

# CHC Resources Corporation

November 13, 2019

# Outline

Company Overview

Financial Overview

Industry Overview

Operational Overview

Future Prospects



# Company Overview

## Vision

- Commit to resource sustainability and value innovation
- Become an excellent enterprise in the circular economy

## Core Value

- Integrity · Esteem · Sustainability

## Resource Sustainability Concept

- **Reduce**-Energy saving and waste reduction
- **Reuse**-Make the best use of it
- **Recycle**-Recycling
- **Recovery**-Resource innovation

# Main Business



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## GBFS Cement Division

(The largest producer of GGBFS in Taiwan)

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## Resource Reutilization Division

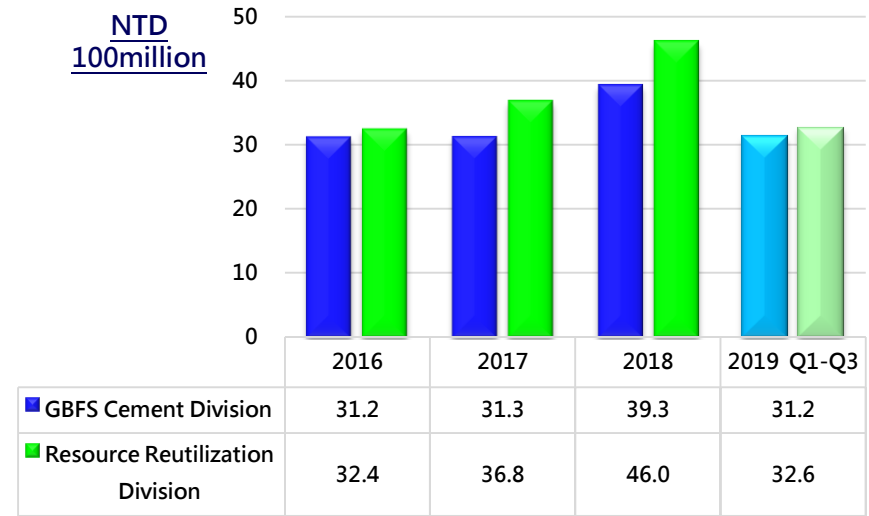
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# Financial Overview

