

Leading Provider of Sustainable Future Materials

posco
HOLDINGS

2022 Earnings Release

2023. 1. 27.



Disclaimer

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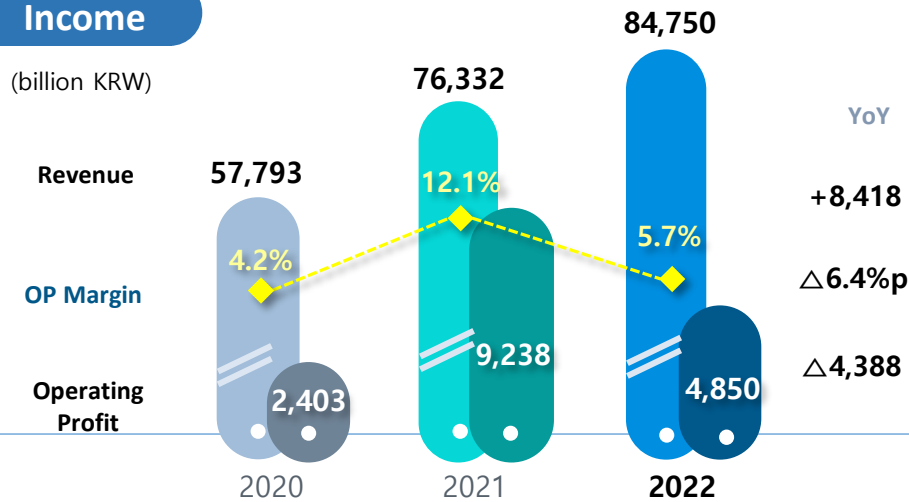
- **Consolidated Business Performance**
- **Major Business Activities**
- **Business Performance by Major Areas**
- **2023 Business Outlook**
- **Appendix**

Consolidated Business Performance

Green infrastructure · Green materials businesses showed growth, while steel profit weakened due to the flood and slow demand

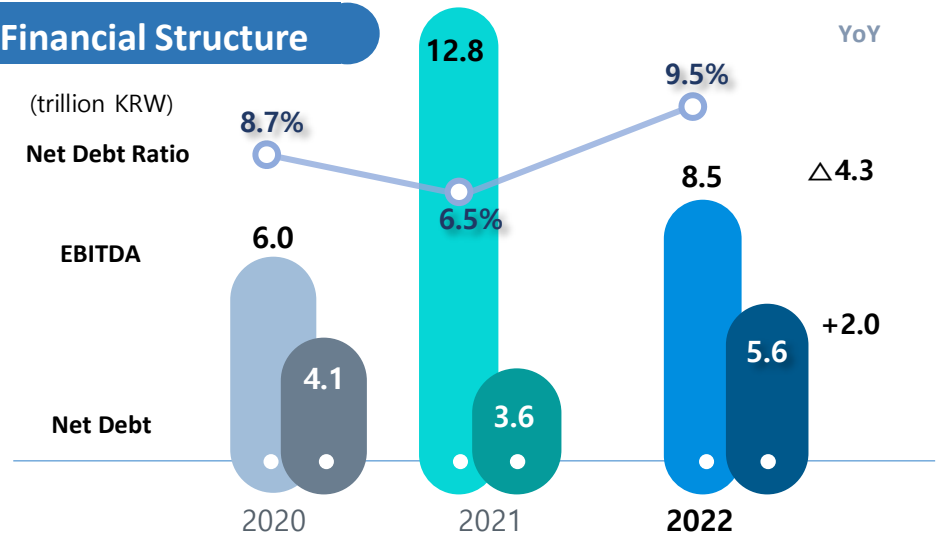
Income

(billion KRW)



Financial Structure

(trillion KRW)



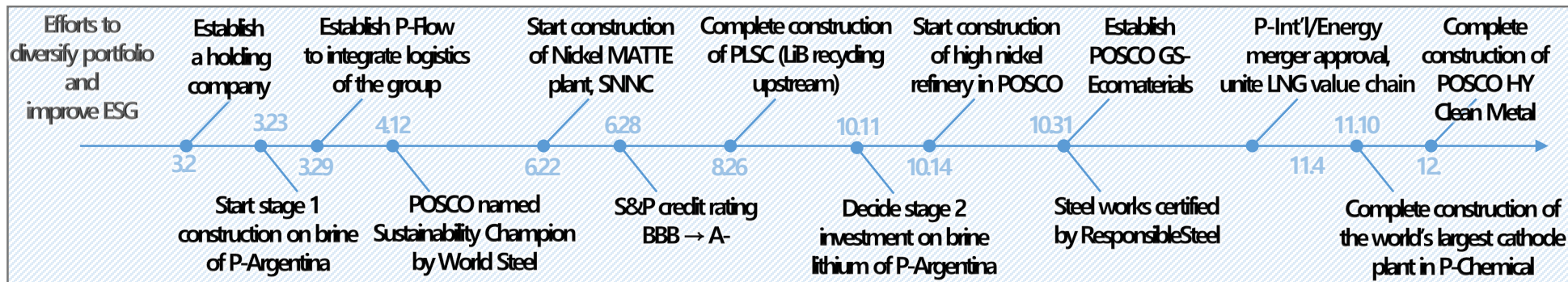
【Before Inter-company Transaction Adjustment】

(billion KRW)	Revenue				Operating Profit			
	2021	4Q	2022	YoY	2021	4Q	2022	YoY
Steel	66,737	15,112	70,650	+3,913	8,440	△718	3,236	△5,203
POSCO*	39,920	8,675	42,695	+2,775	6,650	△623	2,295	△4,355
Overseas Steel	21,712	5,487	23,933	+2,221	1,474	△166	474	△1,000
Green Infrastructure	54,104	14,885	65,901	+11,797	1,214	235	1,544	+330
POSCO International	33,949	7,967	37,990	+4,041	585	169	903	+318
POSCO Energy	1,976	1,151	3,707	+1,731	203	40	271	+68
POSCO E&C	8,199	2,571	9,435	+1,236	441	22	309	△132
Green Materials	2,089	808	3,389	+1,300	113	△7	144	+31
POSCO Chemical	1,990	781	3,302	+1,312	122	3	166	+44

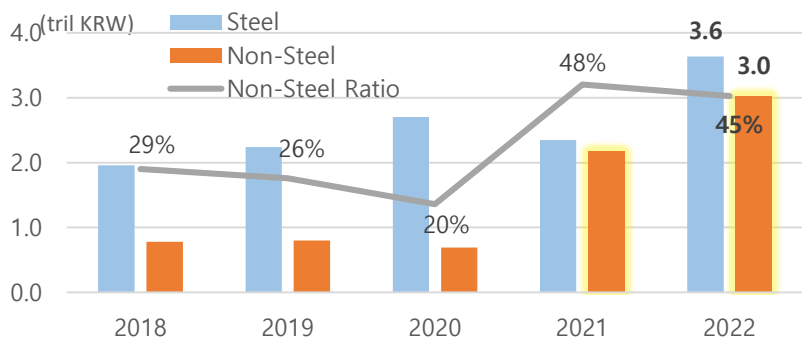
* POSCO Parent result before the vertical spin-off is included

