



Your True Partner
Chunbo Co., Ltd.

2023 1Q Investor Relations

2023. 05. 17



The financial information in this document are consolidated earnings results based on K-IFRS.

This document is provided for the convenience of investors only, before the external review on our Q1 2023 financial results is completed. The external review outcomes may cause some parts of this document to change.

This document contains "forward-looking statements" -that is, statements related to future, not past, events.

In this context, "forward-looking statements" often address our expected future business and financial performance, and often contain words such as "expects", "forecast", "anticipates", "intends", "plans", "believes", "seeks" or "will". "Forward-looking statements" by their nature address matters that are, to different degrees, uncertain.

The uncertainties may cause our actual results to be materially different from those expressed in this document.

Company Status

Summary

Company Name	Chunbo Co., Ltd.
Establish	Oct 08, 2007
listing	February 11, 2019
Location	Chungju-si, Chungcheongbuk-do, Gunsan-si, Jeollabuk-do
History	<p>2008 Display Process Materials</p> <p>2009 Pharmaceutical Intermediates</p> <p>2011 Semiconductor process material</p> <p>2013 OLED common layer material</p> <p>2013 Secondary Battery Electrolyte Additive</p> <p>2016 Secondary Battery Lithium Salts</p> <p>2017 Established a local subsidiary in China</p> <p>2021 Venture Company Reselection</p> <p>2022 Appointed as the leading company in materials, parts and equipment</p> <p>2023 Saemangeum plant completed</p>

CEO Profile



Lee Sang-yul (CEO)

- Development of semiconductor process chemicals
- First localization of display etching materials
- Commercialization of LiFSI for the first time in the world

2022. Awarded Gold Tower Order of Industrial Service Merit

2021. Established Chunbo BLS Co., Ltd.

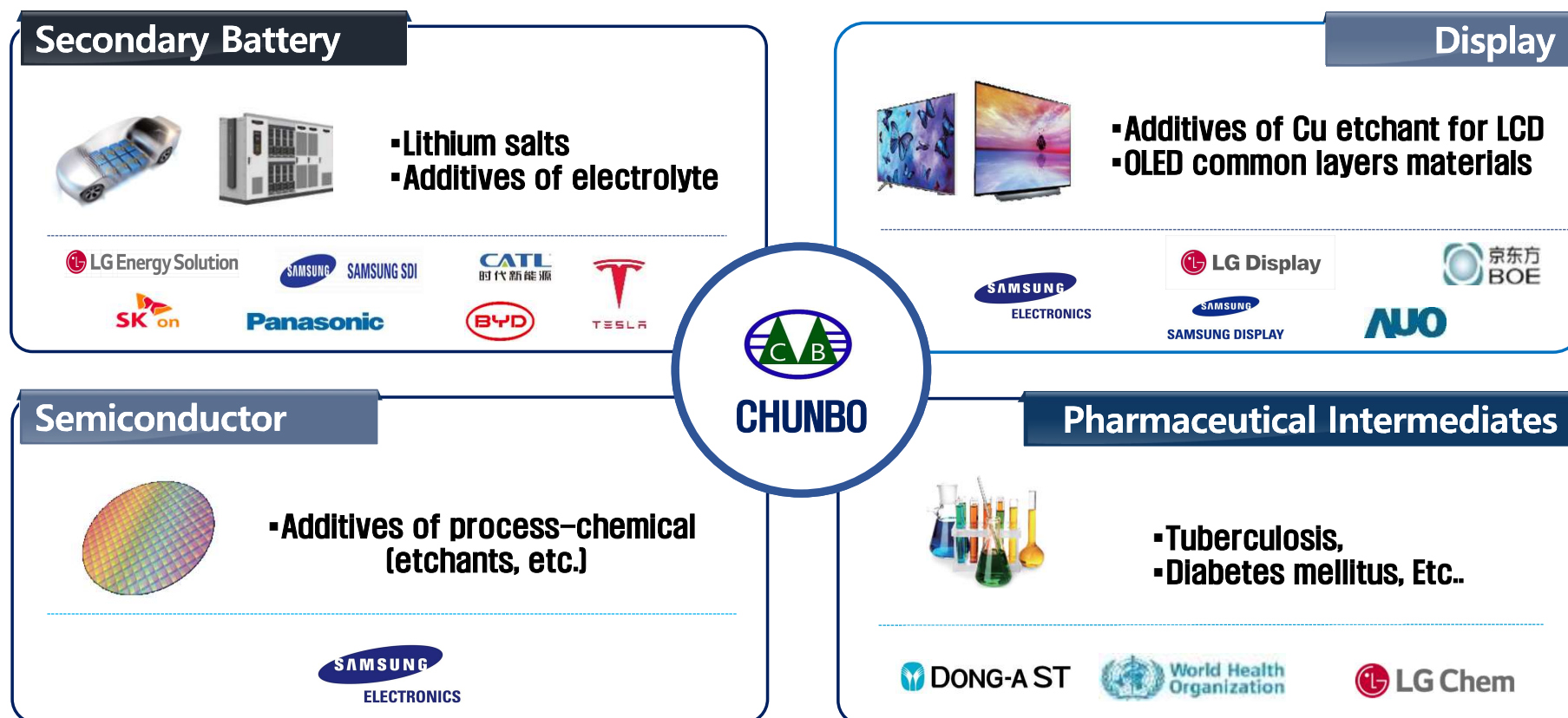
2007. Established Chunbo Co., Ltd.

