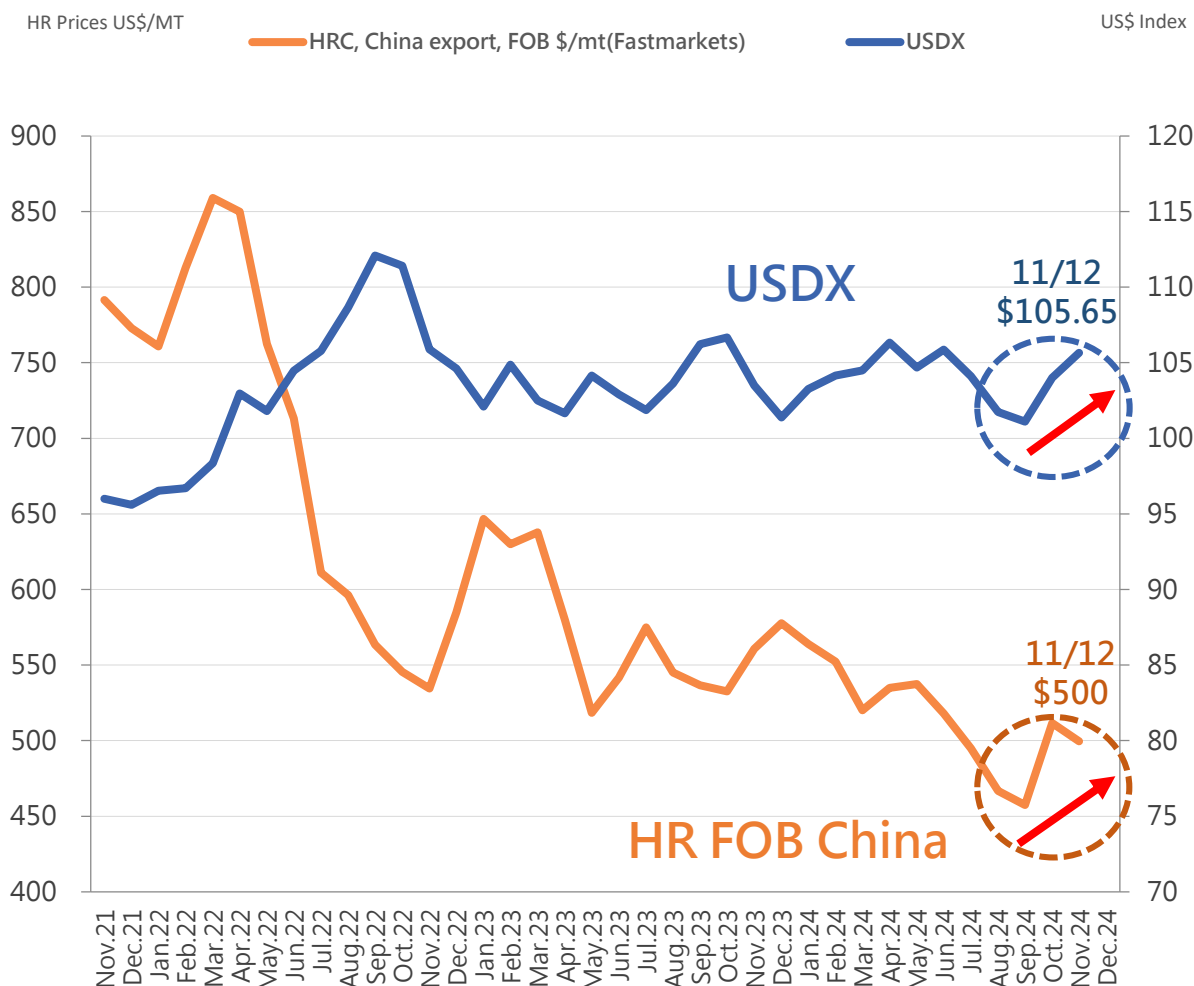
Though the housing market is at a low level, the momentum of specific steel consumption sectors remain positive, and the steel demand is expected to correct moderately.

### Europe

As the high interest rate environment fades, the manufacturing and construction sectors are expected to recover simultaneously.

worldsteel October 2024 SRO	Million tons			YoY (%)		
	2023	2024(f)	2025(f)	2023	2024(f)	2025(f)
European Union & United Kingdom	138.7	136.6	141.4	-8.7	-1.5	3.5
Other Europe	44.7	42.5	42.2	14.7	-5.0	-0.7
Russia & other CIS + Ukraine	60.3	60.5	60.0	11.5	0.3	-0.8
USMCA	132.5	131.3	133.4	-0.3	-0.9	1.6
Central & South America	45.7	45.6	47.8	1.0	-0.3	4.8
Africa	35.4	37.1	38.9	0.5	4.8	4.8
Middle East	54.2	56.9	58.7	4.2	4.9	3.3
Asia & Oceania	1,255.5	1,240.5	1,249.1	-1.2	-1.2	0.7
China	895.7	868.8	860.1	-3.3	-3.0	-1.0
Developed Asia	128.6	126.0	126.9	0.1	-2.0	0.7
Developing Asia excl. China	223.7	238.9	255.0	7.4	6.8	6.8
Global excl. China	871.3	882.1	911.4	2.0	1.2	3.3
Global	1,767.0	1,750.9	1,771.5	-0.8	-0.9	1.2

# China's Bullish Policies Boost Steel Prices and Offset the Effect of U.S. Dollar Appreciation



## Trump's victory in the election strengthened the U.S. dollar in the short term

- ✓ **Trump won the election. Policies of raising tariffs may cause inflation to rise again and put off Fed's interest rate cuts. However, resumption of public construction after the election is expected to drive demand.**
- ✓ **The USDX rose above 105 in the short term. But, Trump's dislike of a strong dollar and inflation suggest the market may see the U.S. dollar hit the peak.**



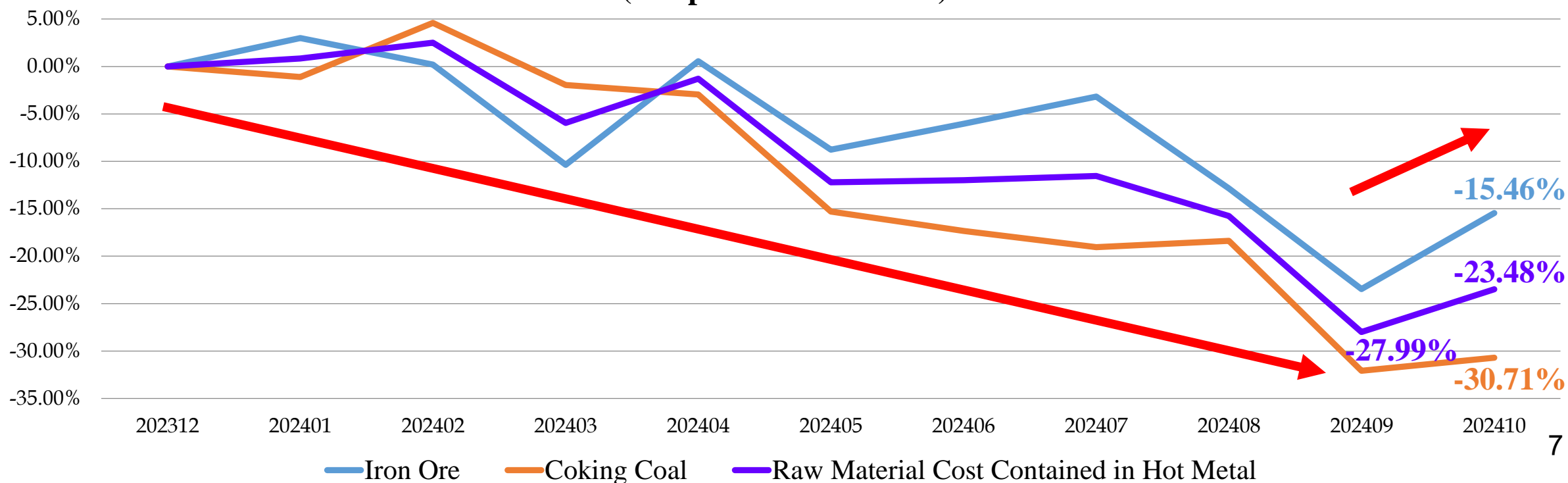
## Steel prices rebound

- ✓ **Although the trend of USDX and steel prices is negatively related, China's strong promotion of reserve requirement ratio cuts, interest rate cuts and preferential housing measures led to the rebound of the stock market, housing market and raw material prices, offsetting the curb on steel prices from the U.S. dollar appreciation.**
- ✓ **The market expects that the Chinese government will continue to promote major economic stimuli next year. If materialized, it will lend support to the uptrend of steel demand.**

# 01 Raw Material Trend - Iron Ore & Coking Coal

- Steel prices have rebounded from Q4 2023, driving up demand for raw materials. Together with the disruption of coking coal supply in Q1, the quarterly average prices of coking coal and iron ore had been pushed up.
- Starting from Q2 2024, the ample spot supply of Australian coking coal and the lack of procurement momentum have depressed the coking coal prices to a new low in more than three years; For iron ore, the prices retreated gradually from a high level as China's crude steel output started to decline from July and the government's revitalization measures fell short of expectation.
- Recently, China's stimulus policies have boosted optimism and trading activities have picked up, bringing the spot prices of coking coal and iron ore to rebound from the lows.

Percentage change of incoming raw material price  
(compared to Dec. 2023)





# 01 Steel Market Outlook – Positive Signal Appears

## The U.S. and Europe steel prices rangebound

The U.S. and European steel mills have a clear stand on price increases and have raised flat prices in succession. However, the price increases has not been fully materialized as a result of sluggish end-market demand and poor market conditions in the European automotive industry.

## The global manufacturing industry is slowly recovering

China's manufacturing PMI has returned to the expansion range thanks to favorable policies. However, major economies such as the U.S. and Europe are still in the contraction range, and the recovery momentum of the manufacturing industry is sluggish.

## China has continuously promoted bullish policies

China's strong promotion of reserve requirement ratio cuts, interest rate cuts and preferential housing measures led to the rebound of the stock market, housing market and raw material prices. **It lends support to the recovery in steel demand, and helps the steel market return to a balanced state.**



## Trump is back, trade protectionism may resurge

The U.S. may raise tariffs, increasing the threshold for Asian steel sales to the U.S. However, if local demand is boosted, U.S. steel prices will rise strongly. While China's sales to the U.S. may be restricted, some downstream steel products may benefit.