Major Business Activities_Expansion of Future Growth Businesses

Secured long-term growth engines for Green materials-energy sector and put continuous efforts to improve business structure under a holding company in 2022

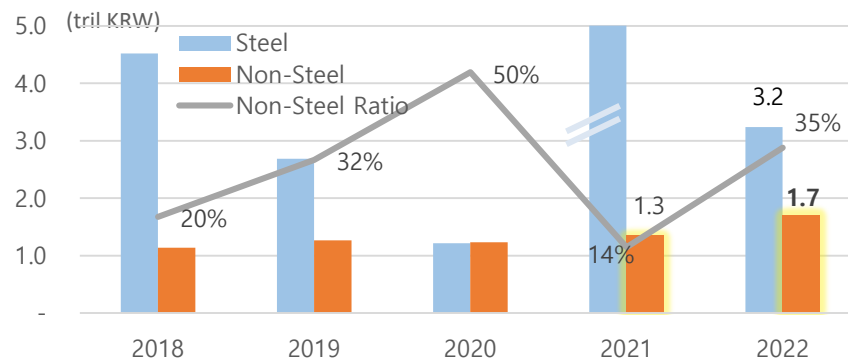


Steel/Non-Steel CAPEX



(%)	2018	2019	2020	2021	2022
Net Debt Ratio	20.4	16.6	8.7	6.5	9.5

Steel/Non-Steel OP Trend



(tril KRW)	2018	2019	2020	2021	2022
Non-Steel Revenue	43.4	43.2	39.7	56.3	69.4

* P-Holdings' revenue(dividend income) and OP were eliminated from Non-Steel's

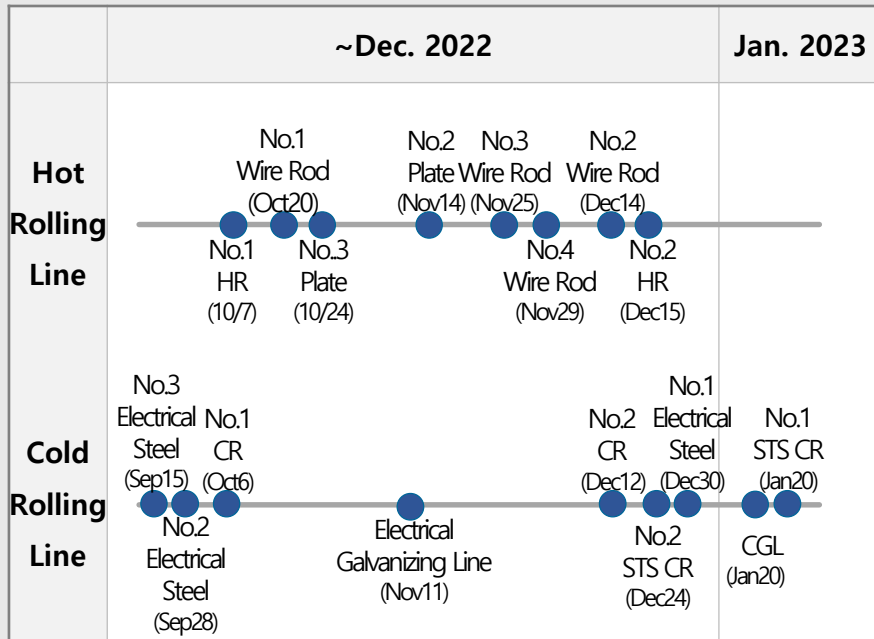
Full restoration from the flood damage

Completed the restoration of Pohang Steel Works on Jan. 20,
and reinforced its disaster prevention system

Recovery Progress

○ Completed the restoration of all 17 steel-processing facilities and started normal operations at Pohang Works

- No.1 Plate line was shut down due to production efficiency
(Production capacity : 600k tons)



Prevention of Recurrence

- **System** : Established BCP(Business Continuity Planning)
 - Reinforced comprehensive anti-disaster measures in dealing with situations of typhoon/earthquake/fire, etc.
 - Improved counterplans and manuals of response actions, not only for natural disasters but major accidents including fire/explosion/collapse.
- **Material** : Supplemented infrastructure to avoid the flood, etc.

Impact

✓ Operating loss 1,340 bil KRW

(bil KRW)	3Q22	4Q22	2022
POSCO	408	857	1,265
Impact on production/sales decline*	222	568	790
Inventory loss	94	1	95
Repair, material cost	92	288	380
Subsidiaries	27	47	74
Total	436	904	1,340

* Based on IFRS, increased amount of fixed cost caused by temporary production drop was realized 3Q and 4Q COGS

✓ Non-OP loss 236 bil KRW : impairment loss on tangible assets

※ Receipt of insurance on 4Q22 : 234 bil KRW

Completed construction of PLSC, POSCO HY Clean Metal

Started commercial production of cathode materials by recycling with construction completion of PLSC · POSCO HY Clean Metal

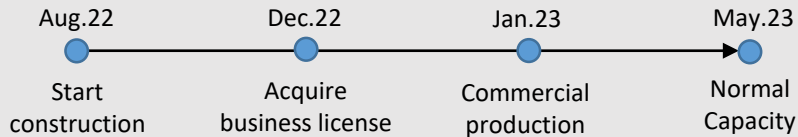
[Upstream] PLSC*

* Poland Legnica Sourcing Center

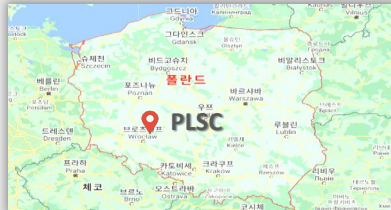
○ Outline

- Business model : crushing secondary battery scrap and providing black mass** to POSCO HY Clean Metal
- Location : Brzeg Dolny, Poland
- Processing cap. : secondary battery scrap 10k tons/yr
- Production cap. : black mass 8k tons/yr
- Revenue cap. : 70 bil KRW in 2023 (forecast)

○ Schedule



【 PLSC plant (completed) 】



[Downstream] POSCO HY Clean Metal

○ Outline

- Business model : extracting cathode materials such as lithium, nickel, cobalt, etc. using black mass
- Location : LiB materials Complex of Gwangyang, Korea
- Processing cap. : black mass 12k tons/yr
- Production cap. : 7 products including nickel 2.5k tons/yr, cobalt 0.8k tons/yr, lithium carbonate 2.5k tons/yr
- Revenue cap. : 110 bil KRW in 2023 / 300 bil KRW in 2024 (forecast)

○ Schedule



【 POSCO HY Clean Metal plant (completed) 】



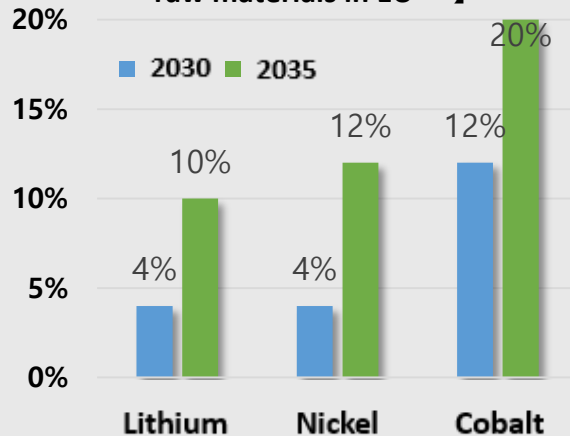
** Black Mass : Black powder obtained by crushing and selectively collecting lithium-ion battery scrap(lithium, nickel, etc.)