1997. Established Chunbo Fine Chemical Co., Ltd.

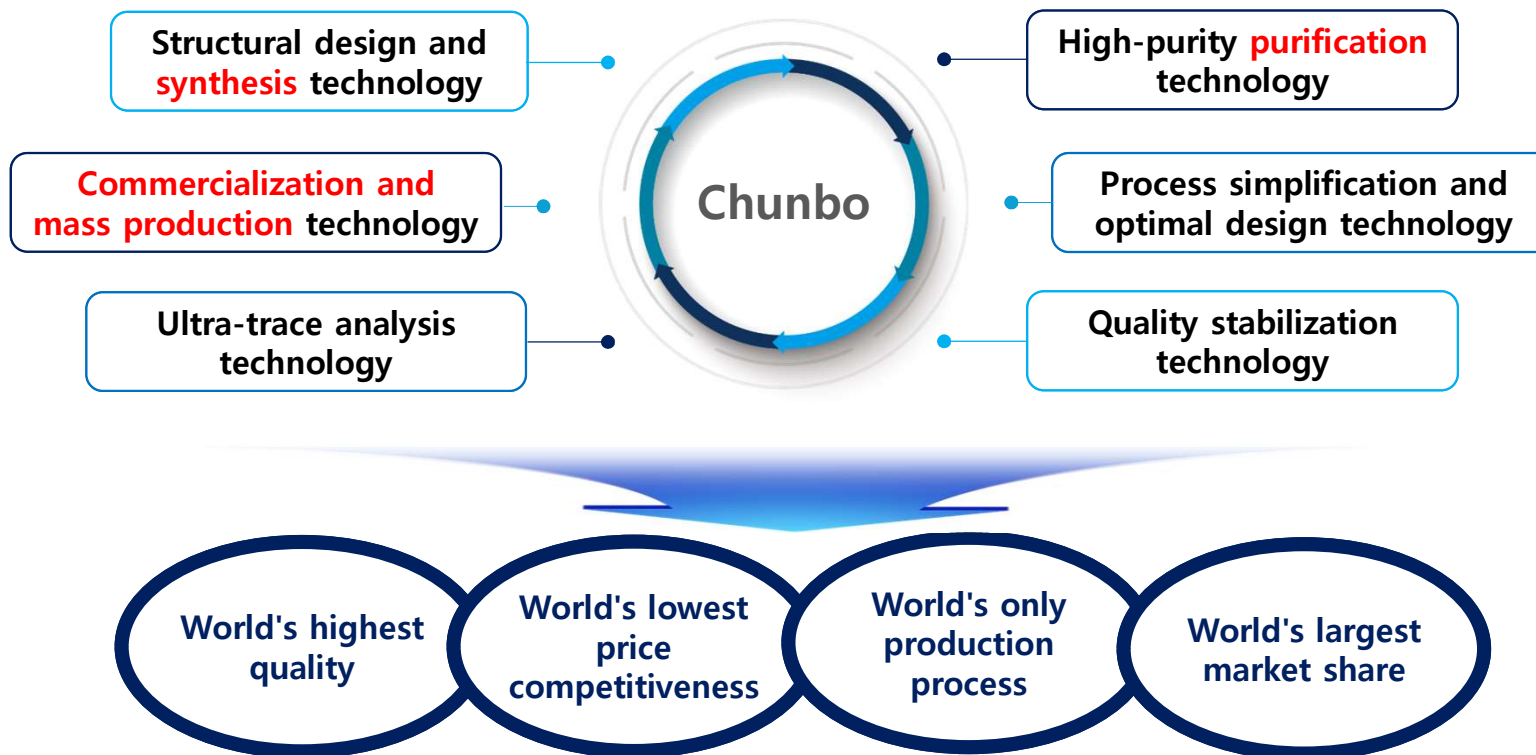
1992. Researcher, OCI Central R&D Center

1993. Master of Chemical Engineering, Hanyang University

Business positioning



Synthesis and purification of chemicals (Fine chemistry)