## Trade barriers defend against low-priced imports

Vietnam, Turkey and Brazil have filed AD on Chinese HRC. The global trend to defend against Chinese steel products has become clear, **limiting the pressure from China's low-priced steel products on the market.**

## The U.S. Fed starts rate-cutting cycle

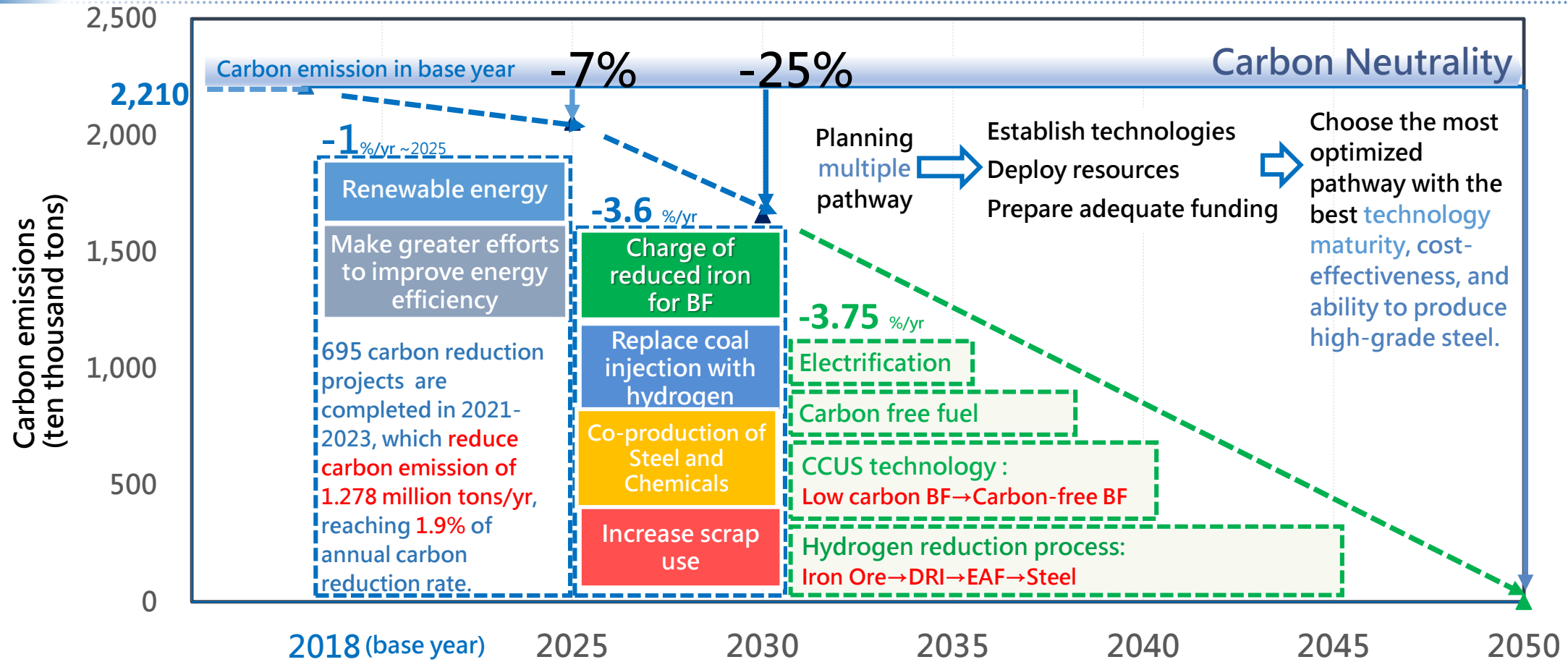
**The Fed has already cut interest rates by 75 basis points this year, and there will likely be additional cuts before the end of this year.** The boosting effect of interest rate cuts on the demand side is **expected to gradually emerge next year.**

✓ Interest rate cuts will boost demand    ✓ China's bullish policies will help the steel market bottom out

02

# Carbon Neutrality & Sustainable Development

## 02 Short Term Carbon Reduction & Medium and Long Term Carbon Neutrality Pathway



### Renewable Energy

In **2023**, a total of **28.81 million kWh green electricity** (28,793 renewable energy certificates) were obtained, significantly increasing the proportion of renewable energy usage compared to 2022.

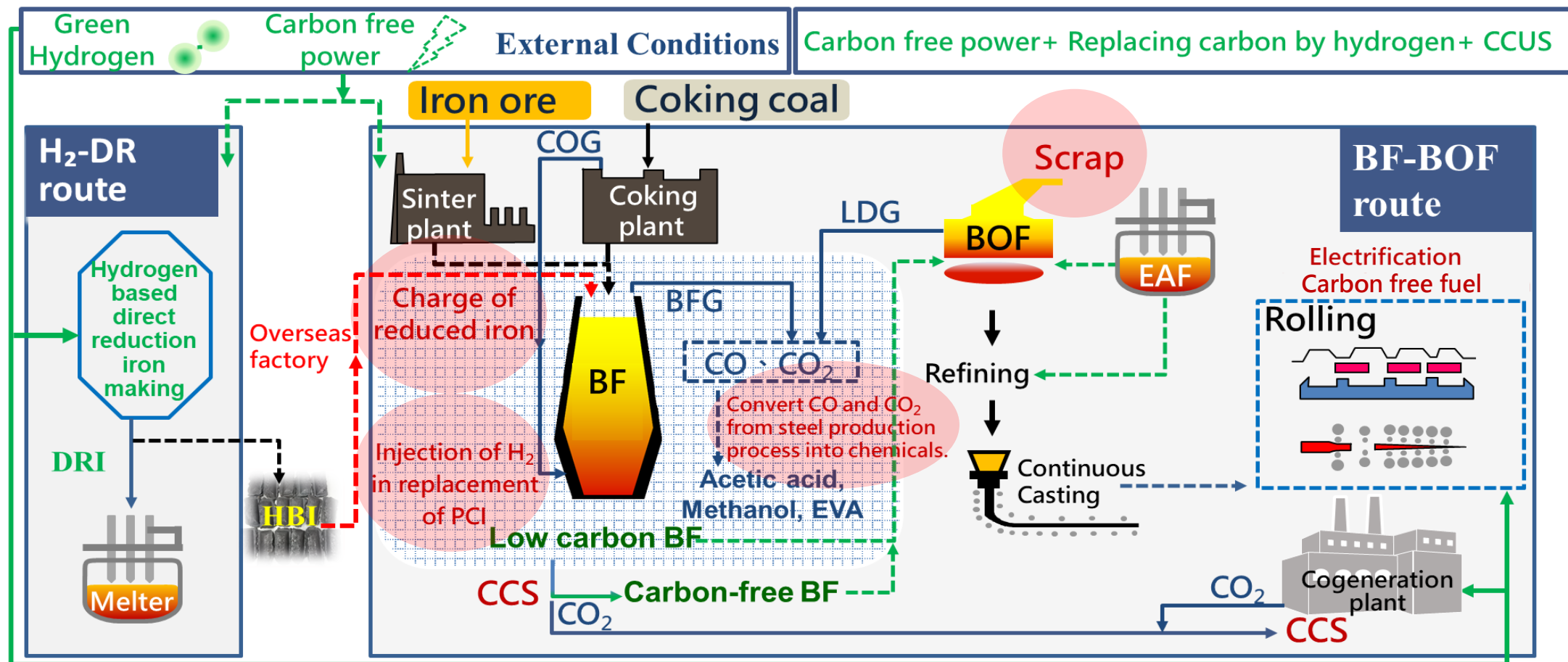
### Improve Energy Efficiency

In 2023, a total of **358 energy-saving projects** were completed, saving a total of 3.264 million GJ, **reducing carbon emissions by 368,000 tons CO<sub>2</sub>e and saving energy costs by NT\$ 1.81 billion.**

### Mid-term strategies

**The four technologies** have been **continuously developed and put into testing**. Progress is tracked in the Task Force on Energy Saving & Carbon Reduction and Carbon Neutrality quarterly and regularly reported to the Board.

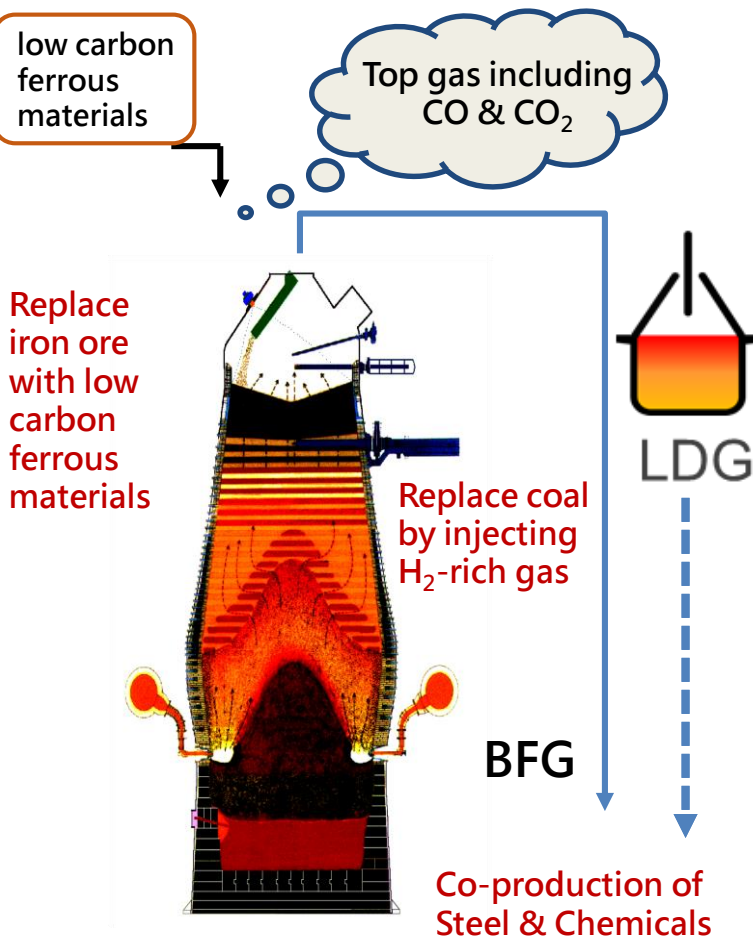
## 02 Carbon Neutrality Pathway



- The medium- to long-term strategies will face the challenges of technology, resources, and capital, resulting from the lack of mature technology and green hydrogen resources, as well as the required equipment modification.
- By 2030, it's planned to gradually invest in four medium-term strategies: **charge of reduced iron for BF, replace coal injection with hydrogen, co-production of steel and chemicals, and increase scrap use.**



# 02 Low-Carbon BF Iron Making Technology Development



## Research field:

1. Replace iron ore with low carbon ferrous materials: fabrication patterns research, softening and melting properties in BF, and energy and mass balance analysis.
2. Replace coal by injecting H<sub>2</sub>-rich gas: nozzle design, raceway zone simulation, combustion simulation, BF flow field analysis.
3. Capture and purify top gas: capture, separate, and purify.

R&D Topics	Replace iron ore with low carbon ferrous materials	Injecting H <sub>2</sub> -rich gas in BF	Co-production of Steel & Chemicals
	CO <sub>2</sub> reduction calculation and cost analysis	H <sub>2</sub> -rich gas safety spray technology and combustion simulation analysis	Process by-product gas and tail gas CO <sub>2</sub> capture and purification technology
	Energy and mass balance, and thermal flow field analysis	Raceway zone behavior simulation analysis	
	Transportation, distribution of materials on BF top, and movement patterns in BF	H <sub>2</sub> -rich gas combustion simulation testing technology	
	Softening and melting properties of iron-containing raw materials	Thermodynamic analysis of indirect reduction of iron ore under different H <sub>2</sub> /CO	Development of carbon cycle transformation chemical technology
	BF top reaction characteristics investigation of iron-containing raw materials	Thermodynamic experiment of indirect reduction of iron ore under different H <sub>2</sub> /CO	
	Experiment and analysis of the reaction characteristics of different iron ores under hydrogen reduction	BF hearth and overall flow field analysis under hydrogen-rich condition	

- Charging low carbon ferrous materials: Examine the softening and melting properties of different low carbon iron-containing raw materials, providing a reference for charging reduced iron.
- Injecting H<sub>2</sub>-rich gas: Analyze the impact of H<sub>2</sub>-rich gas injection on the BF, providing a reference for CSC's H<sub>2</sub>-rich gas injection test.
- Capturing and purifying top gas: Design various CO<sub>2</sub> separation and purification units and layout, providing a reference for the process design of carbon capture in CSC.