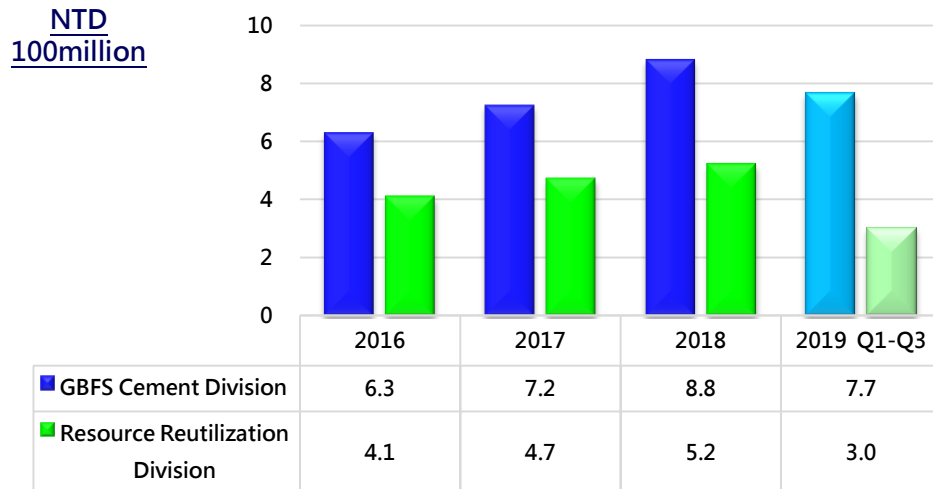
## Consolidated Revenue & EPS



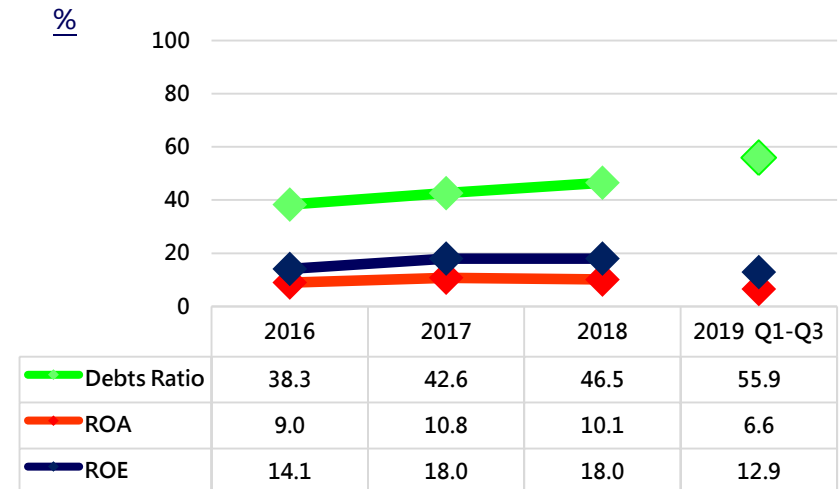
## Consolidated Revenue of Business



## Gross Margin of Main Business



## Main Financial Index

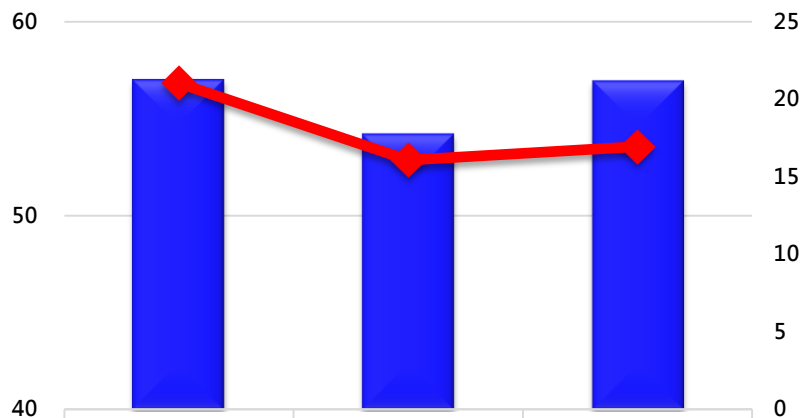


# Financial Overview

## Stock Price & PE Ratio

NTD per share

P/E Ratio

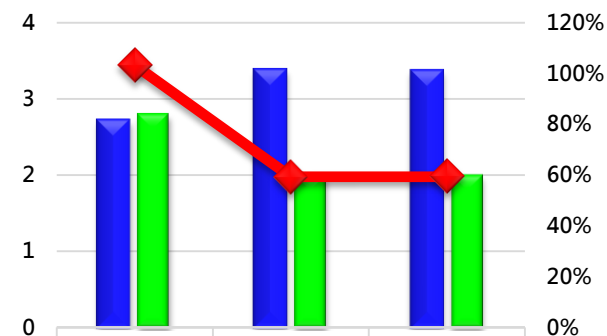


Stock Price	57.0	54.2	56.9
PE Ratio	21	16	17

## EPS & Dividend

NTD per share

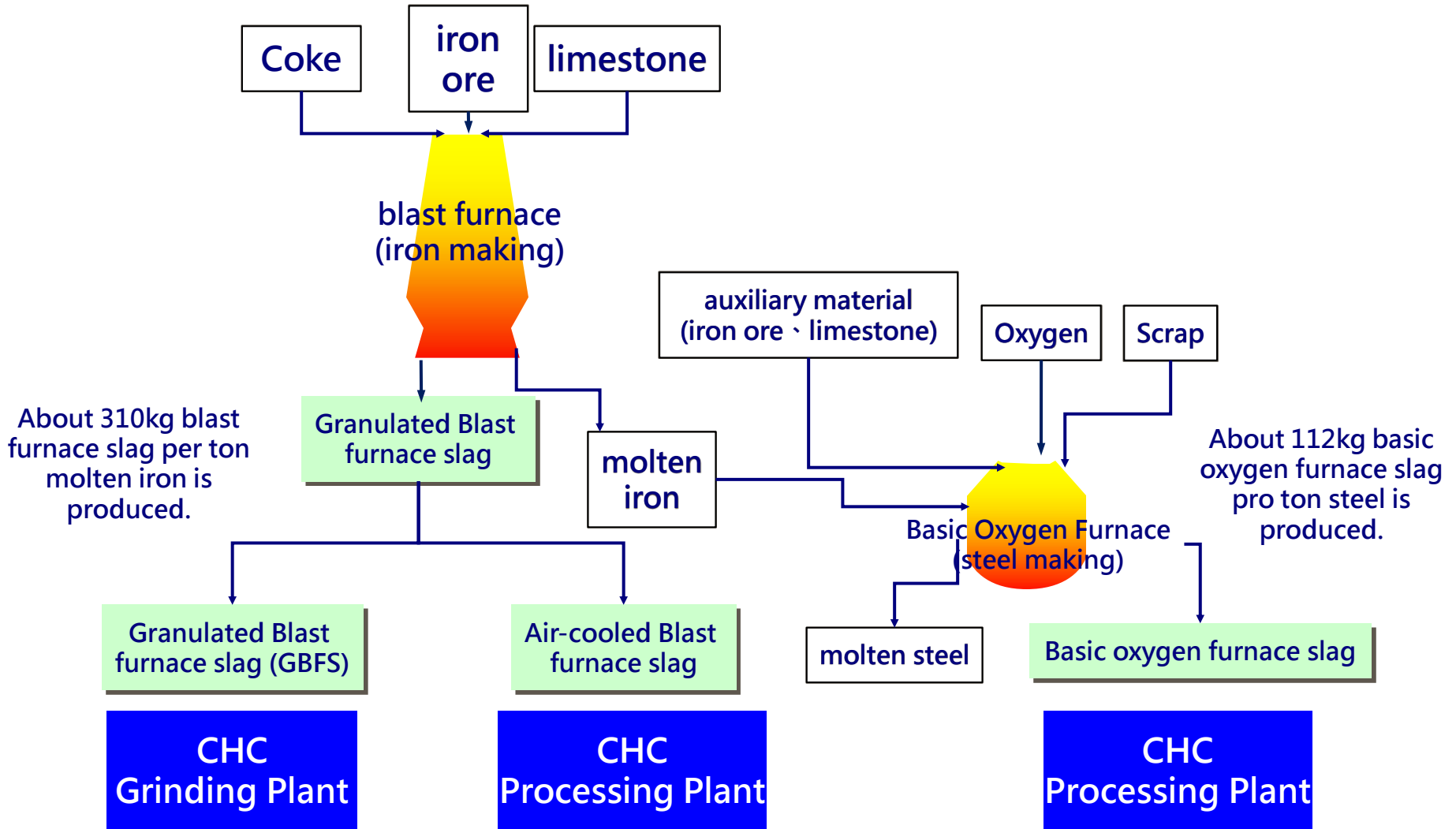
Dividend payout ratio



EPS	2.71	3.37	3.36
Divident	2.8	2.0	2.0
Divident Payout Ratio	103%	59%	60%

# Industry Overview

## Industrial Relation



# GGBFS Industrial Relation

## Upstream

Steel mill  
GBFS

Cement plant  
cement

Power plant  
coal ash  
(fly ash)

## Midstream

CHC	
Main Products	Application Function
GGBFS	Construction project
Ultra-fine GGBFS	underground bases and coastal or marine engineering
Fly ash slag powder	Civil projects
GGBFS cement	Road and bridge Projects
Bagged GGBFS cement	Other special concrete
Special Material	