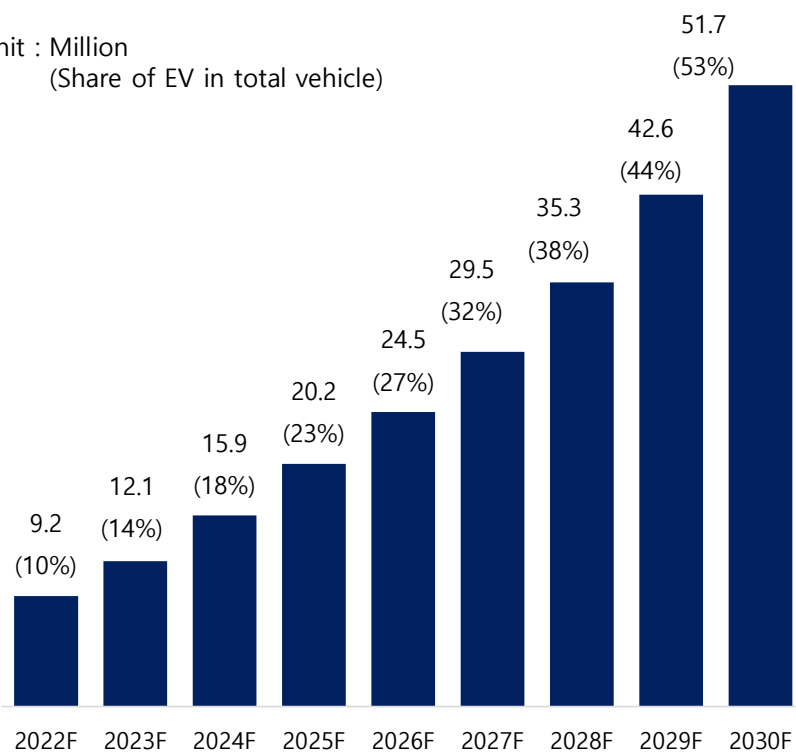


Lithium-ion Secondary Battery

Electric vehicle(EV) market outlook

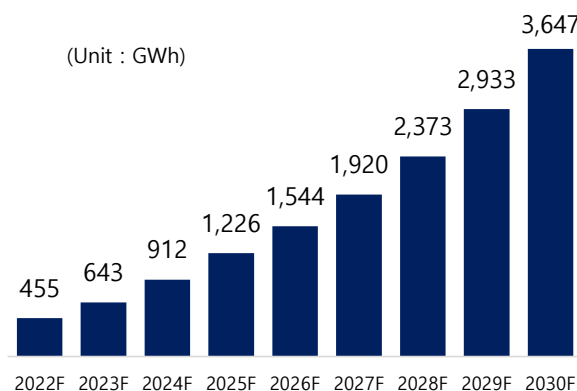
Unit : Million

(Share of EV in total vehicle)

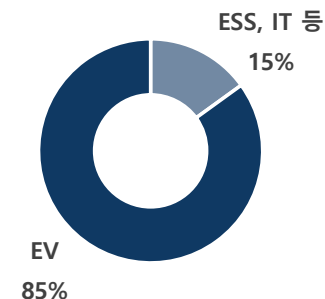


Battery market outlook for Electric Vehicle(EV)

(Unit : GWh)



LIB's EV Share Forecast (2030)



2030 : EV 60% target
2035 : To ban the sale of internal combustion engines
2030 : GHG reduction by 55% (compared to 1990)



2030 : EV 50% target
2030 : Target to build 500,000 charging stations

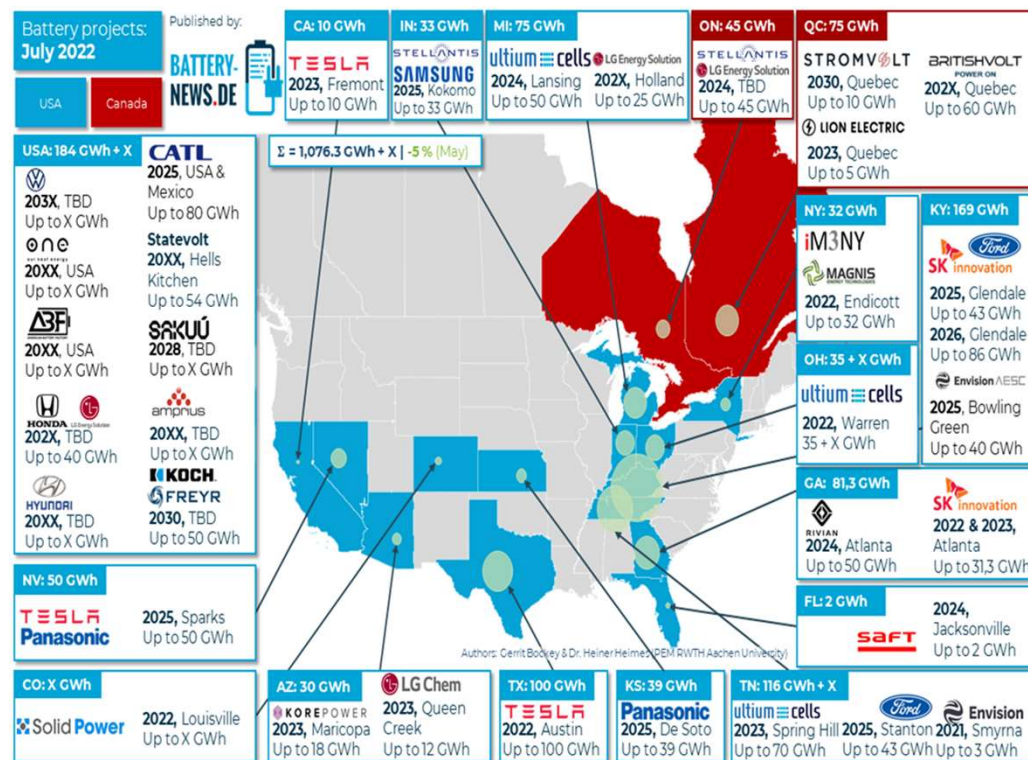


Mandatory EV production share (2023 : 18%)
2035 : To ban the sale of internal combustion engines

* Source : SNE Research

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Chunbo Co., Ltd.

 **North America**



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Lithium-ion Secondary Battery

Existing item CAPA Plan

Unit : Metric ton/year

Description	Current	2024 Extension (P)	2025 Extension (P)	2026 Extension (P)	2027 Extension (P)	Accumulate CAPA (E)	SITE
LiFSI	10,000	-	20,000	-	20,000	50,000	Gunsan
FEC	5,000	-	-	5,000	-	10,000	"
VC	5,000	-	-	5,000	-	10,000	"
TDT	200	-	800	-	1,000	2,000	"
LiPO ₂ F ₂	3,000	1,000	1,000	1,000	1,000	7,000	Chungju
LiBOB	500	-	500	-	-	1,000	"
D-1 (22% Solution)	1,200	-	-	-	-	1,200	"
D-2 (22% Solution)		1,200	-	-	-	1,200	"
Total	24,900	2,200	22,300	11,000	22,000	82,400	