# 02 Four Medium Term Low-carbon Technologies Development

low carbon ferrous materials

Top gas including CO & CO<sub>2</sub>

Replace iron ore with low carbon ferrous materials

Replace coal by injecting H<sub>2</sub>-rich gas

BFG

Co-production of Steel & Chemicals

LDG

Charge of low carbon ferrous materials

Injection of Hydrogen-rich gas in BF

Co-production of Steel & Chemicals

Increase scrap use

- ❑ **Charge of low carbon ferrous materials:** The HBI charging test was completed in 2023. It shows that adding 1 ton of HBI can reduce CO<sub>2</sub>e by 1.5 tons, and the maximum fuel rate reduction is 12.4%; **Test of charging high ratio pellet in BF** has begun in 2024.
- ❑ **Injection of Hydrogen-rich gas in BF:** The **single tuyere injection test** was started in February 2024 at #1 BF.
- ❑ **Co-production of Steel & Chemicals:** The pilot line was completed in September 2022 and energy-saving production technology has been established. **The carbon capture energy consumption has been reduced by 18%.** It is expected that NT\$ 55 million will be invested in equipment renovation and R&D improvements in 2025.
- ❑ **Increase scrap use:** Developed the hot-dip galvanized steel products **with** 12%, 20%, 40% and **60% scrap used** and electro-galvanized steel products with 12% and 20% scrap used, and **obtained certification.**



CO<sub>2</sub> emissions reduction potential

(by 2050)

Total: 6.58 MT

Charge of low carbon ferrous materials

1.4 MT

CO<sub>2</sub>e

Injection of Hydrogen-rich Gas in BF

42 kT

CO<sub>2</sub>e

Co-production of Steel and Chemicals

2.9 MT

CO<sub>2</sub>e

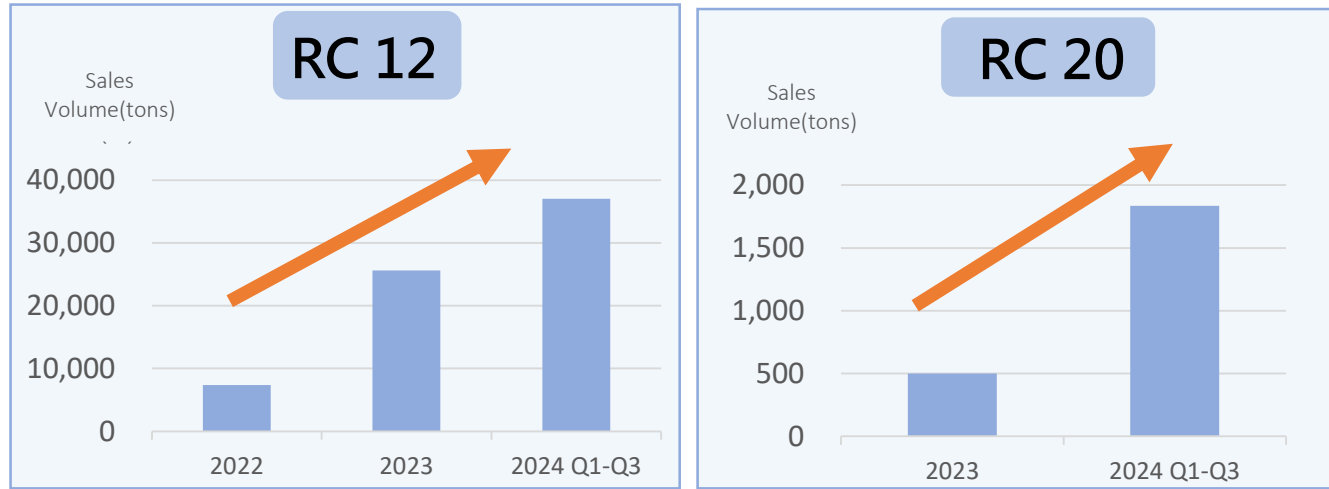
Increase Scrap Use

2.24 MT

CO<sub>2</sub>e

13

## 02 Steel Products with High Recycled Content Keep Growing



The **sales volume** of steel products with a scrap ratio of 12% and 20% **increased significantly**.

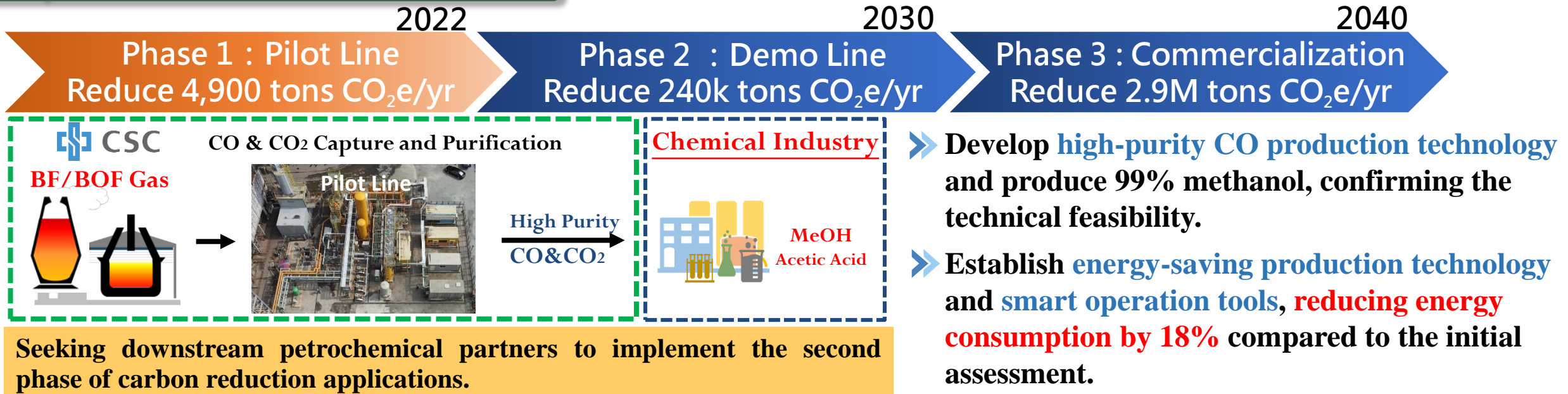


- Actively develops **steel products with a high ratio of recycled materials**. **Products with 12% recycled materials** obtained **UL2809 certifications** in 2021, and multiple products **with 20% and 40% recycled materials** have also been verified over the years. These products have been introduced and used by many global leading technology manufacturers for applications in computers, home appliances, servers, and furniture.
- In 2024, we cooperated with subsidiary DSC to produce high-end steel products with the quality comparable to BF process by **adding molten iron in the EAF and then connected to BOF**. The **verification of products with 60% recycled materials** has been obtained, and steel products with high recycled materials have been developed continuously.
- Steel products with high recycled materials (RC30) are planned to be developed into **high-grade steel**, including IF steel, medium to high-grade ES, and tinplate BP, etc. Additionally, to meet CBAM requirements, steel products with high recycled materials are also planned to be developed for **bar/rod products used in fasteners**.

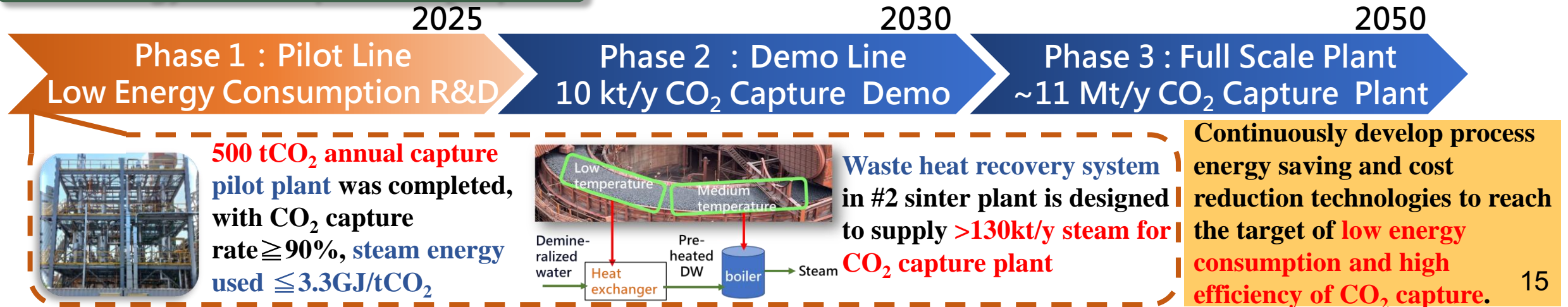


# 02 Carbon Sequestration Technology Development

## Co-production of Steel and Chemicals



## Low Energy Consumption CO<sub>2</sub> capture

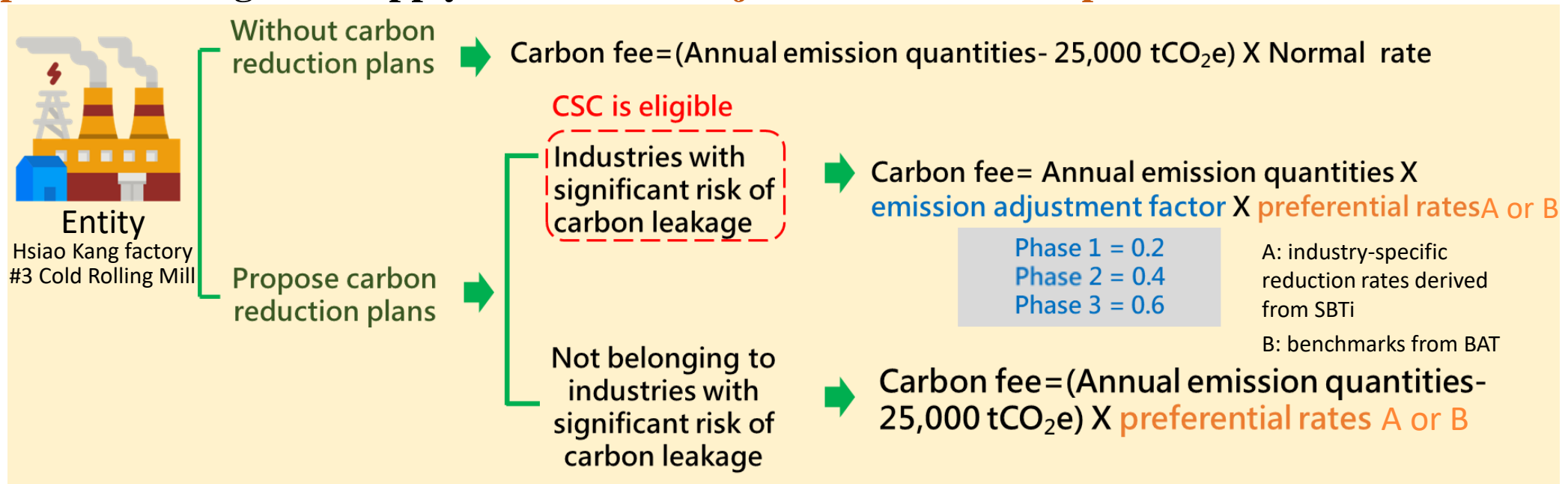




## 02 Countermeasures of Carbon Management Mechanism – Carbon Fee

### Response of Carbon Fee Regulations

- Taiwan government has announced Carbon Fee regulations and fee rates. The steel industry is expected to be classified as an industry with significant risk of carbon leakage. According to the regulations, entities in the high carbon leakage risk industry must propose **carbon reduction plans** to be eligible to apply the **emission adjustment factor** and **preferential rates**.



- CSC will **proactively propose carbon reduction plans** in order to lower the impact of carbon fee. By applying the **emission adjustment factor** and **preferential rates**, the carbon fee is estimated to be around NT\$ 200~400 million.