Mid-to Long-term Strategies of Recycling Business

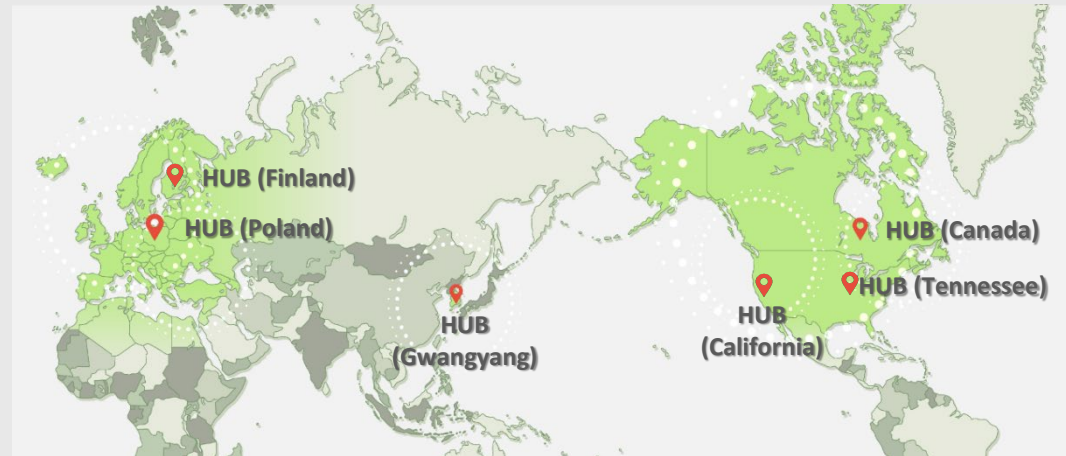
Expand global supply chain of materials through localization by region, in connection with POSCO Chemical's cathode business

- **Build the 'Closed Loop' of 'scrap→cathode' by recycling business associated with cathode orders**
 - Secondary battery manufacturers and OEMs prefer 'Closed Loop' supply chain due to increasing restrictions on the quantity used of recycled raw materials
- **Review to establish plants in North America and EU, in order to satisfy needs for supply chain localization of secondary battery materials**
 - In preparation for U.S. IRA* , EU CBAM/Digital Battery Passport, localization is necessary
- ✓ **By 2030, secure recycling production cap. of nickel 30k tons, lithium carbonate 30k tons, cobalt 5k tons**

【Mandatory usage rate of recycled raw materials in EU**】



【Candidates by region】



* IRA : Inflation Reduction Act ** Source : EU Batteries Regulation(under consideration)

Technology Development for LiB Recycling

Developing next-generation pyrometallurgical technology

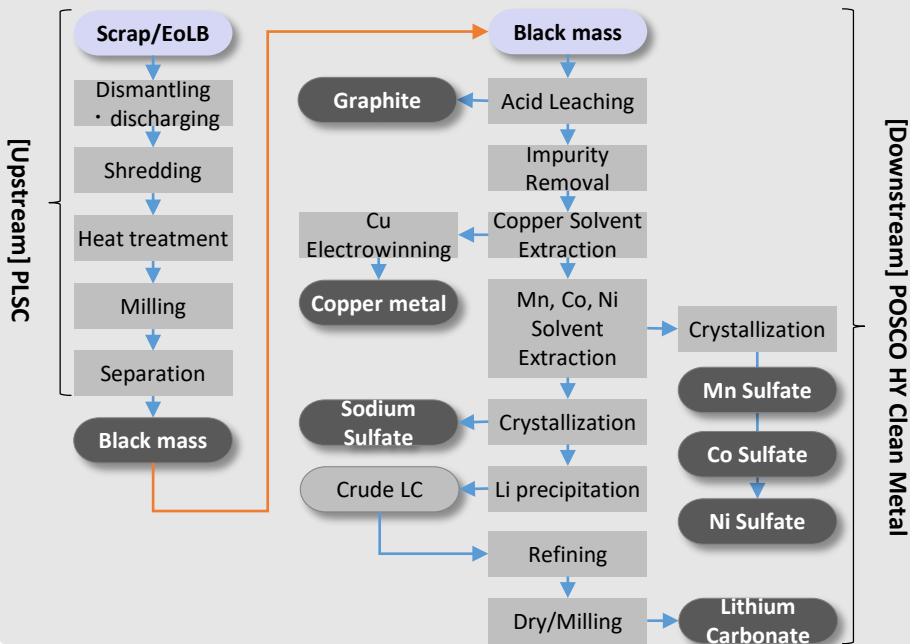
by combining POSCO's smelting technology with currently existed production process

Current Process

○ Process Highlights

1. Highest level of Ni, Co recovery rate in the industry
2. Li recovery rate : minimum 85% (battery-grade)
3. Reducing No. of workers by production automation (Refining, 60% of Chinese companies)

○ Process Flow



Developing Process (R&D stage)

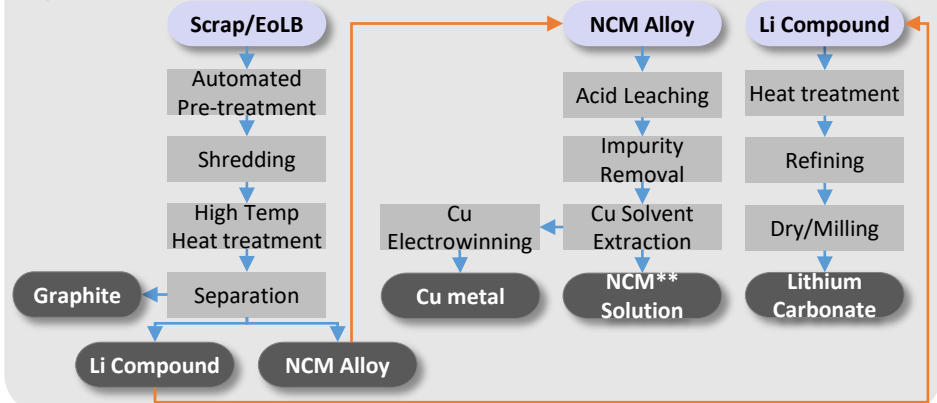
○ Background

- Currently, workers manually dismantle packs and modules which makes difficult to process large volume of end of life batteries(EoLB) with safety concerns
- With own capability, POSCO is developing pyrometallurgy technology for mass EoLB treatment