Lithium-ion Secondary Battery

To be released CAPA Plan

Unit : Metric ton/year

Description	2023 Extension (P)	2024 Extension (P)	2025 Extension (P)	2026 Extension (P)	2027 Extension (P)	Accumulate CAPA (E)	SITE
ESA		3,000		1,500		4,500	Gunsan
PS		2,500		2,500		5,000	"
PRS		500	500			1,000	Chungju
PIC(HS**)	200			200		400	"
LiBF4		500			500	1,000	"
CA-01	100		100		100	300	"
DFEA			2,000		2,000	4,000	"
Total	300	6,500	2,600	4,200	2,600	16,200	
CAPEX (E)	-	170,000	400,000	250,000	430,000	1,250,000	

Lithium-ion Secondary Battery

Characteristics of the product

Item	Characteristic	Name
LiFSI	Improved safety and cycle number, suppressed discharge at low temperature of batteries	Lithium bis(fluorosulfonyl)imide
FEC	Reduced interfacial resistance, Conductivity improvement	Fluoroethylene carbonate
VC	Improved safety and cycle number, Heat deterioration suppression	Vinylene carbonate
ESA	Suppression of anode surface decomposition, reducing interfacial resistance	Ethylene sulfate
PS	Suppression of side reactions occurring at the cathode during high-temperature storage and improvement of high-temperature storage characteristics	1,3-Propane sultone
TDT	Improved safety and cycle number	2,4,8,10-tetraoxa-3,9-dithiaspiro[5.5]undecane 3,3,9,9-tetraoxide

Lithium-ion Secondary Battery

Characteristics of the product

Item	Characteristic	Name
LiPO ₂ F ₂ (P)	Improved cycle number, high power, and shortened charging time of batteries	Lithium difluoro phosphate
LiBOB (B)	Improved high power and Instantaneous power boost	Lithium bis(oxalato)borate
LiDFOP (D-1) (22% Solution)	Improved cycle number, high power, and shortened charging time of batteries	Lithium difluoro(bisoxalato) phosphate
LiPFS (D-2) (22% Solution)	Improved cycle number, high power, and shortened charging time of batteries	Lithium (difluorophosphoryl) (fluorosulfonyl)amide
PRS	Suppression of gas generation, improved safety	1,3-Propene sultone
PIC (HS**)	Inhibiting cathode surface decomposition, improving high-temperature performance	2-propynylester-1H-Imidazole-1-carboxylicacid
LiBF ₄	Excellent thermal stability, moisture resistance, improved capacity and cycle performance, improved low-temperature performance	Lithium tetrafluoroborate
CA-01	Improved cycle number and high temperature storage	Methyl 2-propynyl carbonate
DFEA	Excellent charge/discharge efficiency, excellent oxidation resistance	2,2-Difluoroethyl acetate

Lithium-ion Secondary Battery

Lithium bis(fluorosulfonyl)imide (LiFSI)

- Development of **the world's only new method** and process that can **reduce manufacturing cost by more than 50%**
(This method does not use CSA, CSI, BA, and uses inexpensive raw materials such as H*, S**, U***, etc.)
- Optimization of refining technology and production processes
- Recycling of all by-products (**cost reduction, environmental improvement**)
- Target to achieve 25% operating profit ratio

Securing product competitiveness in the market

Satisfying the needs of customers

Goal is to achieve more than 60% of the global market share

Lithium difluoro phosphate (LiPO₂F₂)

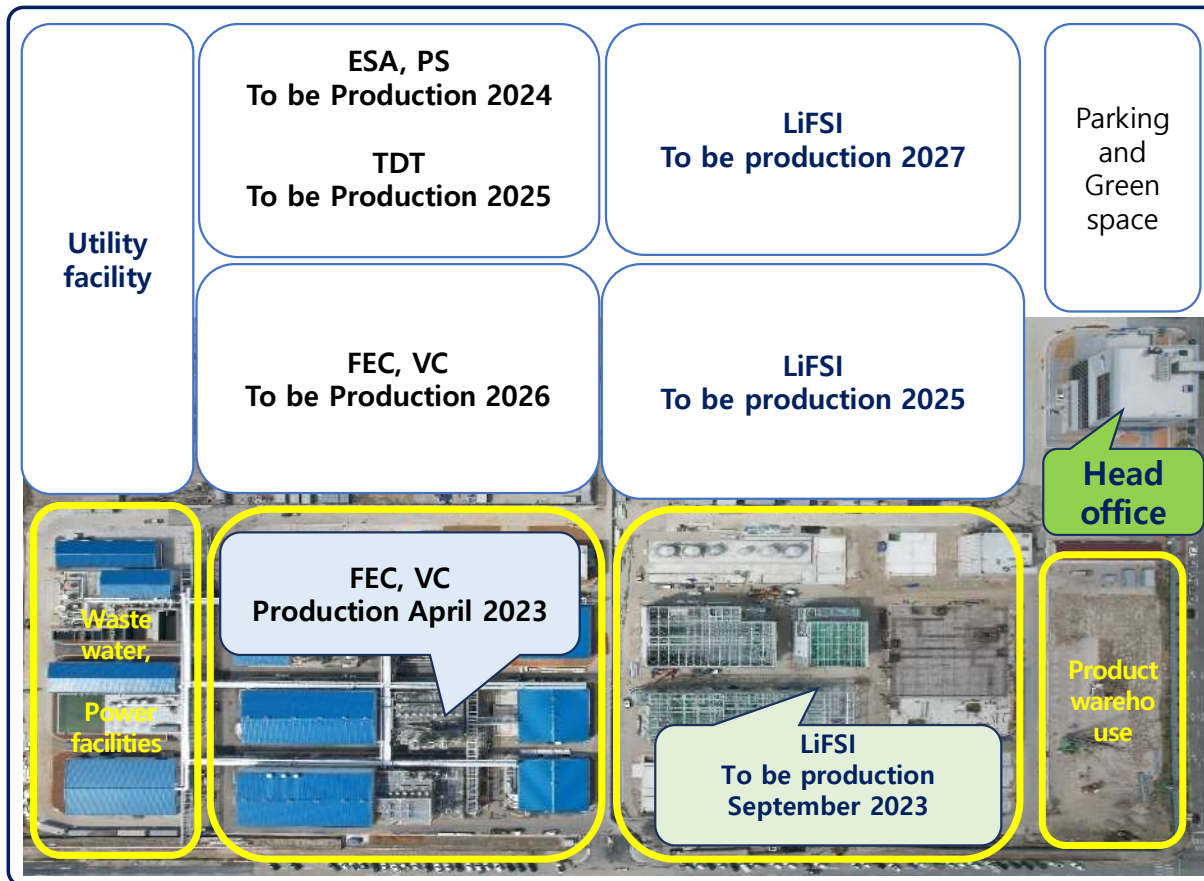
- Change of raw materials and the **world's only new process** development, direct manufacturing of basic materials
(**30% reduction in manufacturing cost** by inexpensive raw materials without using LiPF₆)
- Resolving unstable supply of raw materials, stabilizing product prices
- **Reuse of waste solvent, minimize waste**
- Target to achieve 25% operating profit ratio