# 02 Countermeasures of Carbon Management Mechanism – CBAM

## Response of Carbon Border Adjustment Mechanism (CBAM)

Comply with  
CBAM  
Regulations

### Submit CBAM Report

According to the EU CBAM regulations, those who export specific products to the EU in transition period (Oct. 2023 to Dec. 2025) must separately calculate **direct emissions** such as combustion and fuel, and **indirect emissions** such as purchased electricity, and **submit CBAM report each quarter**.

### Calculate and Compile

By integrating cost management systems and GHG emission factors, CSC calculates embedded emissions for each product indicated by the CN code. These results are then compiled and included in a quarterly **CBAM report** provided to our customers and declarants.

中鋼 CBAM 資料彙整表	
China Steel Corporation CBAM Data Summary for Communication	
報告編號: CS-CBAM-2024-03-0207	中國鋼鐵股份有限公司 China Steel Corporation
生產廠名稱 Name of the installation	中國鋼鐵股份有限公司 China Steel Corporation
生產廠聯絡電話 Telephone	(886)-802-1111
生產廠地址 Street, Number, District, City, Country, Post Code	81223 高雄市小港區中鋼路1號 1, Chung Kang Rd., Hsiao Kang, Kaohsiung 81223, Taiwan, Republic of China
主要排放源設施之地理座標	120.347904, 22.544424
Geographical coordinates of the installation's main emission source	
適用之聯合國貿易及運輸地點代碼 UNLOCODE	TW KHH1
產品 CN 碼 CN code	7207
產品名稱 Product name	熱軋扁鋼板 SLAB
生產路線 Production routes	高爐-轉爐(BF-BOF) - 連鑄-熱軋
項目 Item	內容 Details
資料統計起日 報表日期 Reporting period start - end	2024.07.2024.09
包含直接排放量(A) Embedded direct emissions (unit: tCO2e)	1.862
包含間接排放量(B) Embedded indirect emissions (unit: tCO2e)	0.195
總額合計排放量(C=A+B) Total embedded emissions (unit: tCO2e)	2.057
排放係數所佔比例 Share of emissions by default value	0%
電力係數、電力係數來源、每噸產品之耗電量 electricity EF - Source for electricity EF - Embedded electricity (MWh/t)	0.586 - 自廠電力係數 actual CO2 emissions of the installation - 0.332
前驅物主要使用還原劑 The main reducing agent used in precursor production, if known.	焦炭 Coke
鐵、錳、鎳及其他合金的質量百分比 Mass % of Fe, Mn, Ni, total of other alloy elements, (unit: %)	Mass % of Fe: 0.022%; Ni: 0.015%; other alloys: 0.06
中鋼材料於其含量大於 1.5% 的質量百分比 Mass % of materials contained which are not recycled (if they mass is more than 1% to 5% of the total weight) (unit: %)	None
每噸產品所使用的前驅物 Tonn scrap used for producing 1 t of the product (unit: t)	0.06
前驅物中(預消費)回收廢棄物之比例 % of scrap that in pre-consumer scrap (unit: %)	99.46%
公司章 Corporate Seal	
日期 Date	中鋼 民國 113 年 8 月 2 日

Fulfill  
Customers'  
Further  
Requirement

### Customers' Requirement

CSC expects that customers may request **embedded emissions of different products**. In addition, some customers recently requested CSC to separately calculate embedded emissions from **different precursor sources** (ex: from CSC or DSC).

### Response

CSC calculates embedded emissions for each product indicated by the CN code via cost management system. To enhance the system, CSC has provided **distinct embedded emissions from different precursor sources** to customers from Q3 2024.

## 02 Countermeasures of Carbon Management Mechanism – Carbon Credit

### Carbon Credit Management

**Current Carbon Credit 4.49 million tons**

Carbon Credit of  
Early Action Project

**4.47 million tons**

Carbon Credit of  
GHG Offset Project

**19.4 thousand tons**

International  
Carbon Credit

**51 tons**

According to Climate Change Response Act, carbon credit can be used to offset **incremental GHG emissions**, deduct **charged emissions**, deduct **carbon emission differences from imported products**, and offset **excess emissions** in a cap-and-trade scheme.

### ➤ Promote Carbon-neutral Steel Project

Referring to "PAS2060 Specification for the Demonstration of Carbon Neutrality," CSC collaborates with clients to produce carbon-neutral wire rod and HRC. Striving to **reduce GHG emission from processing processes** first, we then **offset the residual GHG emission through carbon credits**. The end application of these carbon-neutral steels are hand tools and refrigerator side panels.

### ➤ Apply for Carbon Credit of GHG Offset Project

CSC's two GHG offset projects, "Change of Transportation Mode at Hualien Quarry" and "Energy Saving through Slab Hot-charging," were approved in 2017 and 2019 respectively. We will **apply for the second and third round of carbon credits** of these two cases by the end of this year.



03

# CSC Operation and Development Strategies



# 03 10-Year Operating Strategy

In strength but not size, build specialized strong core capabilities and cultivate differentiated competitive advantages.

Core

Promote to High Value-added Steel Mill

Develop Green Energy Business

Transformation

Digital Transformation, low-carbon transformation, and supply chain transformation



➤ Formulate the optimal production quantity, and turn into a smart leading-edge steel mill with concentration, expertise and strength.

# 03 Develop Advanced Premium Steel

## Definition of Advanced Premium Steel (APS)

Products with “**High Technical Content, High Industrial Benefit, High Profitability**”.

## Focus on 8 items (Meet customers' needs & Industry trend)

High-Quality Forging Steels	Superior Hand Tool Steels	High Performance Structural Steels	Steel for Green Energy	Ultra-High Strength and Toughness Steels	Advanced Alloy Steels	Cross-Generational Automotive Steels	Ultra-High Efficiency Electrical Steels
							

## » Advanced Premium Steel target

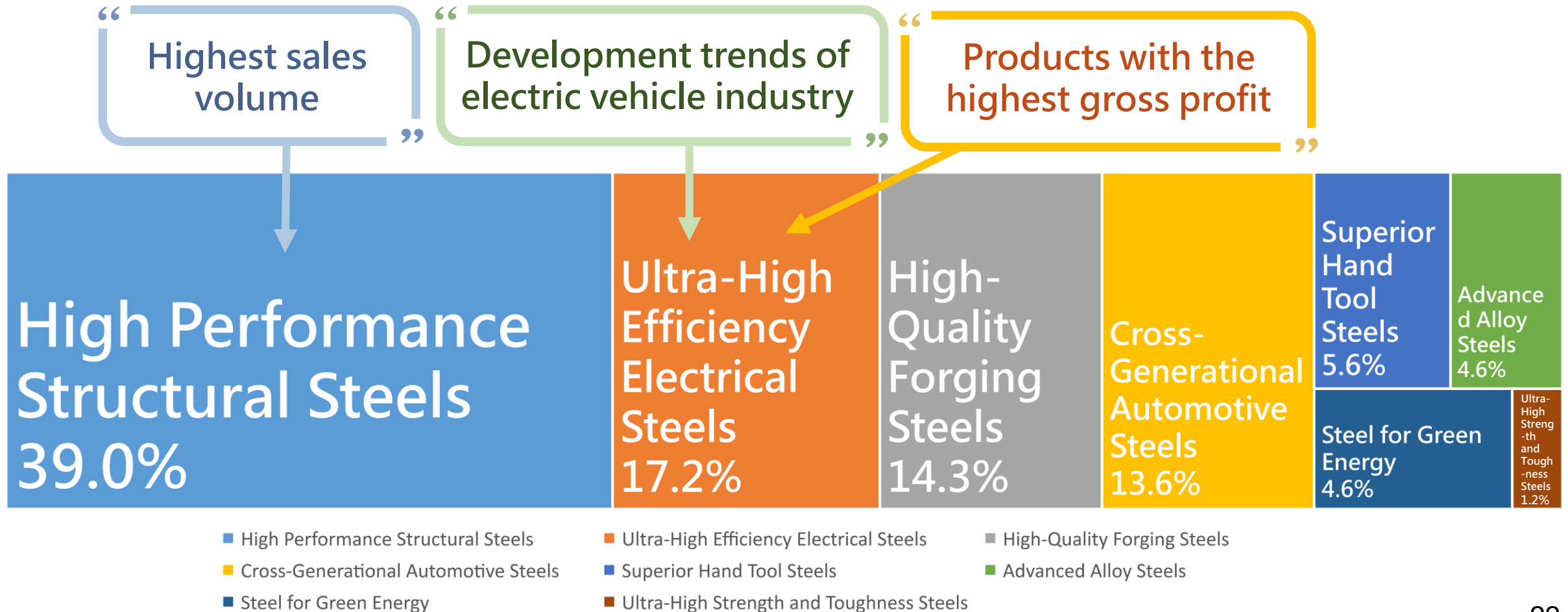
Year	2025	2026	2027	2028	2029	2030
<b>Advanced Premium Steel proportion</b> (APS sales volume target divided by total sales volume target, which does not include slab, bloom, and billet.)	<b>11.8%</b>	<b>13.5%</b>	<b>15.2%</b>	<b>16.9%</b>	<b>18.6%</b>	<b>20.3%</b>
<b>Advanced Premium Steel volume</b> (ten thousand tons)	<b>87.4</b>	<b>101.9</b>	<b>116.9</b>	<b>132.2</b>	<b>144.0</b>	<b>159.0</b>

» From January to October 2024, the **sales volume** of APS reached **11.0%**, sales revenues of APS reached 15.8%, and **gross profits** of APS reached **70.4%**.

**The high technical content and application value** of APS can enhance company **profitability and customer loyalty**, as well as **better withstand economic fluctuations**.

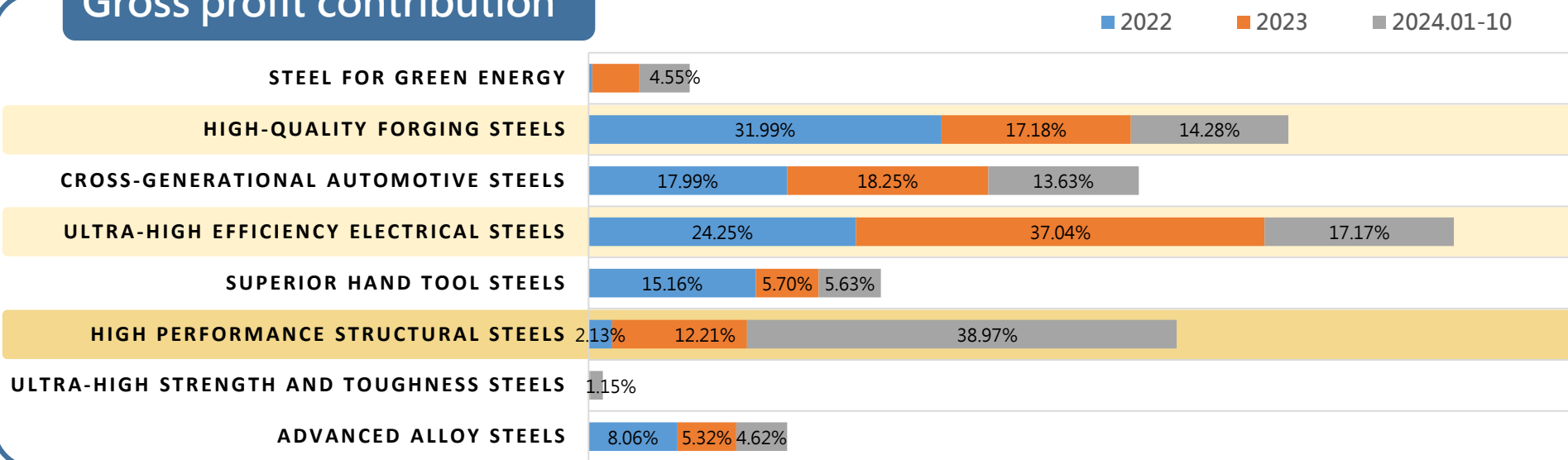
### 03 Develop Advanced Premium Steel

From January to October 2024, The sales volume of APS reached 656,510 tons. The sales volume of APS reached 11.0%, sales revenues of APS reached 15.8%, and gross profits of APS reached 70.4%.