## GBFS Cement Division Downstream

Public construction

Ready mix concrete plant

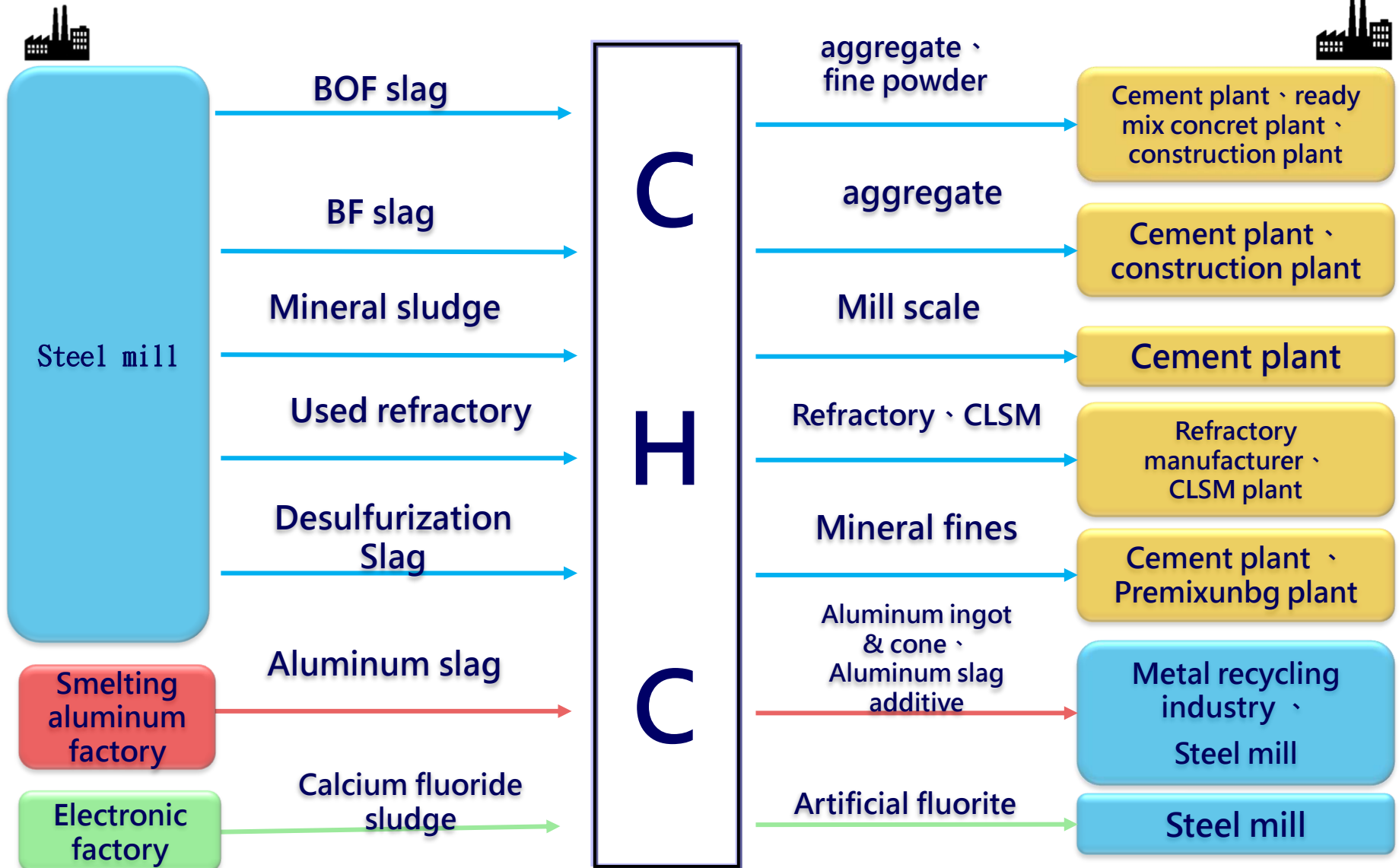
Construction plant

Construction Company

Building materials Provider

# Resource Reutilization Industrial Relation

Resource Reutilization Division



# Operational Overview

GBFS Cement Division

## GGBFS Products And Application

Main products	Series / Application	
GGBFS	Grade 100	Cementitious material of concrete
	Grade 120	
Blast Furnace Slag Cement	IS type	Ordinary structure
	IS(MS-MH) type	Moderate resistance to sulfate attack, medium hydration heat : Marine engineering against salt corrosion
	IS(WR) type	Containing mineral admixtures with high fineness : Weak soil consolidating and ground grouting work
	IP(H2F) type	Inhibit alkali-aggregate reaction and efflorescence : adhesive of ceramic tiles, bricks and stone
Special Material	Soil improvement agent	Improve compaction and durability of soil/Ground grouting and CLSM production
	Wet grouting material	Improve mixing, flowability, reology behavior, high adhesive strength

# GGBFS Products And Characteristic

GBFS Cement Division

The advantages of GGBFS and GBFS cement products

- (1) The material has a Pozzolanic Activity to increase the strength of the concrete for final time.
- (2) Effective against sulfate attack.
- (3) Reduce the risk of alkaline aggregate reaction.
- (4) Reduce permeability of concrete.
- (5) Reduce cement usage, reduce hydration heat, and avoid thermal stress.