Supply of equal quality products to customers

Securing stable supply capacity

Goal is to achieve more than 90% of the global market share

Lithium-ion Secondary Battery



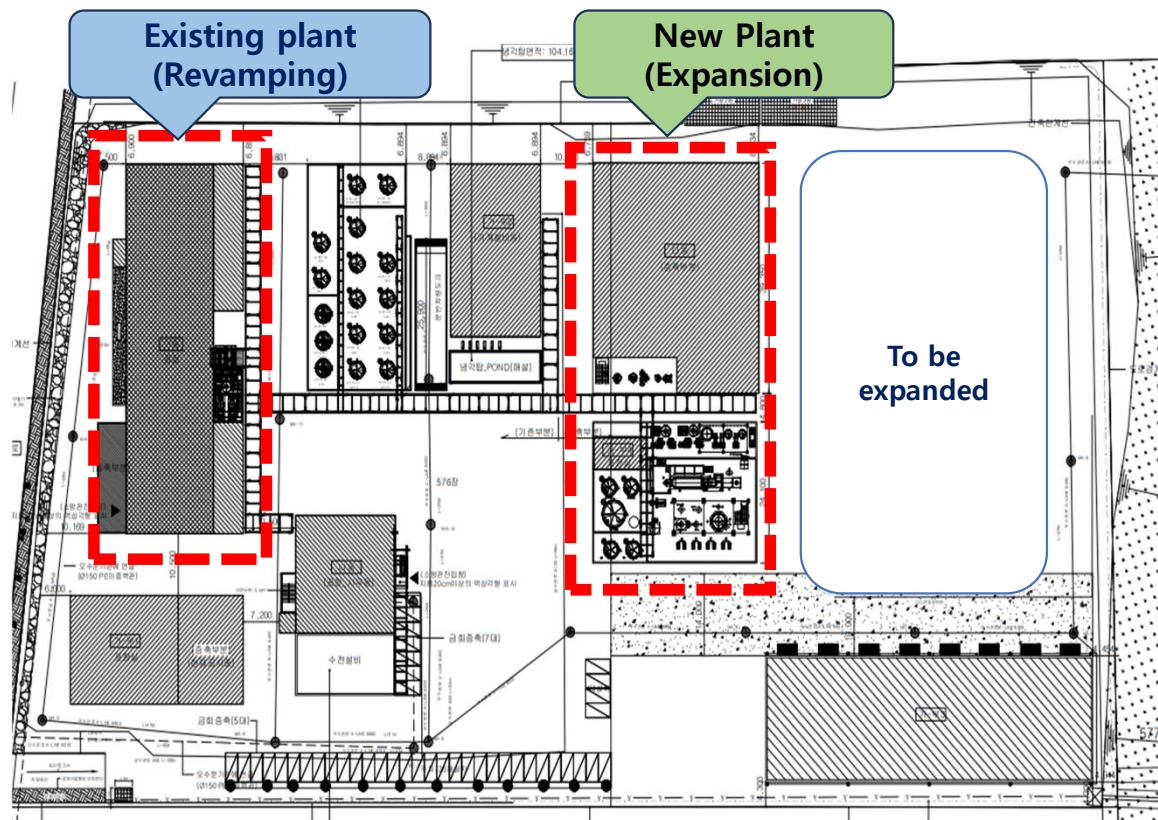
- Land area : 220,751m²
- Item : LiFSI, FEC, VC, ESA, PS