# 03 Develop Advanced Premium Steel

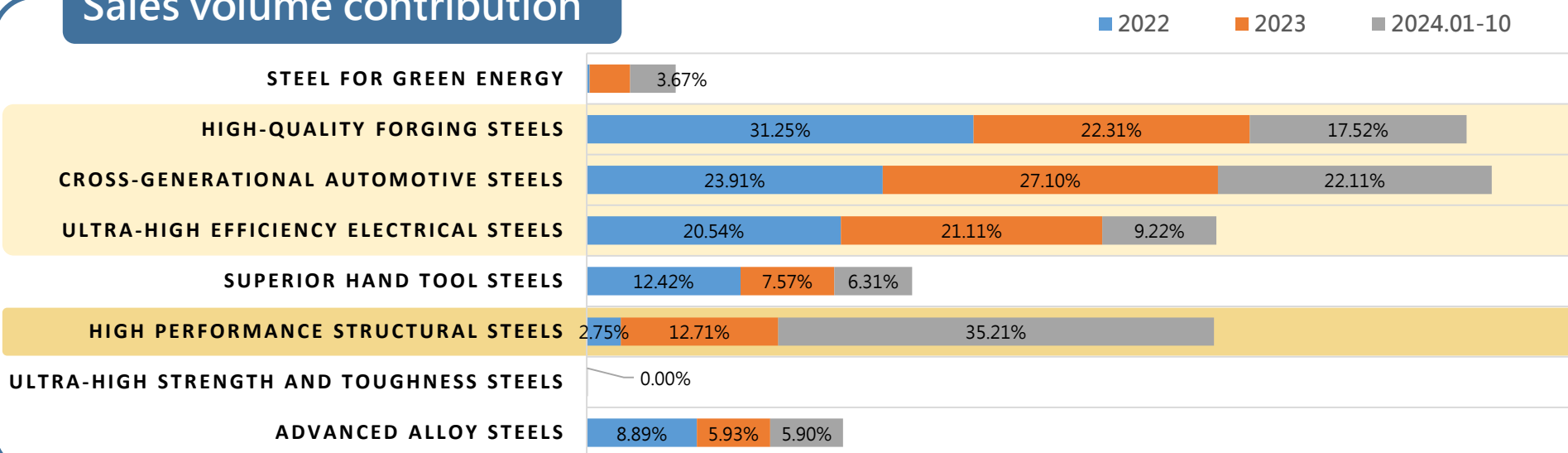
## Gross profit contribution



» In recent three years, **Ultra-High Efficiency Electrical Steels**, **High-Quality Forging Steels** and **High Performance Structural Steels** had the better performance of gross profit.

» **High Performance Structural Steels** had the best gross profit contribution and the highest growth rate of gross profit from January to October 2024.

## Sales volume contribution



» In recent three years, **Cross-Generational Automotive Steels**, **High-Quality Forging Steels** and **Ultra-High Efficiency Electrical Steels** had the better sales volume.

» **High Performance Structural Steels** had the highest growth rate of sales volume from January to October 2024.



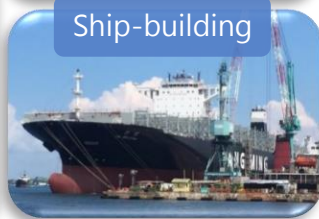
# 03 Highest Sales Volume in 2024 – High Performance Structural Steels



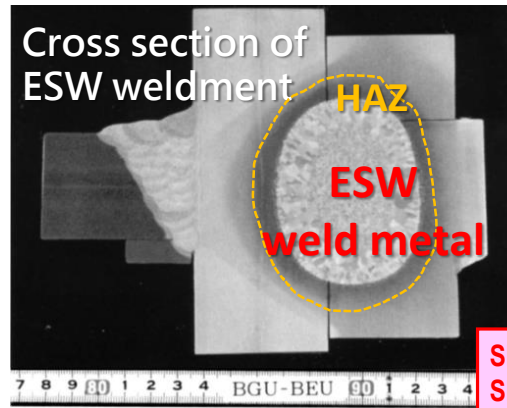
High-rise building



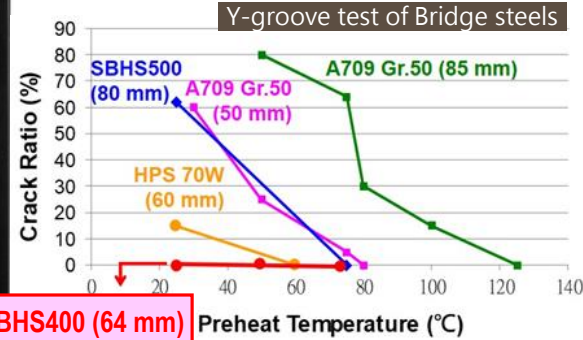
Long Span Bridges



Ship-building

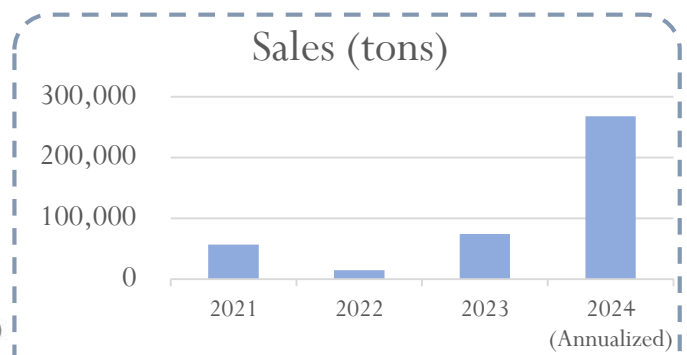


Cross section of ESW weldment



SBHS400 (64 mm)  
SBHS500 (50 mm)  
HPS 70W (40 mm)

Can satisfy requirements for omission of preheating



The investment of returned Taiwanese companies support the factory construction. Taiwan's economic growth has driven the real estate industry. Sales volume **increased significantly** in 2024.

The positive factors persist, and the sales outlook for 2025 is **cautiously optimistic**.

- Develop **plates for large heat input welding**, suitable for electroslag welding (ESW). The weldment has excellent performance and can meet structural design needs.
- Develop **plates for preheat-free welding**, designed with low carbon equivalent to reduce welding preheating temperature and improve welding efficiency. The heat-affected zone (HAZ) has high toughness after welding, which helps improve bridge safety.
- With **processes improvement** and **equipment renewal**, the **supply steadily increases**.

## ➤ Sales Outlook

- The return of Taiwanese companies to set up factories in Taiwan for the past three years has driven up **steel demand for manufacturing factories**. Taiwan's economic growth and rising incomes have led to a rise in **demand for housing purchases**. Demand for structural steel increased, and **the sales performance in 2024 was impressive**.
- **The economy of Taiwan** is anticipated to **continue growing**, which can result in an increase in corporate revenues and profits; the government has emphasized the safety of residential/engineering structures and promoted **the development of relevant laws**, which is anticipated to **be advantageous for the sales** of high performance structural steel **in the medium to long term**.

High magnetic flux

Low iron loss

High strength

Thin thickness

Electric Vehicle



UAV



Collaborative Robot



Bionic Robot

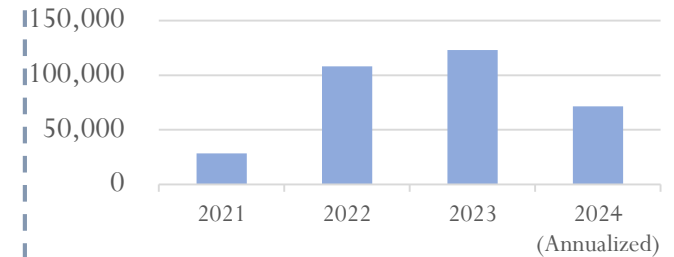


Improve the performance of high-efficiency motors

Lower energy loss

Reduce iron loss 20%  
Excitation optimize 35%Interlock+  
weldingSelf-  
bonding

Ultra-High Efficiency Electrical Steels Sales (tons)



EV is **future industry trend**. Current orders remains steady, and verification by other automobile manufacturers is currently undergoing.

It would be helpful to **stabilize orders** in 2025.

Supplies to **T, V, A, M** brand EV makers, and is currently undergoing verification by other automobile manufacturers in Europe and the U.S. **In 2023, we provided 98,000 tons of electrical steels** to the global electric vehicle market, accounting for **approximately 10% of the global market share** and ranking among the world's leading groups.

Developing thin-film and rapid-cured **self-bonding electrical steel**. Bonded core can further reduce iron loss and improve motor efficiency. More than **8,000 tons** of materials had shipped to **global auto industries** in the past three years and is expected to **double or triple** per year.

### EV Industry Outlook

ES usage per electric vehicle: 85-110kg in average

In 2024, the global EV sales volume would reach **17 million**, a **20% increase** from 2023.

IEA

From 2023 to 2030, **the compound annual growth rates (CAGR)** for global electric vehicles is **17.3%**.

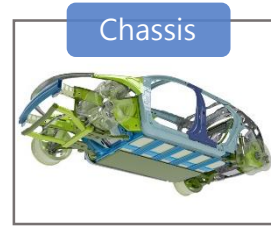
Enterprise Apps Today

By 2040, the annual sales volume of EV is expected to reach **61 million**.

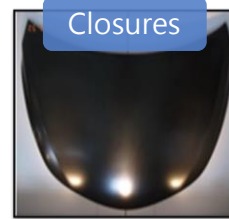
BloombergNEF

# 03 Good Profitability – Cross-Generational Automotive Steels

Advanced  
High-Strength  
Steel



Automotive  
Aluminum  
Materials



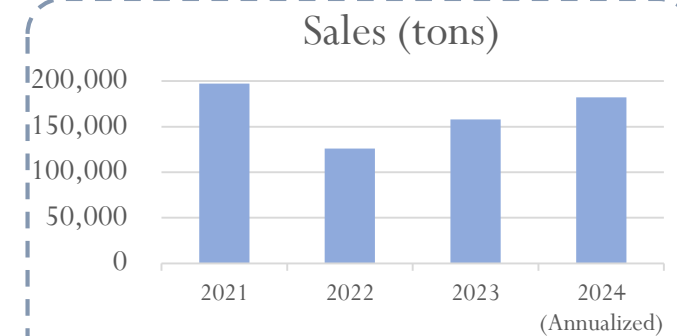
High strength ▶ Weight-reducing  
& energy saving

High Ductility ▶ Easily  
processing

High formation

Impact-resistant

Good surface



The orders from domestic and the U.S. automakers remained stable, and the orders from Europe rose. **Sales volume in 2024 increased.**

The sales momentum was driven by positive market conditions, and is expected to **continue in 2025.**

- Acquired **278 verifications from 27 automobile manufacturers.** Continuously supplying high-quality steel to well-known domestic and foreign car manufacturers.
- In the future, we will keep developing the technology of **cross-generational AHSS** and its application to increase the orders from current customers and find new customers.
- CSC Group developed a series of automotive aluminum materials. Passed **13 verifications** by international automakers, maintains stable supply, and takes **60% of the domestic market.**