Tetrapods used ordinary  
Portland cement Type I



Tetrapods used Portland blast furnace  
slag cement



# GGBFS Products And Application

GBFS Cement Division



Taiwan High Speed Rail



Kao-Ping-Hsi Cable-Stayed Bridge

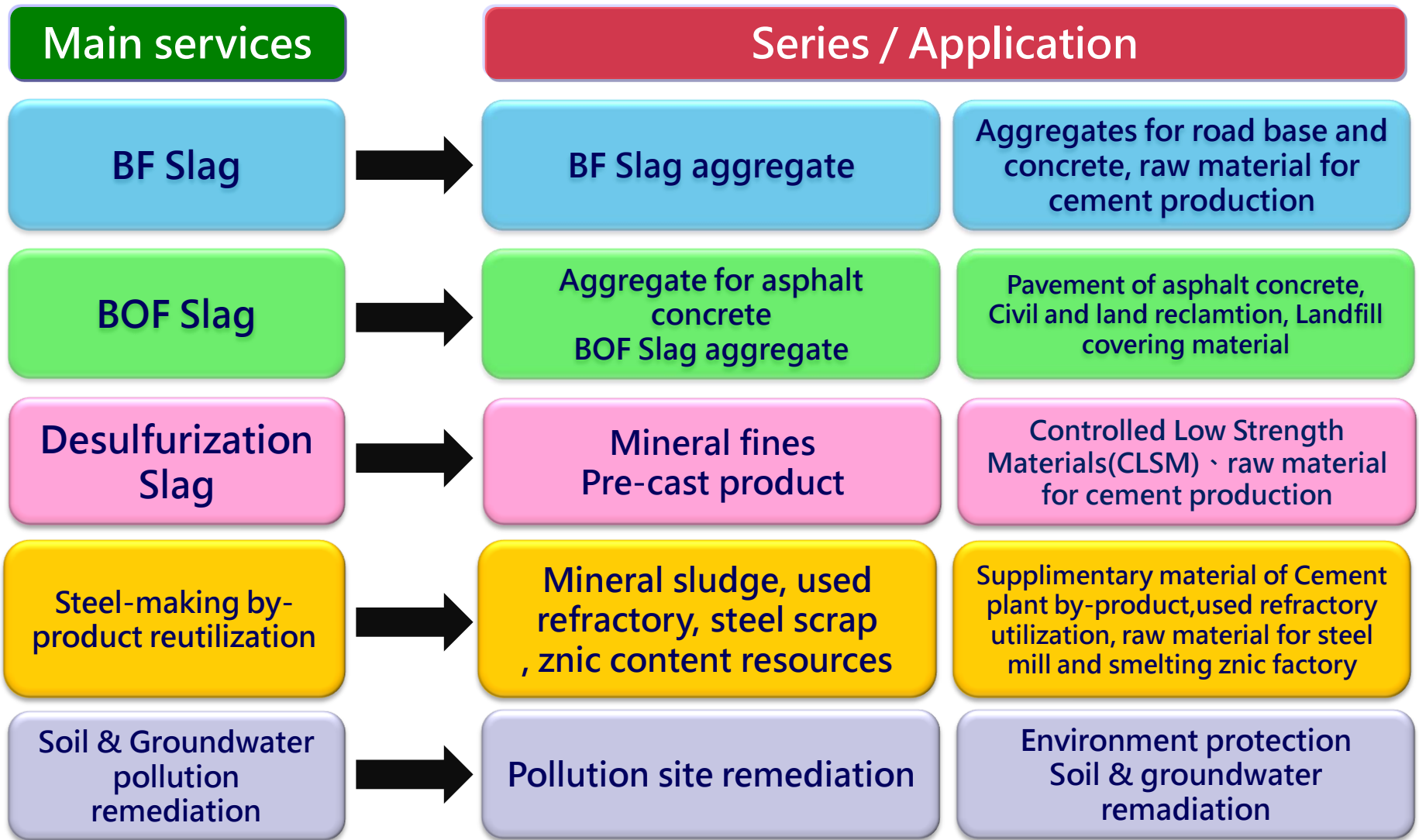


National Stadium (Kaohsiung)