○ Process Highlights

1. Automated pre-treatment process for mass production without dismantling and discharging
2. High-purity NCM* alloy and Li compound production by high temperature heat treatment
3. Simplified process compared to conventional hydrometallurgy reduces CAPEX and increases Li recovery rate

○ Process Flow



* Nickel, Cobalt, Manganese, Copper alloy ** Nickel, Cobalt, Manganese liquid
4Q22 Earnings Release | January 27, 2023

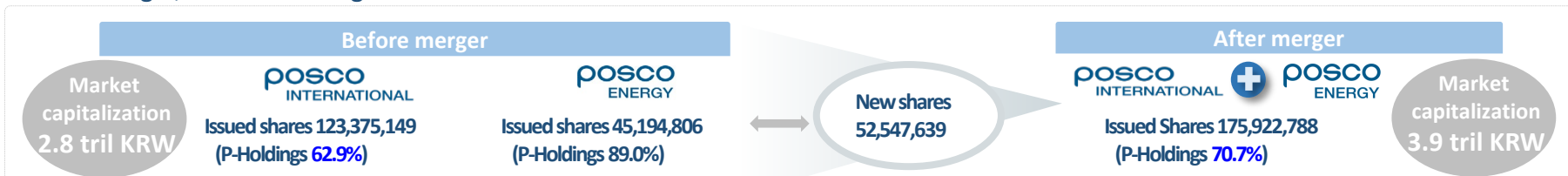
Integrated corporation of P-International and P-Energy

Create synergy through integration of value chain in energy sector
 → Strengthen the group's business portfolio

Outline

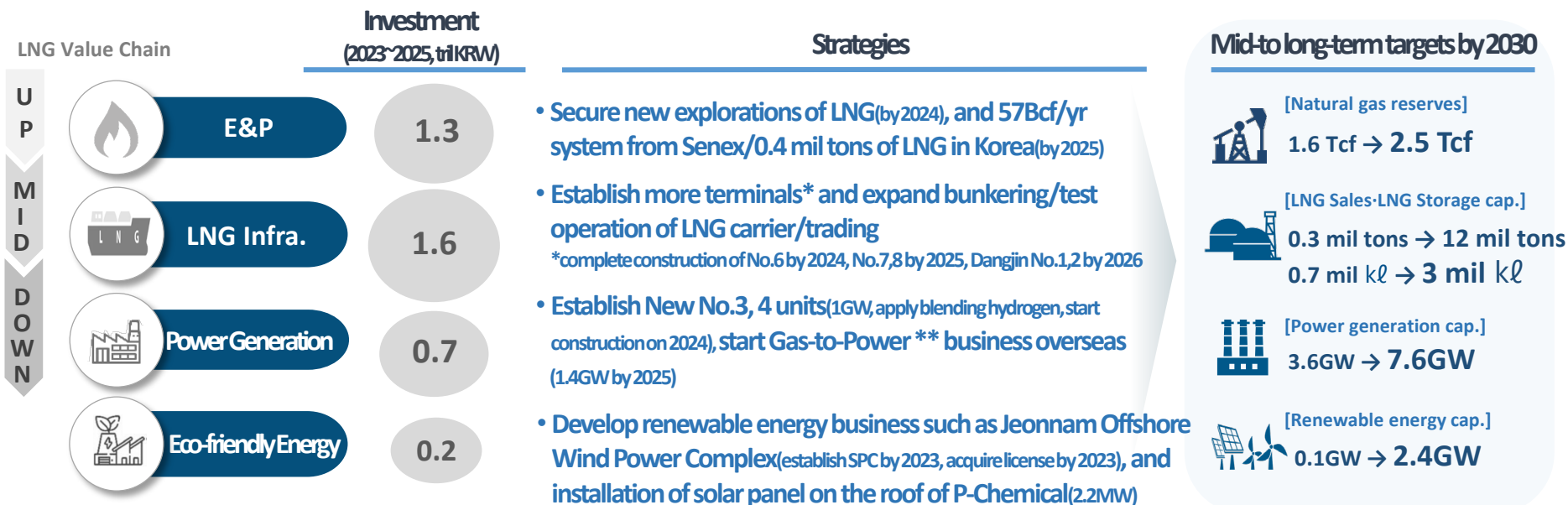
Statutory merger of P-International(remaining company) to buy P-Energy(extinguished company),
 the integrated corporation officially launched on Jan.1, 2023

- After merger, POSCO Holding's stake of POSCO International will be increased from 62.9% to 70.7%



Objective

Invest 3.8 tril KRW by 2025, and become the group's 3rd growth engine by completion of LNG value chain and transition to Green energy business



Business Performance by Major Areas

Steel

- POSCO · Production/Sales · Income/Financial Structure
- Overseas Steel · PT-KP · PZSS · P-Maharashtra · PY-VINA

Green Infrastructure

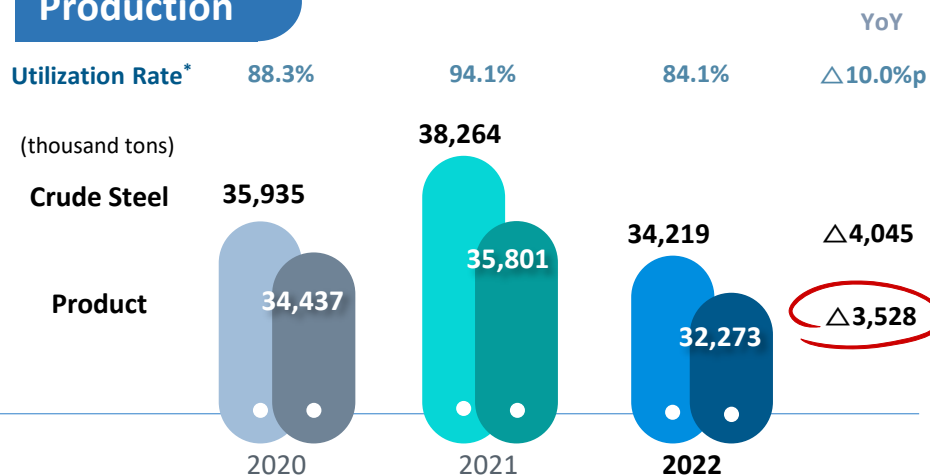
- POSCO International
- POSCO Energy
- POSCO E&C

Green Materials

- POSCO Chemical

POSCO_Production/Sales

Production



* Utilization rate : Crude Steel Production / Crude Steel Capacity

○ Crude steel and product production volume decreased due to the flood damage, Gwangyang No.4 BF repair and Pohang No.1 BF shutdown