## ➤ Automotive Industry Outlook

▶ Steel material usage per car: 700-800kg in average

In 2025, the global auto market is expected to return to the **pre-pandemic levels.**

ITRI

In 2025, aluminum sheets for auto body will reach **1.8 million tons.**

World Steel Association

The proportion of AHSS used in automobiles will keep growing : **15% ▶ 42%**

Center for Automotive Research(CAR)



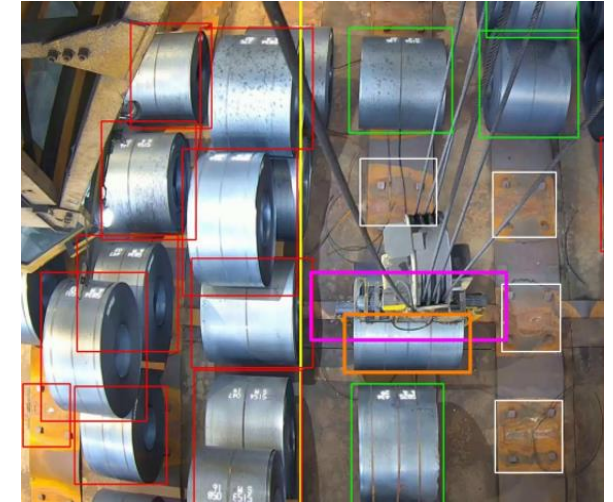
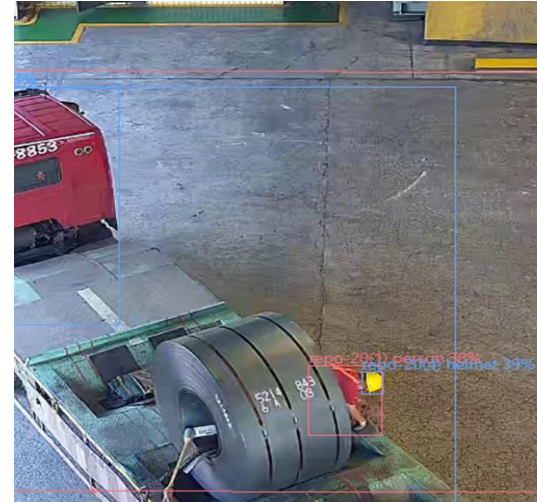
Human



Collaboration



Machine



## Improve Work Efficiency and Experience Pass-down

- Safety issues with crane boarding
- Workforce shortage due to declining birthrate

BACKGROUND



## Utilize Digital Innovation Technology

- **5G Remote Control:** Ground-based centralized control allows operation of multiple cranes across sites
- **Crane Advanced Driver Assistance Systems (ADAS):** Point-to-point automation saves 60% of operation time

APPROACH



## Safety and Efficiency

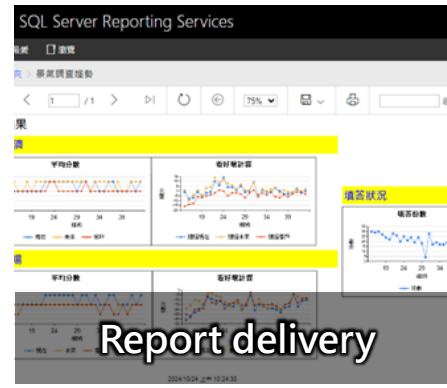
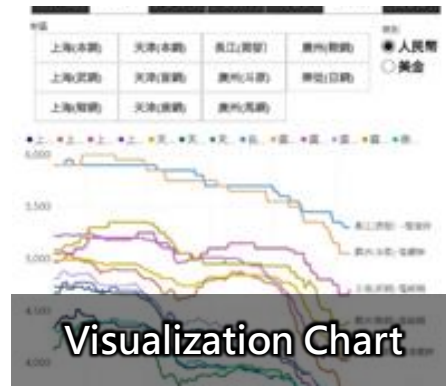
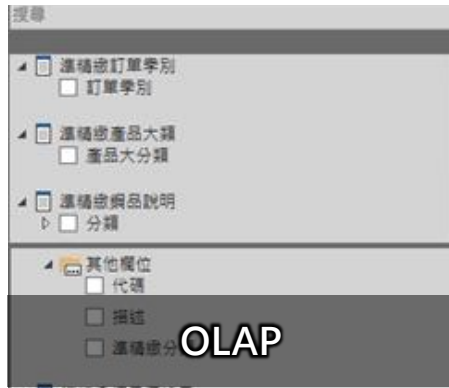
- Most crane operations can be automated, **reducing employees' burden**
- After full-scale implementation, the annual benefit will reach **NT\$ 110 million**

BENEFITS





# 03 Successful Case of Digital Transformation – Intelligence Applications



## Business Intelligence Data Warehouse System

- Integrating information on order volume, prices, costs, quality, production, etc.
- Scheduled activation, data cleaning, business model

### Improve Efficiency and Reduce Limitations

- Improve reporting efficiency
- Multi-dimensional analysis to reduce application limitations

BACKGROUND



### Implement BI Tools

- **Microsoft BI tools (including SSAS, SSIS, SSRS) :** Reduce the time required for report development and maintenance
- **TABLEAU 、POWER BI :** Mobile and tablet support

APPROACH



### Information Management and Efficiency

- Enhance client and order management, with up to **77,000 monthly uses**
- Generate information instantly, reduce customized service time, **improve efficiency by 97%**

BENEFITS



# 03 Expand Energy Business - Solar Power & Energy Storage Systems

## Performance Overview

### >> PV Installed

**100.3 MW; 0.11 billion kWh of annual power generation & 59 thousand tCO<sub>2</sub>e reduction per year**

### >> Operating Performance

(Accumulated as of October 2024)

Year	2017 -2021	2022	2023	2024	Total
Actual Capacity Installed (MW)	87.3	5.1	5.5	2.4 (as of Oct.)	<b>100.3</b>
Electricity Output (100m kWh)	3.30	1.05	1.05	0.98 (as of Oct.)	<b>6.4</b>



Electricity output  
**638 million kWh**



Revenues from electricity sales  
**2.99 billion**



Carbon reduction  
**around 321k tons**



Equivalent to the CO<sub>2</sub> absorption of  
**823 Taipei Daan Park**

\*Estimated based on the Taipower electricity carbon emission factor for each year

### >> Implementation of regulations on users with high power consumption

**57.82 million kWh green electricity has been used by CSC group as of the end of October 2024, which is 10% ahead of target.**

### >> Energy Storage Systems

The construction of a **11MWh** energy storage system has been completed, which participates in Taipower AFC, **deducts the capacity obligation** of users with high power consumption, and **reduces electricity expenses** with time-of-use rate, as well as **enhances grid resilience**. Help CSC achieve the vision '**energy-saving, energy-creating and energy-storage**'.

## Future Development

### >> Future Installation

**2~3MW / year**

**2033 installation target: over 120MW, about 0.13 billion kWh of annual power generation**

### >> Future Operation

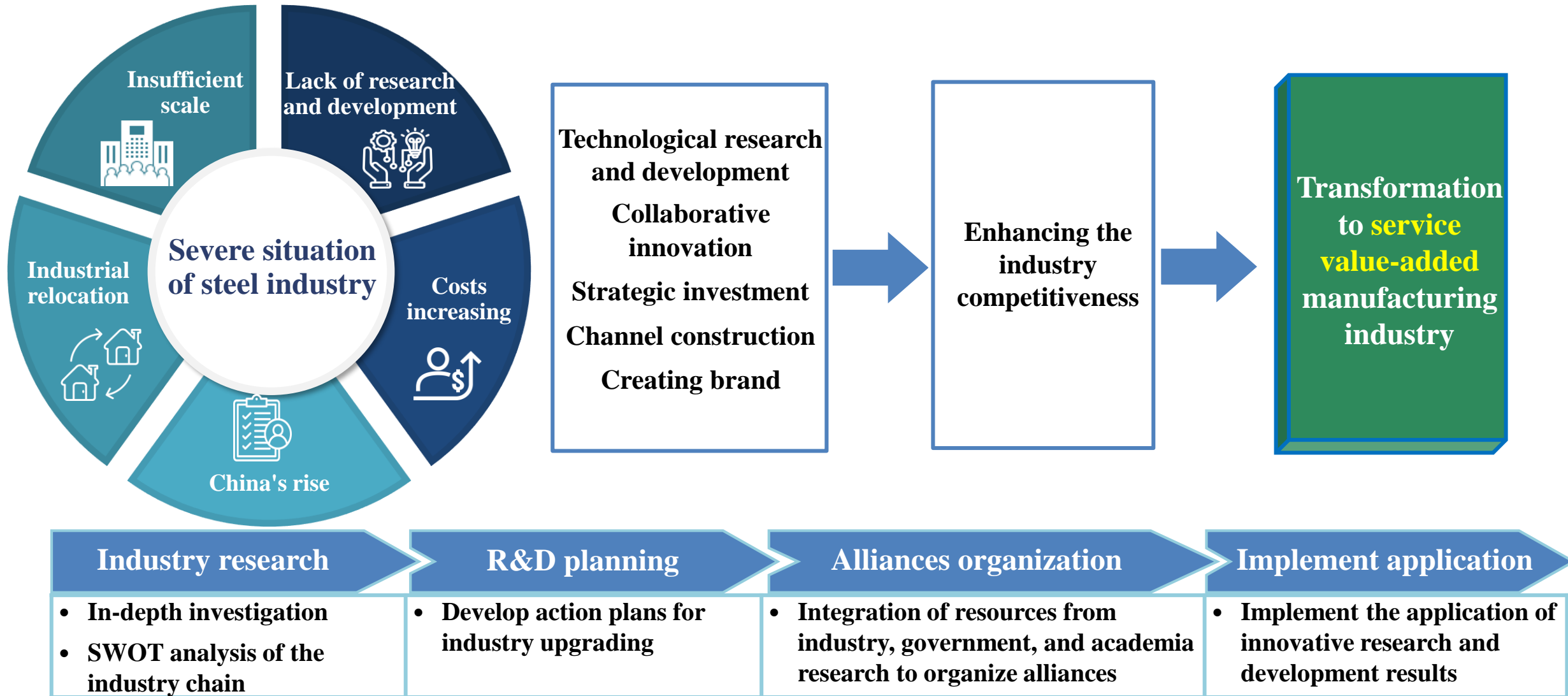
**Business Operations**

**Sales of electricity, energy storage systems, and technical services**

**Estimated Revenue**

**2024: about NT\$ 570 million ▶ 2033: about NT\$ 700 million**

# 03 Supply Chain Transformation – Promote Upgrading of Steel-using Industry



➤ Competition among individual companies → **Competition** in the **industrial ecosystem**.  
**As downstream and customers improve, CSC will improve.**

## 03 Successful Case – Development of EV Motors and Thin Gauge ES



- CSC collaborated with FUKUTA to develop thin gauge ES and hot stamping technology, and has developed a series of automotive ES.
- Assist the domestic motor industry in developing **high power density EV motors/deep energy-saving IE5 industrial motors/drone motors**.