Site for Saemangeum(Gunsan) project

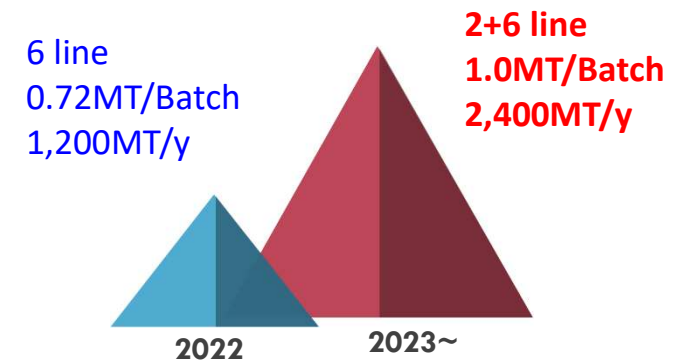


Lithium-ion Secondary Battery

■ Lithium difluoro phosphate (LiPO_2F_2)



Revamping of existing plant and expansion of new plant with innovative new manufacturing methods



Lithium-ion Secondary Battery

Customer Status



- LG ES
- SAMSUNG SDI
- SK ON
- SOULBRAIN
- SOULBRAIN E&I MYLAISIA SDN
- JCEL
- ENCHEM
- DONGWHA Electrolyte
- MUIS KOREA



- SHENZHEN CAPCHEM TECHNOLOGY
- ZHANGJIAGANG GUOTAI HUARONG
- DONGGUAN SHANSHAN BATTERY
- LANGWEI CHEMICAL(DFD)
- Yundu New Energy Technology
- Guangzohu Tinci Materials Technology



- PANASONIC
- CENTRAL GLASS
- MUIS CHEMICAL



- LG ES
- SAMSUNG SDI
- SK ON
- TESLA
- SOULBRAIN MI
- ENCHEM AMERICA LLC
- MUIS CHEMICAL



- Northvolt
- MUIS CHEMICAL
- CENTRAL GLASS CZECH SRO
- SOULBRAIN HU KFT
- GUOTAI POLAND SP
- DONGWHA ELECTROLYTE HUNGARY
- ENCHEM POLAND SP
- CAPCHEM POLAND
- SOLVIONIC

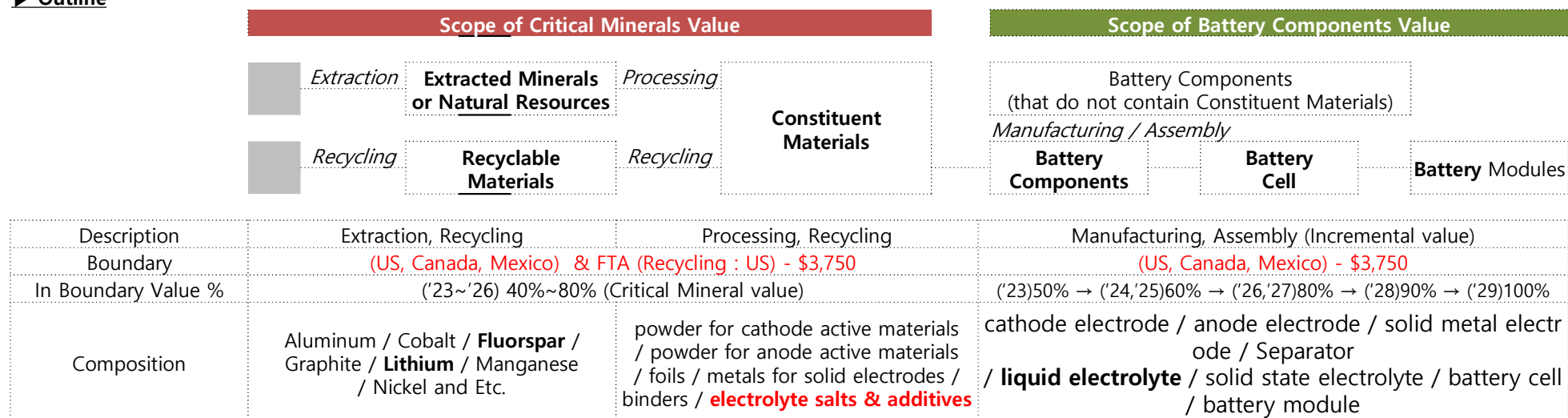
Lithium-ion Secondary Battery

Inflation Reduction Act(IRA)

Critical Minerals and Battery Component Value Calculation for the New Clean Vehicle Credit

Credit : \$7,500 (limited to cases where the EV is finally assembled in North America)

► Outline



Section 13502: Advanced Manufacturing Production Tax Credit (AMPC) - TAX Code Section 45X

Tax credit for U.S. manufacturing production of battery cells and modules and refining of key minerals

1. Battery Cell: **\$35 / KWh** 2. Battery Module: **\$10 / KWh** 3. Electrode Material: **10% of processing cost** 4. Critical Mineral: **10% of processing cost**

Electronic & Other Materials

LCD Etching material

Role of LCD Etchant additive material

- Etching time adjustment
- Fine pattern formation
- Reduction of defective products

Global M/S
95%+

OLED material

- RED luminescent material (RS-85)
- Intermediate (BD-81, BD-83)
- Common layer material (H-369, H-668)
- Response to demand as an OLED producer
(collaboration from development to mass production)

Materials for semiconductor micropattern processing

Process
chemical

Etchant
additive

- Heat resistance
- Improved precision, Fine pattern formation
- Reduction of defective products