China Steel HQ Building

# Resource Reutilization Products And Application



# Resource Reutilization Products

Resource Reutilization Division

Mill scale



BFS



Mineral fines



BOFS



Artificial  
fluorite



Magnetic residual  
steel



desulfurizer



Aluminum  
Ingot



# Product Application

Resource Reutilization Division

## 1. In-plant Trial

In-plant trial, evaluation results

Dongli East Road, chinasteel Yuanliao East Road Chinasteel



## 2. Off-site Trial

Cooperate with the public Institutions to examine the performance of BOF AC

Jinfu Road, Kaohsiung City Yongcheng Road, Tainan City



## 3. User's Manual

Through the Ministry of Economic Affairs review, announcement and issuance



## 4. Listed On Public Construction Work Specification

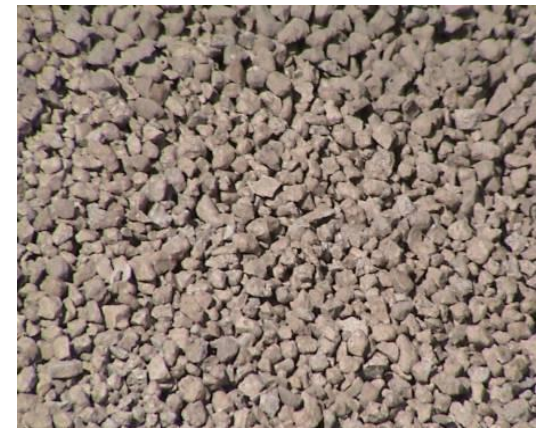
Draft the construction guidelines by the Public Works Committee  
Listed on Kaohsiung City Construction Specifications

## 5. Extensive Promotion

More than 275 BOF AC pavement

# BOF Slag Aggregate Application

Resource Reutilization Division



The appearance of BOF Slag aggregate is similar as natural aggregates

# BOF Slag Aggregate Application- AC Pavement

Resource Reutilization Division



(Major access road in front of Kaohsiung Airport, DGAC)

# Future prospects

## GBFS Cement

- Domestic market
- Overseas market

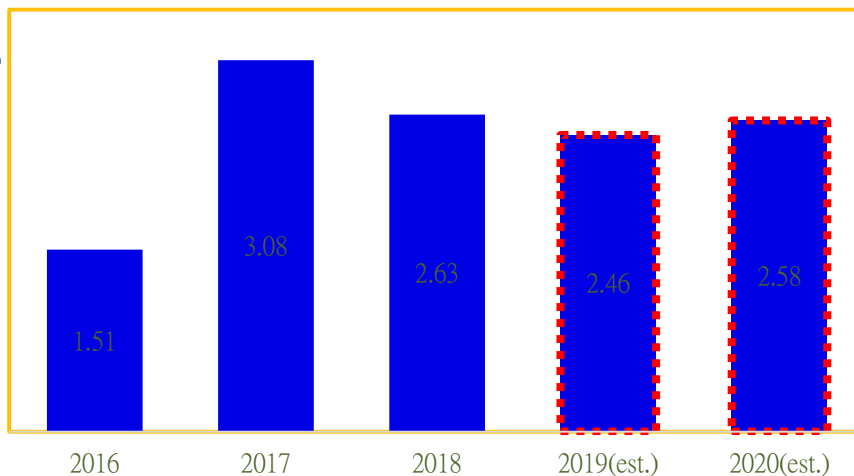
## Resource Reutilization

- Exploring the process materials of the cement industry
- Exploring the raw materials of the steel industry
- Improve R&D technology and implement circular economy