# Thank you

## Q & A

04

# Appendices

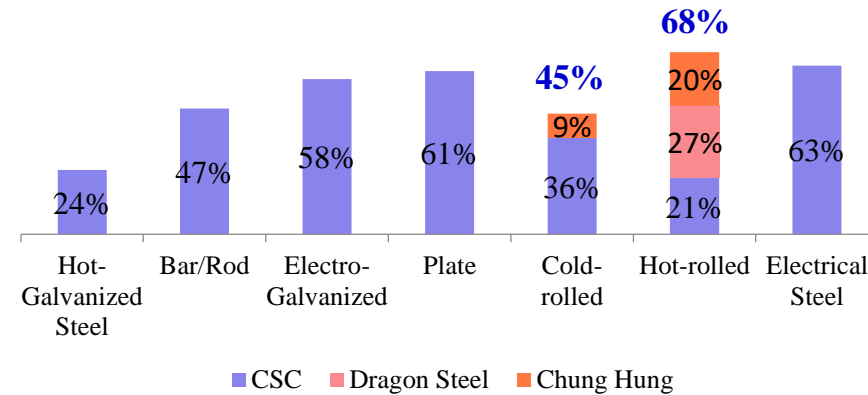
## 04 Company Overview – Business Snapshot

- CSC is the leading Taiwanese steel manufacturer with integrated production capabilities. Crude steel capacity of CSC Group reached about 16 mmt.

- ✓ CSC: 9.9 mmt
- ✓ DSC: EAF & No.1&2 BF around 6 mmt

- Dominant position in the domestic market
  - Focus on Leading-edge Steel Mill & green energy business.
- Improve the percentage of high-end and high-margin products.

**CSC Group domestic market share (2024.1~3Q)**



### Steel

- CSC
- CHS
- DSC
- CSC Steel Sdn. Bhd.
- CSVC
- CSCI

### Engineering

- CSSC
- China Ecotek
- CSMC
- Info-Champ Systems

### Industrial Materials

- CSCC
- CHC Resources
- CSAC
- Himag Magnetic

### Logistics & Investment

- CSE
- CSGT
- Gains Investment
- China Steel Security
- CPDC

### Green Energy

- SDMS
- CSC Solar
- China Steel Power
- KRTC

# 04 Consolidated Financial Performance

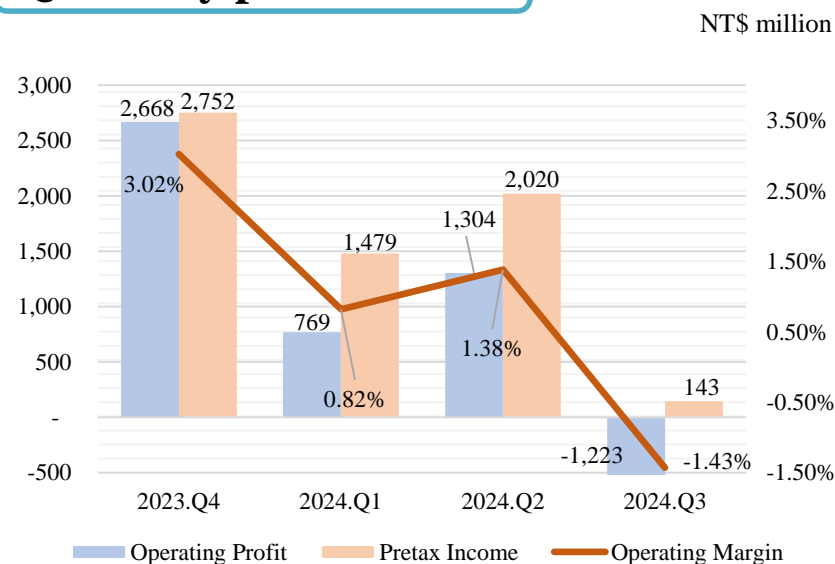
## Latest operating results

Amount: NT\$ million

Item	*2024.10	2024.09	MoM	*2024.1~10	2023.1~10	YoY
Operating Revenue	27,940	26,748	4%	301,882	303,984	-1%
Operating Income	95	-1,412	107%	944	1,436	-34%
Operating Income Margin	0.34%	-5.28%		0.31%	0.47%	
Income Before Income Tax	107	-675	116%	3,748	2,661	41%

\*preliminary result

## Quarterly profits trend

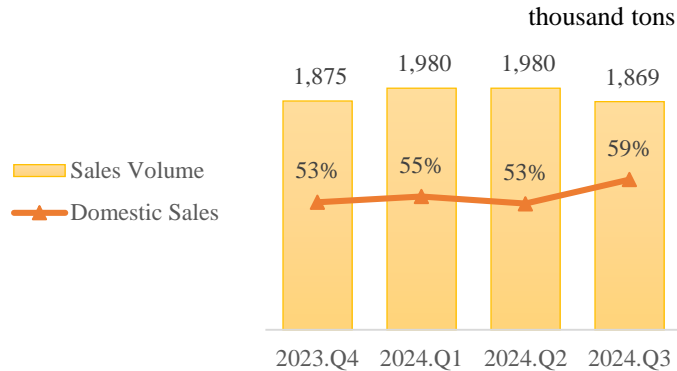


- ✓ Steel prices rose in Q1 2024 while costs gradually increased, squeezing the profit; the profit increased in Q2 due to the recognition of gains from the construction contract changes.
- ✓ Entering the traditional low season, coupled with the summer vacation in Europe and buyers adopting a wait-and-see attitude ahead of the U.S. presidential election, the steel demand is weak in Q3. The decline in sales prices was greater than that in costs, resulting in a squeeze in profit.



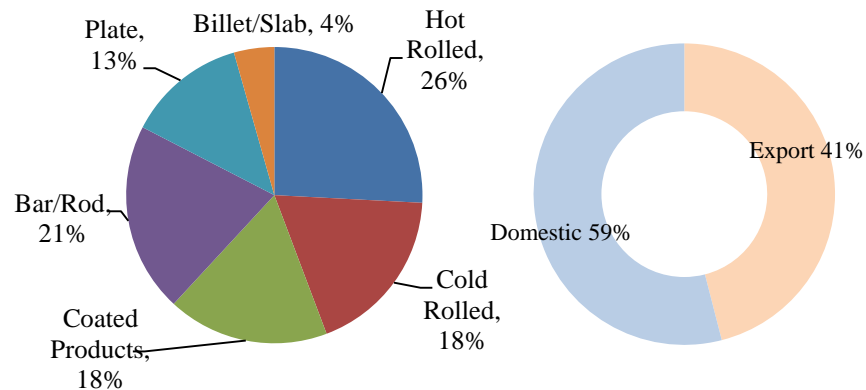
## 04 Production / Sales Performance

### Sales analysis

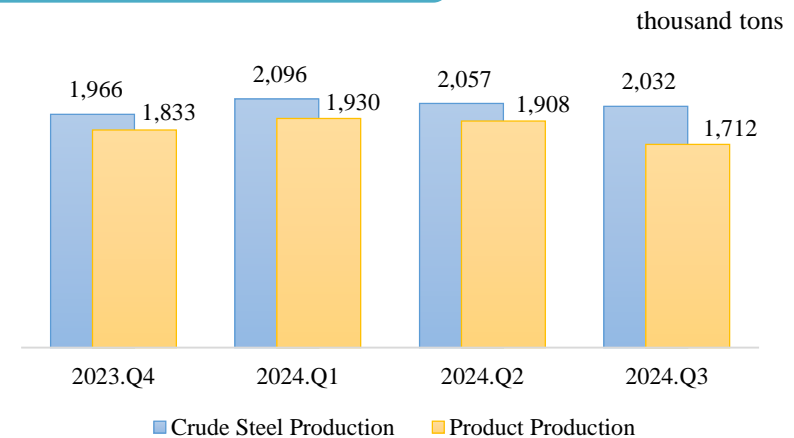


- ✓ The steel market recovered moderately in Q1 2024, and buyers' restocking demand has increased. Even with fewer working days because of the CNY, sales volume still increased.
- ✓ Customers turned conservative in Q2 2024 as the steel market declined globally. The steel demand fell in Q3 while entering the traditional low season. The sales volume decreased.