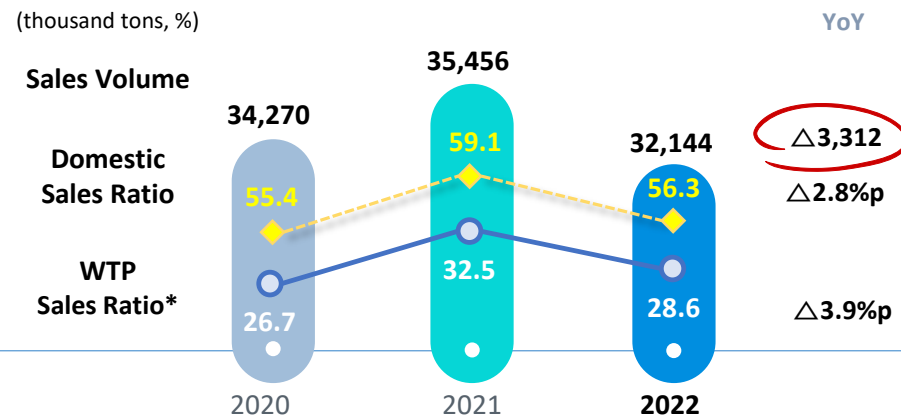
- Pohang) No.1 BF shutdown(Dec.29, 2021), the flood(Sep.6, 2022)
- Gwangyang) No.4 BF repair (Feb.11~Jun.10, 2022, 119 days)

【Carbon Steel/STS Production Volume】

	(k tons)				
	1Q22	2Q22	3Q22	4Q22	QoQ
Carbon Steel	7,930	7,886	7,552	7,428	$\Delta 124$
STS	523	455	348	151	$\Delta 197$

* 1Q22 : Included POSCO Parent result before the vertical spin-off

Sales



*Un-ordered and semi-product figure excluded in total sales volume

○ Sales volume shrunk in 2H 2022 as production volume decrease due to slow demand and the flood damage on rolling lines in Pohang Works

- Softened the impact of sales volume decrease by maximizing production of Gwangyang Works and sales of slab

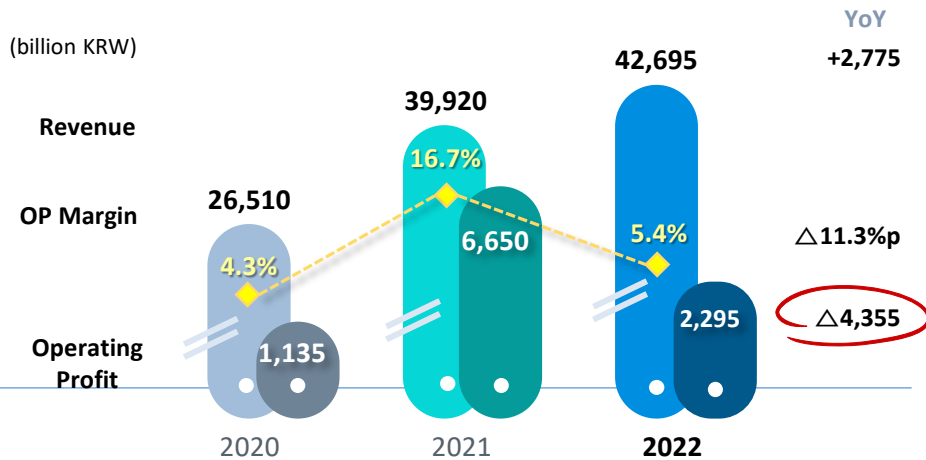
【Sales volume by quarter】

(k tons)	1Q	2Q	3Q	4Q	2022	YoY
CR/Coated	2,081	1,917	2,039	1,818	7,855	$\Delta 497$
Plate	1,308	1,392	1,220	971	4,891	$\Delta 663$
HR	2,099	2,068	2,035	2,260	8,462	$\Delta 638$
STS	494	453	352	186	1,487	$\Delta 496$
Products Sales Volume	8,454	8,239	7,904	7,547	32,144	$\Delta 3,312$
※ WTP	2,468	2,232	2,200	1,782	8,682	$\Delta 2,343$
※ Sales of Slab	95	112	144	706	1,057	+393

* 1Q22 : Included POSCO Parent result before the vertical spin-off

POSCO_Income/Financial Structure

Income



* 2020, 2021 : POSCO Parent result before the vertical spin-off

(billion KRW)	2020	2021	2022	YoY
EBITDA	3,516	9,047	4,673	△4,374

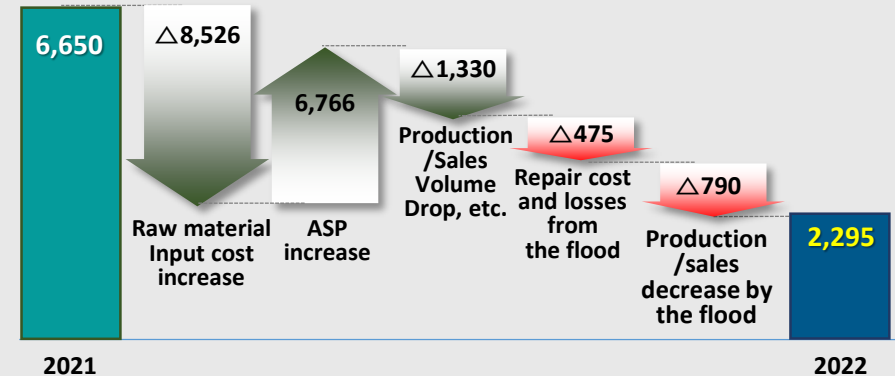
○ **OP dropped as margin reduced by slow demand in 2H 2022 and one-off cost including repair cost, while revenue went up due to sales price increase**

○ **Cash balance increased, net debt decreased**

(trillion KRW)	At the spin-off('22.3.1)	'22.E
Cash Balance	5.5	7.6
Debt	7.1	7.8

【Operating Profit YoY】

(billion KRW)



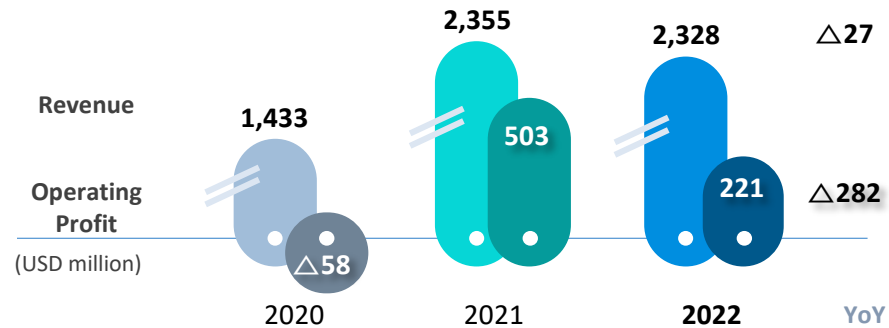
- **Raw Material Input Cost** : Coking Coal 234, Iron ore 95 (2021 average price = 100)
 - Coking coal price hiked up due to global imbalance by the Ukraine war, etc.
 - * Raw Material Input Cost of 4Q22 : Coking Coal 80, Iron ore 96 (3Q22 average price = 100)
- **Sales Price**(carbon steel, thousand KRW/ton) : 2021) 975→2022) 1,147 (+172)
 - Decreased in 2H 2022 due to slow demand and drop in exchange rates
 - ※ Price trend(thousand KRW/ton) : (1Q) 1,136 – (2Q) 1,236 – (3Q) 1,186 – (4Q) 1,025
- **Recognized one-off cost due to the flood damage by 475 bil KRW**
 - Repair cost : 380 bil KRW(material cost, maintenance cost, etc.)
 - Inventory impairment loss : 95 bil KRW(finished/semi-product, materials, etc.)
- **Impacted by 790 bil KRW due to shutdown from the flood damage**
 - Impacted by decreased fixed cost and sales volume due to the production decline