# Domestic Market

GBFS Cement Division

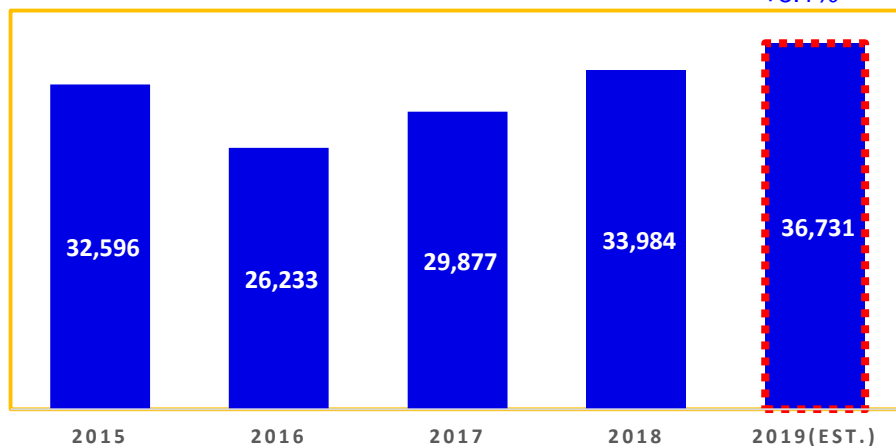
Economic growth rate



(Source: Directorate General of Budget, Accounting and Statistics)

## Construction license issued

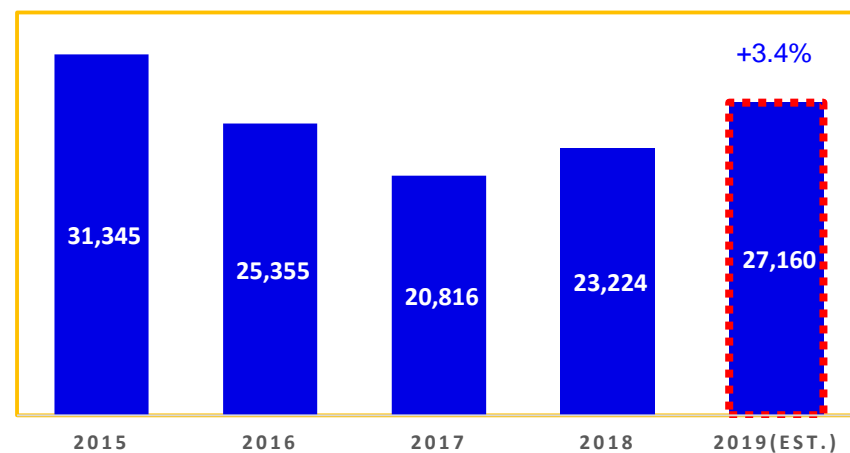
Total floor area - thousand M<sup>2</sup>



(2015-2018 source : Construction and Planning Agency)

## Operation statistics

Total floor area - thousand M<sup>2</sup>



(2015-2018 source : Construction and Planning Agency)

# Domestic Market - Public Construction Budget

GBFS Cement Division

NTD 100million

Item	2019	2020(Draft)	Difference
Public construction plan	1,604	1,646	+ 42(+ 2.6%)
Special budget for Forward-looking infrastructure plan	954	1,005	+ 51(+ 5.3%)
Operating and non-operating special fund affiliates Planning public works in the budget section	1,294	2,019	+ 725(+56.0%)
<b>Total</b>	<b>3,852</b>	<b>4,670</b>	<b>+818(+21.2%)</b>

Economy and energy	Transportation and construction	Environmental resources	Agricultural construction	Cultural facilities	Urban development	educational facility	Health benefits
1,470	1,425	790	523	146	134	112	70

(Source: Directorate General of Budget, Accounting and Statistics)

# Domestic Market - Large Construction Projects

GBFS Cement Division



Green energy industry



Traffic construction



Defense construction



Semiconductor industry



Actively strive to follow the government's industrial policies and business opportunities derived from the retreat of Taiwanese businessmen. In the future, relevant construction will enter the substantive engineering stage and will have a positive impact on the company's operations.