M/S **90%+**

Pharmaceutical Intermediates

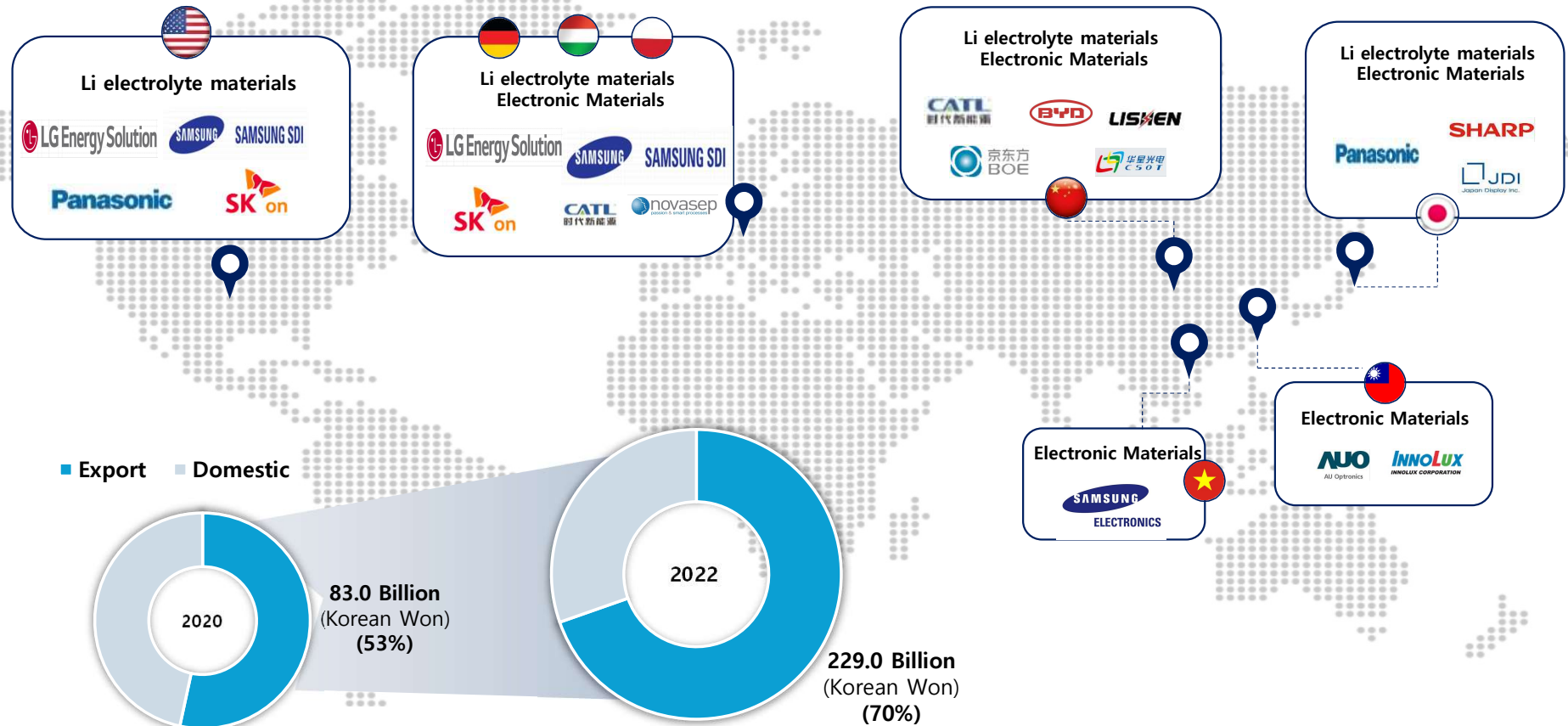
Tuberculosis

 DONG-A ST

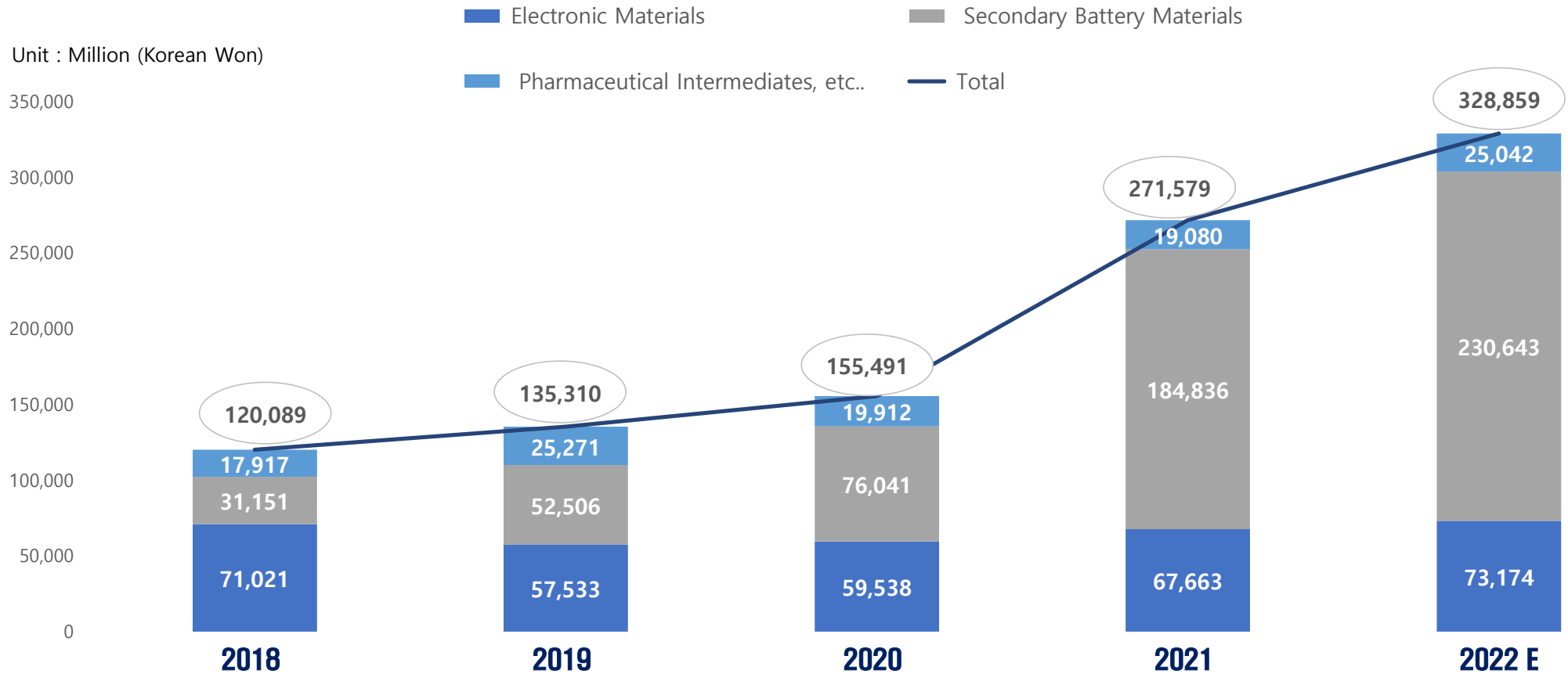
Diabetes mellitus

 LG Chem

04-2. Global Business Network



Consolidated Sales (ITEM)



Consolidated Financial Report

» CONSOLIDATED BALANCE SHEETS

Unit : Million (Korean Won)

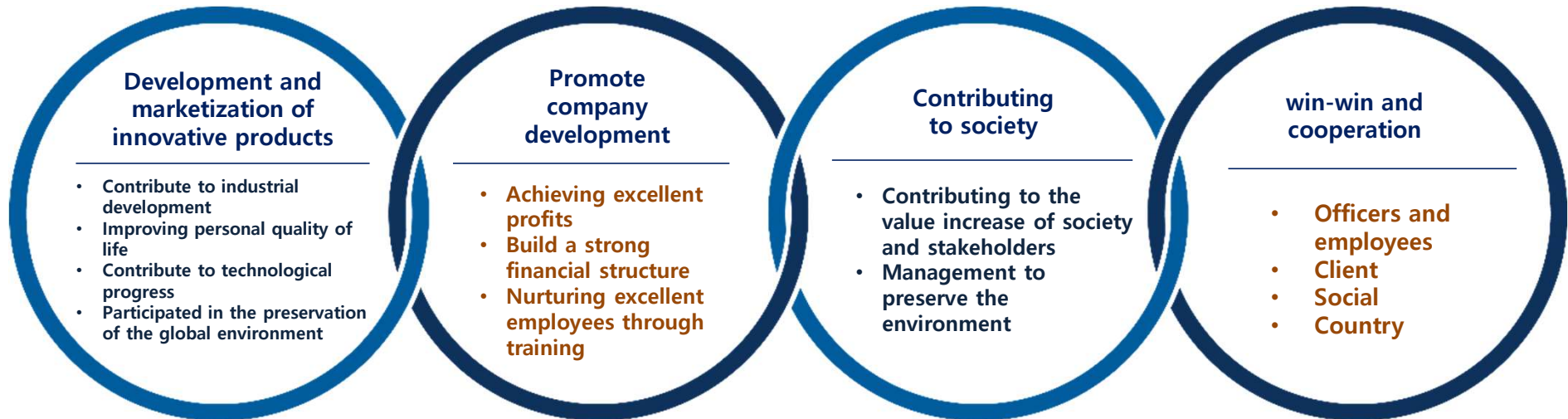
Description	12/31/2021	12/31/2022	03/31/2023
CURRENT ASSETS	227,645	439,442	422,294
NON-CURRENT ASSETS	176,949	379,214	476,999
TOTAL ASSETS	404,594	818,656	899,293
CURRENT LIABILITIES	68,053	148,425	229,382
LONG-TERM LIABILITIES	30,486	275,390	275,804
TOTAL LIABILITIES	98,539	423,815	505,186
CAPITAL STOCK	5,060	5,060	5,060
CAPITAL SURPLUS	96,291	119,439	119,547
RETAINED EARNINGS	183,441	218,577	217,739
NON-CONTROLLING INTEREST	21,263	51,765	51,761
TOTAL STOCKHOLDERS' EQUITY	306,055	394,841	394,107

» CONSOLIDATED INCOME STATEMENTS

Unit : Million (Korean Won)

Description	2021/Year	2022/Year	2023/1Q
SALES	271,579	328,859	46,998
COST OF SALES	217,168	263,928	43,218
GROSS PROFIT	54,411	64,931	3,780
SELLING AND ADMINISTRATIVE EXPENSES	3,782	7,368	2,143
OPERATING INCOME	50,629	56,473	1,637
NON-OPERATING REVENUES	5,841	18,727	8,255
NON-OPERATING EXPENSES	1,527	39,123	4,470
INCOME BEFORE INCOME TAX EXPENSES	54,943	36,077	5,422
NET INCOME	48,015	42,836	4,118

Company's core values



- Facilitate application to forward and backward industries for carbon neutrality
- Contributed to related industries and economic development
- Pursuing eco-friendliness (RE100, etc.), strengthening competitiveness in related industries, and creating added value by inducing large-scale investment
- Reinforcing research cooperation with related universities and research institutes
- Practice social responsibility by returning profits to society