Overseas Steel Subsidiaries_Performance

Turned to losses as of 4Q due to slow global steel demand in 2H 2022

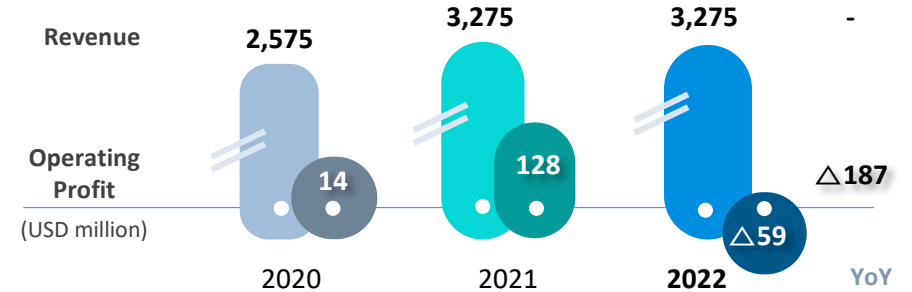
PT. Krakatau POSCO

- Sales volume and profit dropped year-on-year due to raw material cost increase and slow steel demand in 2H 2022
- Increased in coking coal input cost by 107% year-on-year



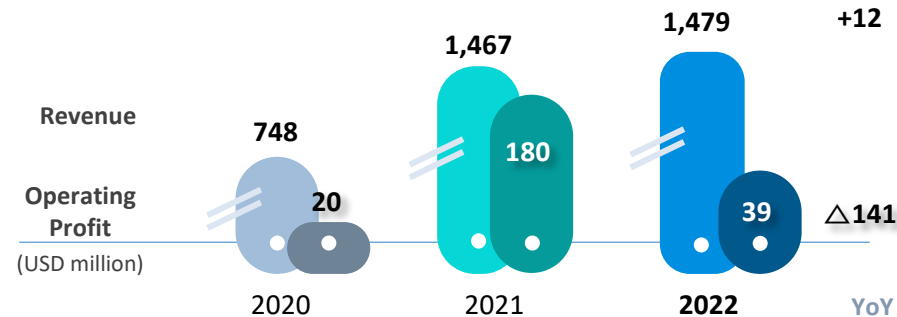
Zhangjiagang STS (PZSS)

- Recorded profit loss as shrunk margin due to the Chinese Zero COVID-19 policy, while STS raw material costs stayed at high level by the Ukraine war and demand increase of nickel for battery
- Price of LME Ni(US\$/ton) : 2021) 18,488 → 2022) 25,605 (+7,117)



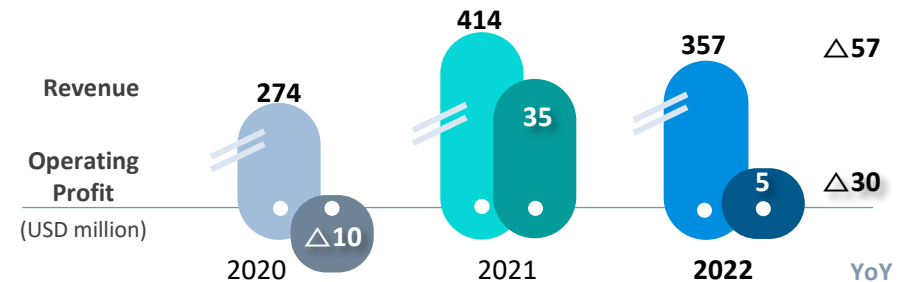
POSCO Maharashtra

- Profit faltered while revenue went up due to increased costs of materials and raw materials
- Increased in sales price by 2% , purchase price of materials by 13% year-on-year



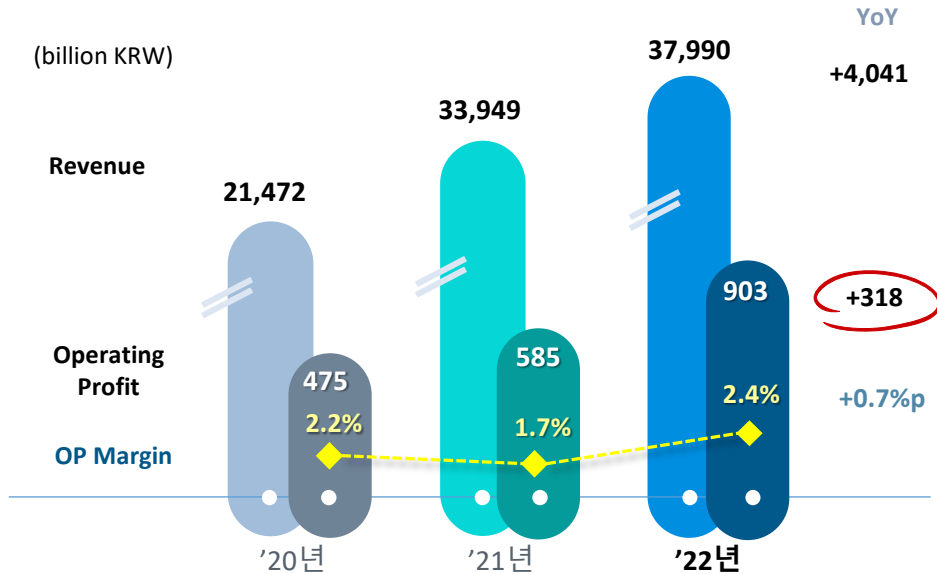
PY VINA

- Profit decreased as sales volume and price dropped due to loan restrictions of the Vietnamese government, weak construction market, and excessive inventories of distribution centers
- Sales volume of section products(k tons) : 2021) 433 → 2022) 400 (△33)



POSCO International_Performance

Income



【Revenue by Business】

(bil KRW)	2020	2021	2022	YoY
Trading	19,298	32,470	36,377	+3,907
Energy	2,174	1,479	1,613	+134

* Other sales of earnings from real estate including Songdo Tower excluded

Major Activities

○ Trading

- **Steel** : Recorded the highest revenue as of POSCO products sales over 10 million tons

- Sales volume of POSCO products(million tons) : 2021) 9.4 → 2022) 10.3

- **Agriculture** : Showed sharp decrease of crop sales volume due to the Ukraine war, while profits from palm biz. enlarged

- Crop sales volume(million tons) : 2021) 6.6 → 2022) 3.6
- Operating Profit of palm business(bil KRW) : 2021) 76 → 2022) 102

○ Energy

- **Myanmar gas field** : Revenue/profit improved due to rise in sales price and exchange rates