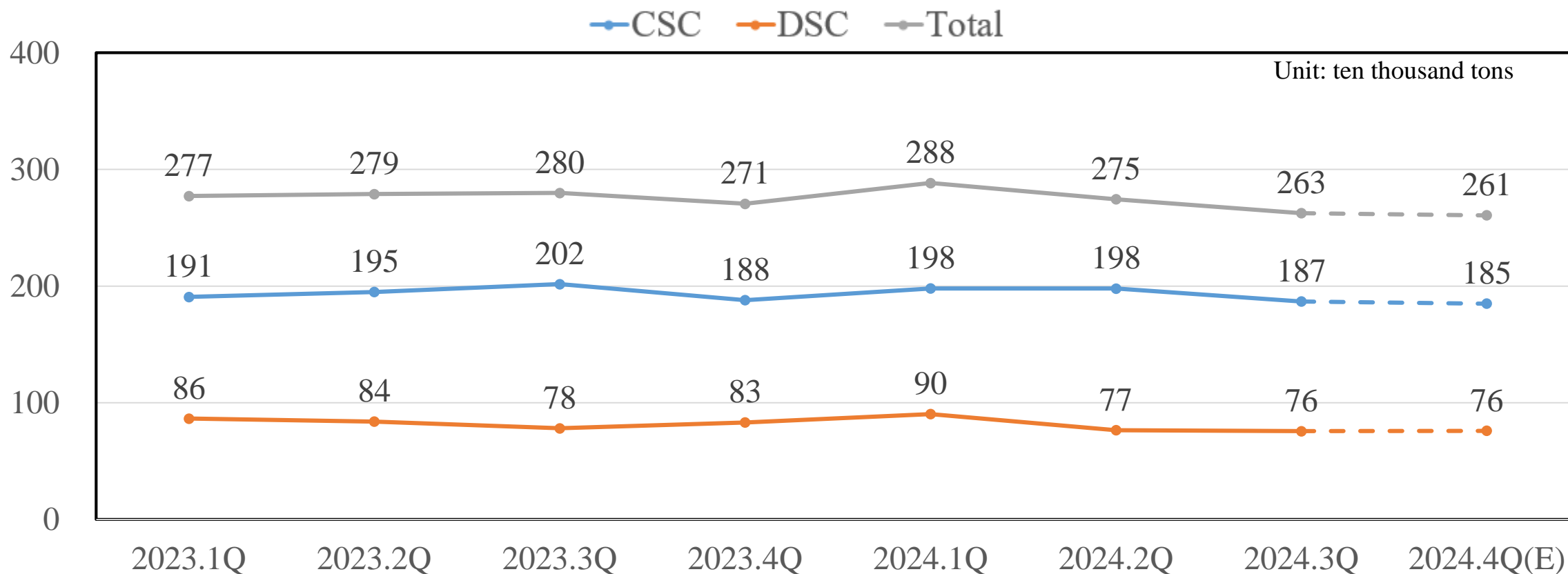
### 2024.1~3Q Sales value breakdown



### Production analysis



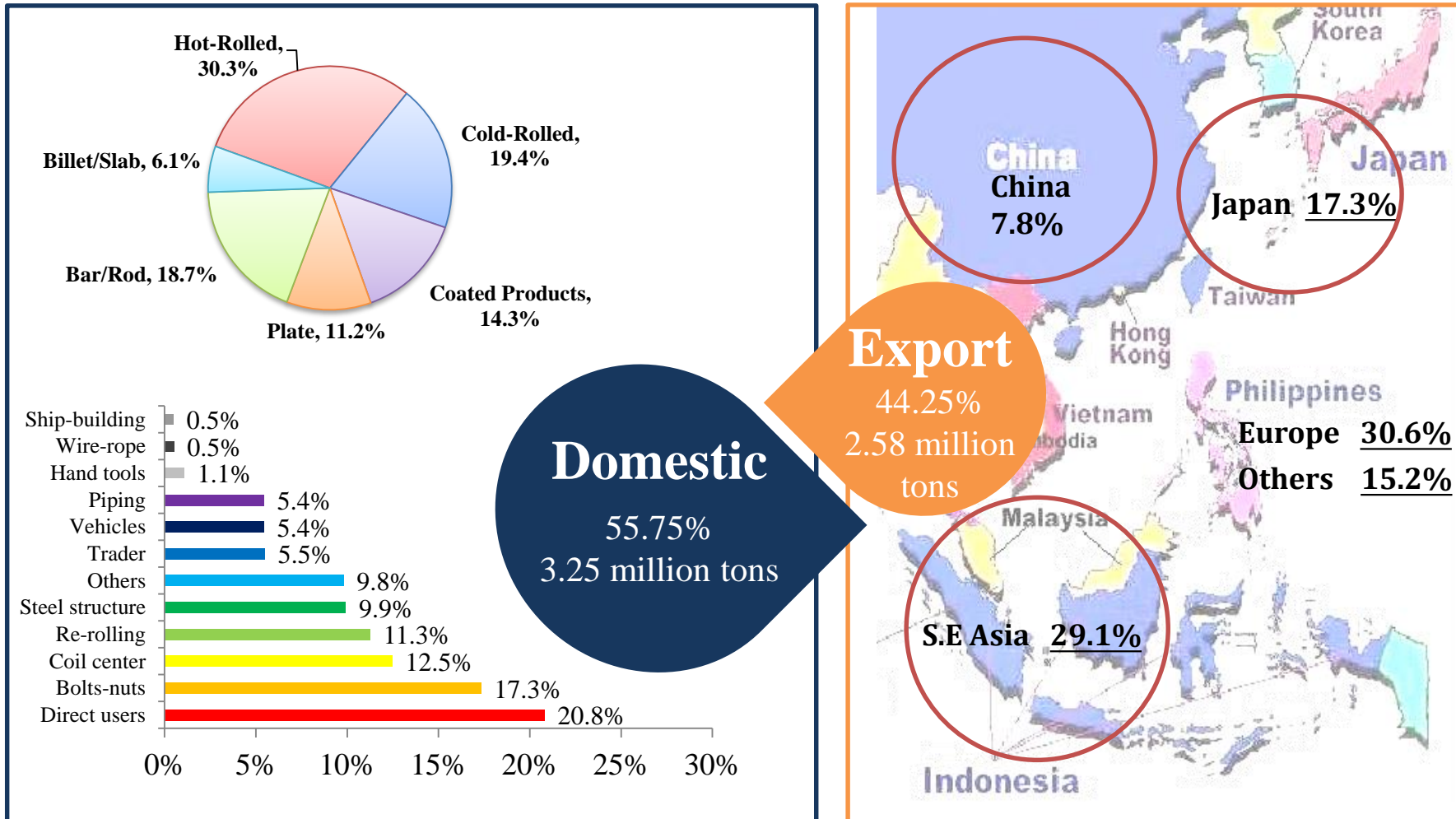
## 04 Sales Analysis – CSC & BF Products of DSC



➤ Affected by the continued downturn in China's housing market, sales cooled down quarter by quarter in 2024. However, benefiting from China's continuous bullish policies, the steel market has bottomed out in the fourth quarter, and sales are expected to have a gradual and steady uptrend.

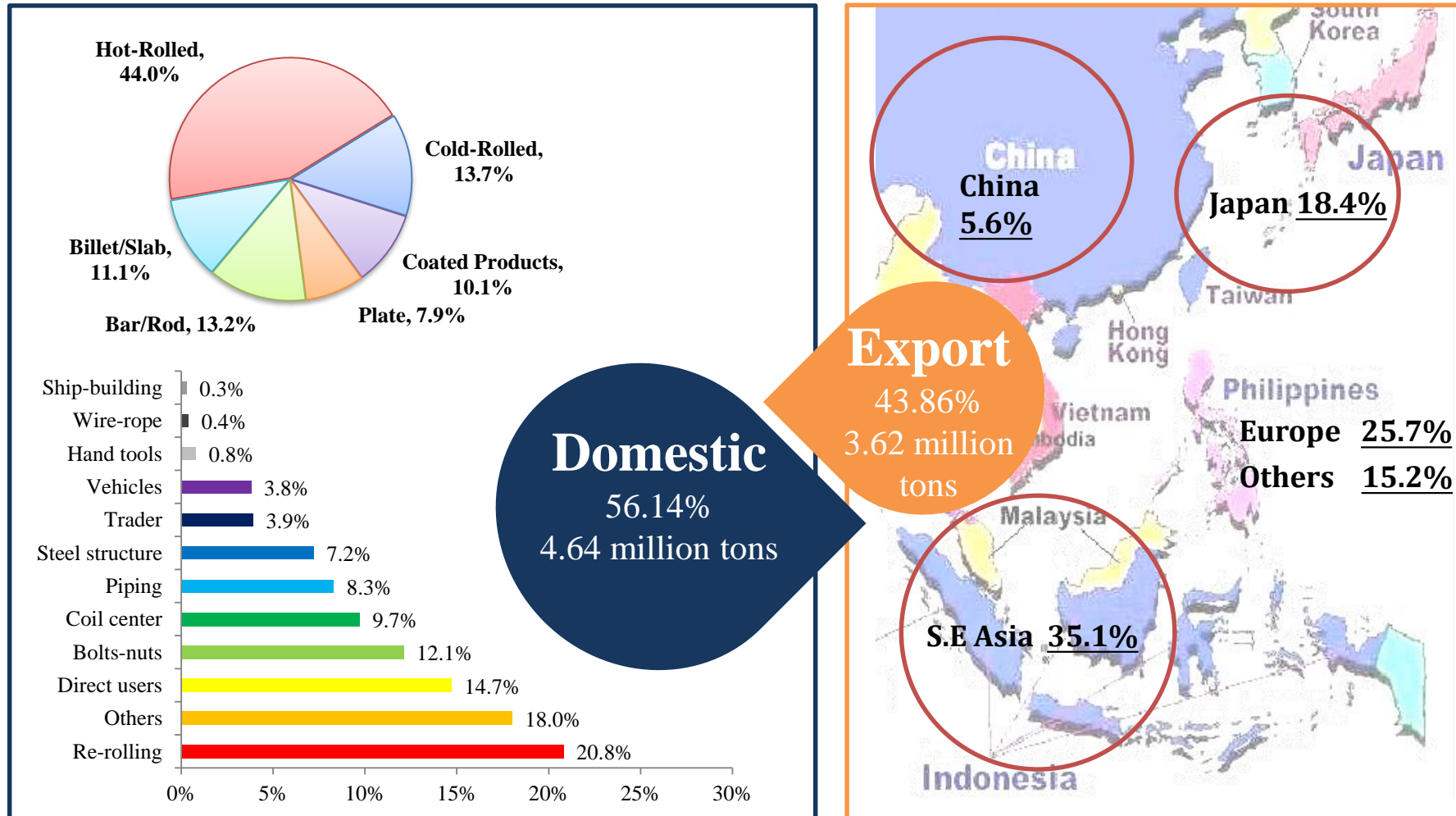
## 04 Sales Analysis – CSC Standalone

2024.1~3Q sales volume totaled 5.83 million tons – Sales Breakdown



# 04 Sales Analysis – CSC & BF Products of DSC

2024.1~3Q sales volume totaled 8.26 million tons – Sales Breakdown





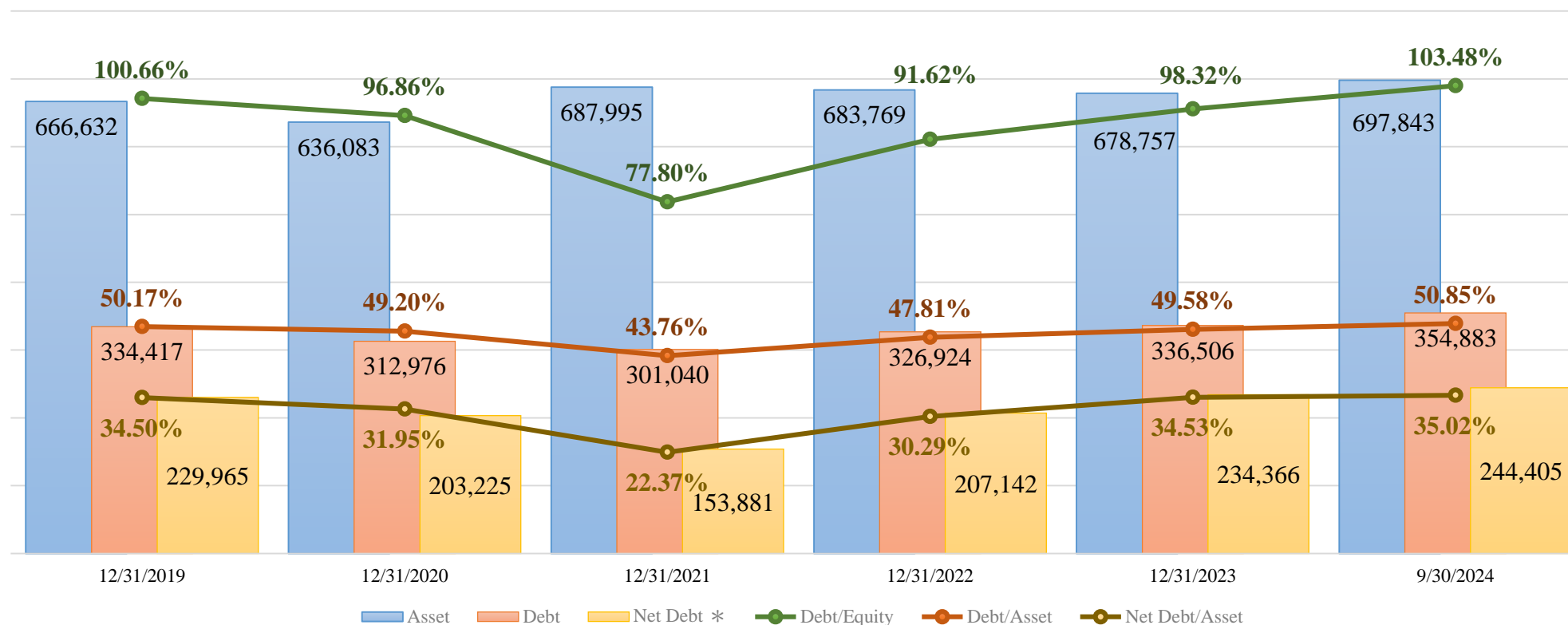
## 04 Consolidated Income Statement

Units: NT\$ millions

	2024.1~3Q	2023.1~3Q	YoY
Revenues	273,942	274,932	-0%
Gross profit	10,762	10,887	-1%
Gross margins	3.93%	3.96%	
Profit before tax	3,641	1,838	+98%
<u>Net profit</u>	<u>2,981</u>	<u>872</u>	+242%
Attributable to			
Owners of the corporation	1,883	(436)	+532%
Non-controlling interests	1,098	1,308	-16%
Earnings Per Share (NTD)	\$0.12	(\$ 0.03)	+500%

## 04 Consolidated Financial Position

Units: NT\$ millions



- ✓ In response to the environment of rising interest rates, multiple domestic financing channels, such as issuing corporate bonds, are used to reduce the impact of rising financial costs.
- ✓ Credit rating: Taiwan Ratings twAA- ; Outlook Stable (2024.04.29)  
Fitch Ratings AA (tw); Outlook Stable (2024.04.16)

\* 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* )

## 04 Historical EPS and Dividends Paid

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Dividend payout(%)	70	102	82	81	63	88	600	77	87	318
Cash Dividend payout(%)	70	102	82	81	63	88	600	77	87	318