# Domestic Market Outlook

GBFS Cement Division

- Based on the aforementioned economic indicators, the public construction budget and the increase of investment in Taiwanese, it is expected that the domestic GGBFS market will grow moderately in 2020.
- The domestic producers' GGBFS production capacity is higher than the market demand, and some of the producers have expansion plans, thus increases market uncertainty.
- In recent years, the international GBFS became more matured due to its wide use, and the price has risen, which may affect the domestic GGBFS market.
- CHC's suppliers provide stable supply of GBFS, together with the complete logistics network and excellent product quality, which will help strengthen customer relationships.
- Market internationalization, Expand international market, enhance market efficiency of CHC's products.

# Overseas Market - Export Layout

GBFS Cement Division



# Overseas Market – South Vietnam Grinding Plant Investment

GBFS Cement Division



Investment budget (factory + land) **USD 34,600,000**

Production capacity **1 million tons / year**

Date of completion **2021/02**

Source of raw material **Formosa Ha Tinh Steel**

Target customers **South Vietnam concrete industry**

# Increase The Process Materials Of The Cement Industry

Resource Reutilization Division

Mill scale

BFS

Mineral  
fines

BOFS



Increase the amount of mineral fines and BOFS as cement raw materials

1. Increase production of mineral fines and BOFS as raw material for cement plant
2. Issue the manual of BOFS as cement raw material for cement plant

# Manual

BOFS AC manual

BOFS Marine work construction manual

BOFS Paving brick manual

BOFS CLSM manual

Desulfurization Slag CLSM manual

BOFS Cement raw material manual

BOFS Road basement manual

Ministry of Economic Affairs reviewed and approved      Under review

# Construction Outline

Chapter 03377  
desulfurization slag is included in "controlled low-intensity backfill material"

Chapter 02701 "BOFS Asphalt Concrete Paving"

「 Specification for Land reclamation work by BOFS 」

Public Construction Commission Announcement      Under review



# Increase The Raw Materials Of The Steel Industry

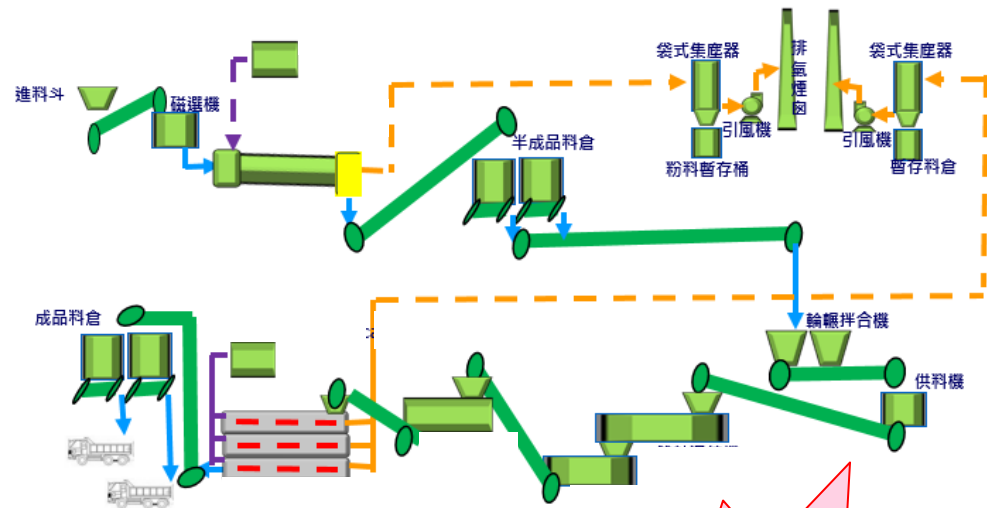
Resource Reutilization Division

Artificial fluorite



- Increase source of raw materials.
- Better quality.
- Secure marketing channel.

## Process improvement



Artificial fluorite  
process improvement

cut costs  
Increase  
production  
capacity

# Improve R&D Technology And Implement Circular Economy

Resource Reutilization Division

Technology, product development



BOFS Steam aging  
Technology  
development

Product quality  
improvement  
Value adding

Public constructions are widely promoted



BOFS SAM  
material:  
39,000 tons  
demanded in  
Kauhsiung city

Commit to resource sustainability and value innovation,  
Become an excellent enterprise in the circular economy



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