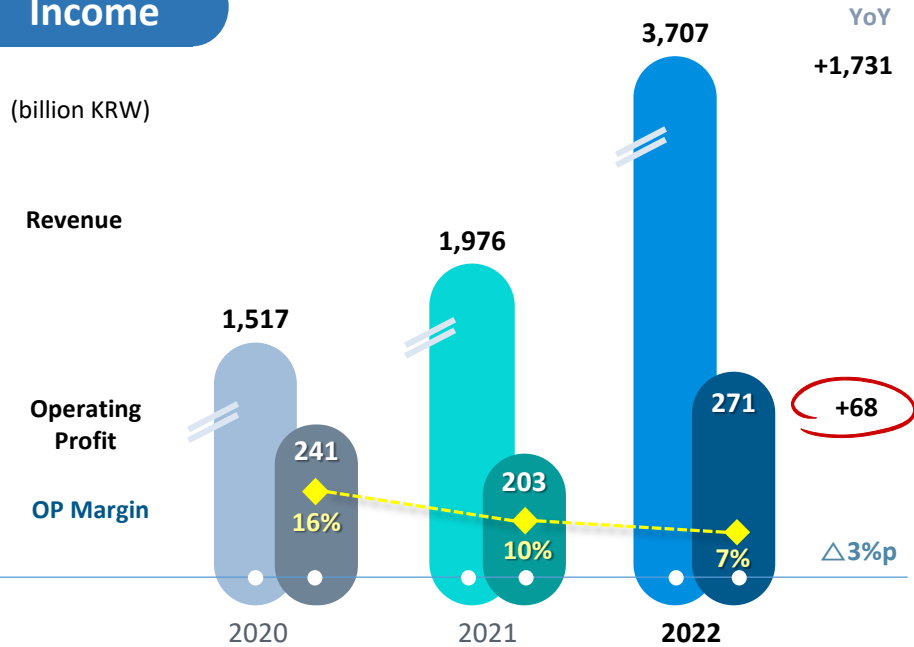
- Gas sales volume(bil ft³) : 2021) 195 → 2022) 189
- Operating profit(bil KRW) : 2021) 181 → 2022) 350

- **Senex Energy** : M&A in 2022→ target to triple the production volume by 2025

- Sales volume of Senex Energy(bil ft³) : 2022) 17
- Acquired in Apr. 2022 : P-international's stake 50.1% for 405 bil KRW
- Apr.~Dec. 2022: Revenue 187, OP 39 bil KRW(OP Margin 20.8%)

POSCO Energy_Performance

Income



【Revenue by Business】

(bil KRW)	2020	2021	2022	YoY
Power Generation	1,278	1,698	3,274	+1,576
Terminal	143	178	316	+138
Fuel Cell, etc.	96	100	117	+17

Major Activities

○ Power Generation : Operating profit went up due to electricity demand increase and sales price impact

- The end of social distancing and a revival of industries lead electricity demand increase
- SMP increased as LNG price went up

【Market Index】

	2020	2021	2022	YoY
Power demand(GW)	72	75	78	+3
SMP(KRW/kWh)	68	94	196	+102

○ Terminal : Operating profit went up due to stable tank rental services and expansion of connecting businesses

- Generated stable profit from tank rental services to SK, S-Oil, etc.
- Increased profit from LNG sales by expanding sales of the export and import businesses utilizing its own tanks
- Profitability recovered by expanding commissioning business of LPG vessels(1→7, +6 vessels), despite of profit decrease in LNG ship commissioning from LNG price hike
- Gwangyang No.6 LNG Tank construction underway(target to be completed by May 2024)

POSCO E&C_Performance

Income

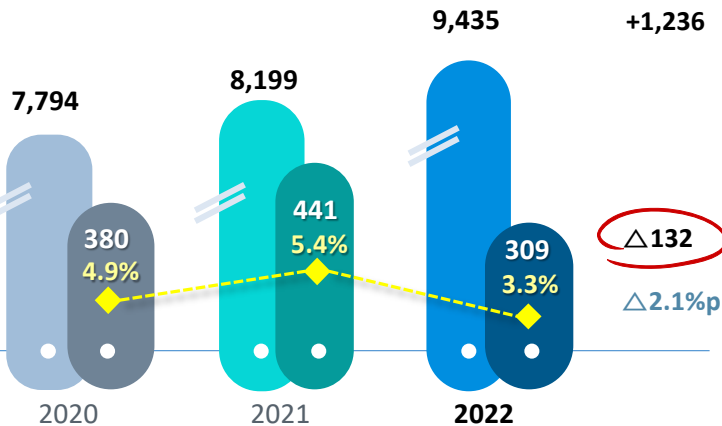
(billion KRW)

YoY

Revenue

Operating Profit

OP Margin



【Revenue by Business】

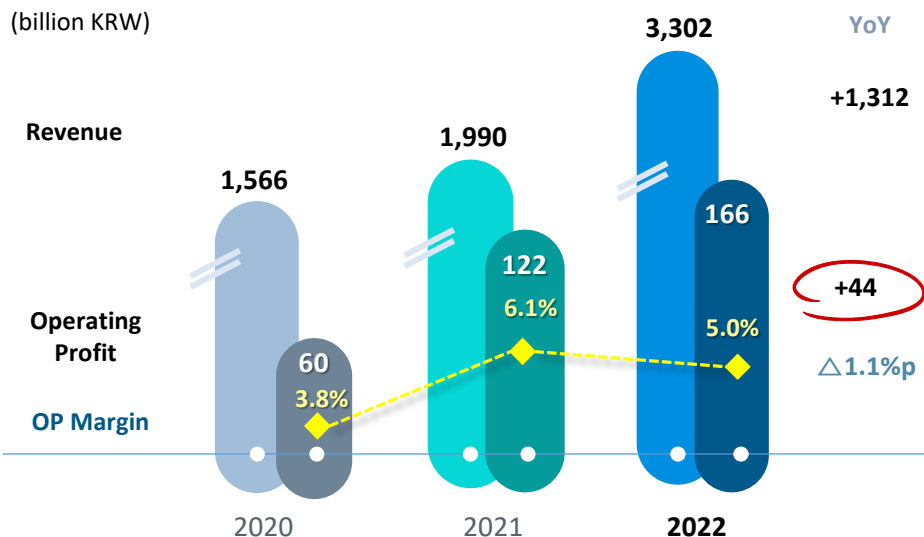
(bil KRW)	2020	2021	2022	YoY
Plant	1,722	1,839	2,535	+696
Infrastructure	798	841	1,354	+513
Building	4,748	4,339	4,235	$\Delta 104$
Consolidated subsidiaries	526	1,180	1,311	+131

Major Activities

- **Operating Profit decreased due to construction materials price hike, while revenue increased**
 - Plant : Profit increased year-on-year(+35 bil KRW) due to new construction PJT and profit improvement of overseas PJT, etc.
 - Infrastructure : Profit increased year-on-year(+13 bil KRW) by speeding up processes of PJT and winning a suit of indirect costs, etc.
 - Construction : Profit rapidly dropped year-on-year($\Delta 187$ bil KRW) due to revenue decrease and additional costs from increases in materials cost/outside order expenses, etc.
- **Orders slightly decreased year-on-year, while city housing projects increased**
(Total order in 2022 : 10.8 tril KRW, $\Delta 0.4$ tril KRW YoY)
 - Plant(3.2 tril KRW, $\Delta 0.2$ YoY) : Orders of chemical plant increased
* Dangjin LNG Terminal(0.4), Kumho ethylene rubber plant(0.2), etc.
 - Infrastructure(0.7 tril KRW, $\Delta 0.1$ YoY): Groundwork for Dangjin LNG Terminal(0.1), etc.
 - Construction(6.9 tril KRW, $\Delta 0.1$ YoY) : increased orders of city housing projects(41%→54%)
* Jeongneung renewal project(0.6), Changwon remodeling(0.5), etc.

POSCO Chemical_Performance

Income



【Revenue by Business】

(bil KRW)	2020	2021	2022	YoY
Cathode materials	351	678	1,722	+1,044
Anode materials	182	174	216	+42
Refractories	453	463	565	+102
Quicklime/Chemical	580	675	799	+124

Major Activities

- **Cathode : Both revenue and profit increased, profitability improved**
 - Sales volume increased(+40%) due to maximizing production/sales of N65 and having ZPHE on a consolidated basis
 - Revenue went up by 156% due to increase in sales volume and raw materials price, and rise in exchange rates
 - ※ Exchange rate 1,144 → 1,292KRW/USD(yoy+13%)
 - ※ Lithium price +409%, Nickel price +150%
 - Profitability recovered due to increase in utilization rate and rise in sales price linking with the raw material price
- **Anode : Profitability slightly weakened despite of revenue increase**
 - Showed sluggish sales volume increase due to slow demand by the shortage of semiconductor materials for EV, and increasing uses of Chinese
 - Profitability recovered from 2H 2022 as sales price increased in accordance with raw material(graphite) price increase
- **Refractories, Quicklime/Chemical : Profitability dampened**
 - Refractories : production volume decreased due to the flood and recognized repairing expenses
 - Chemical : profit declined due to sales price differences generated from the oil price drop
 - P&O Chemical : Recorded loss because of initial fixed cost after its construction completion(June)

2023 Business Outlook

Consolidated

Revenue
(trillion KRW)



CAPEX
(trillion KRW)



Net Debt
(trillion KRW)



- **2022 POSCO Safety Management Activities**
- **Summarized Income Statement**
- **Summarized Balance Sheet**

2022 POSCO Safety Management Activities

Established safety-first culture and secured practical safety management system

Safety System

Established practical and strong health and safety management system

- **【Budget】** Strengthened safety control by creating a process for pre-executing the safety budget
- **【System】** Run Safety Management Committee and Group's Safety Council, Advisory Council for Safety, and acquired evaluations from outside agency
- **【Affiliates】** Reinforced safety control by developing a health and safety platform combining affiliate companies

Safety Culture

Transferred core value from production-oriented to safety-first

* Total Recordable Injury Frequency Rate

- Settled 'Field First' culture by management-led, operated TRIFR * indicator
- Established the Joint Labor-Management Committee/Safety report center, routinized to improve against hazardous risks
- Focused on compliance with Rule & Process : operated process indicators including Safety rule compliance index, etc., and application of safety accidents

Safety Workforce

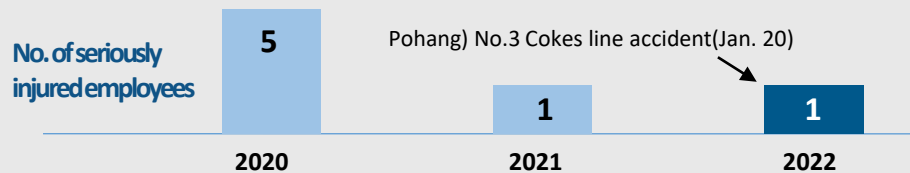
Secured workforce and competency for leading the system/culture

* Process Safety Management
* Provided safety education by visiting affiliated companies

- **【Workforce reinforcement】** Safety manager(16→83) and PSM * instructor(107→191)
- **【Infrastructure fortification】** Lifeguard(328→567), Safety Bus * (2→4) and Shelter(51)

Serious Accidents Decreased

* Completed compensation process for the past serious accidents



FFR *

* Fatality Frequency Rate

No. of seriously injured employees : 1

0.013

POSCO(2022)

0.030

Worldsteel(2021)

Source : Worldsteel

Summarized F/S_Consolidated Income Statement

(billion KRW)

	2020	2021	2022					YoY
			1Q	2Q	3Q	4Q		
Revenue	57,793	76,332	84,750	21,338	23,010	21,155	19,247	8,418
Gross Profit	4,720	11,881	7,649	2,929	2,733	1,608	379	△4,232
(Gross margin)	(8.2%)	(15.6%)	(9.0%)	(13.7%)	(11.9%)	(7.6%)	(2.0%)	(△6.6%)
SG&A	2,317	2,643	2,799	671	635	688	805	156
Operating Profit	2,403	9,238	4,850	2,258	2,098	920	△425	△4,388
(Operating margin)	(4.2%)	(12.1%)	(5.7%)	(10.6)	(9.1)	(4.3)	(△2.2)	(△6.4%)
Net Profit	1,788	7,196	3,560	1,907	1,799	592	△737	△3,635
EBITDA	6,010	12,806	8,544	3,146	3,007	1,847	543	△4,249
(EBITDA Margin)	(10.4%)	(16.8%)	(10.1%)	(14.7%)	(13.1%)	(8.7%)	(2.8%)	△6.7%
EPS (KRW)	20,165	87,330	46,988	25,187	23,717	7,800	△9,716	△40,342
No. of outstanding shares (thousands)	79,121	75,696	75,815	75,710	75,849	75,849	75,849	119

Summarized F/S_Consolidated Balance Sheet

(billion KRW)

	2020	2021	2022	YoY
Current Assets	35,831	46,622	47,650	1,028
Cash & Cash Equivalents	16,365	18,156	18,739	583
Accounts Receivable	8,121	10,062	9,770	△292
Inventories	9,052	15,215	15,472	257
Non-Current Assets	43,256	44,850	50,757	5,907
Tangible Assets	29,400	29,597	31,781	2,184
Intangible Assets	4,449	4,166	4,839	673
Other LT Financial Assets	1,562	2,120	2,333	213
Total Assets	79,087	91,472	98,407	6,935
Liabilities	31,412	36,667	40,149	3,482
Current Liabilities	16,855	21,084	23,188	2,104
Non-Current Liabilities	14,557	15,583	16,961	1,378
※ Total Debt	20,498	21,741	24,306	2,565
Shareholders' Equity	47,675	54,805	58,258	3,453
Owners of the Controlling Stake	44,331	50,427	52,520	2,093
Net Debt	4,133	3,590	5,554	1,964
Net Debt to Equity (%)	8.7%	6.5%	9.5%	3.0%