

Doosan Fuel Cell

DOOSAN

1Q 2025 IR Presentation

May 2025

Investor Relations



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Financial data in this presentation is on K-IFRS consolidated and separate basis.

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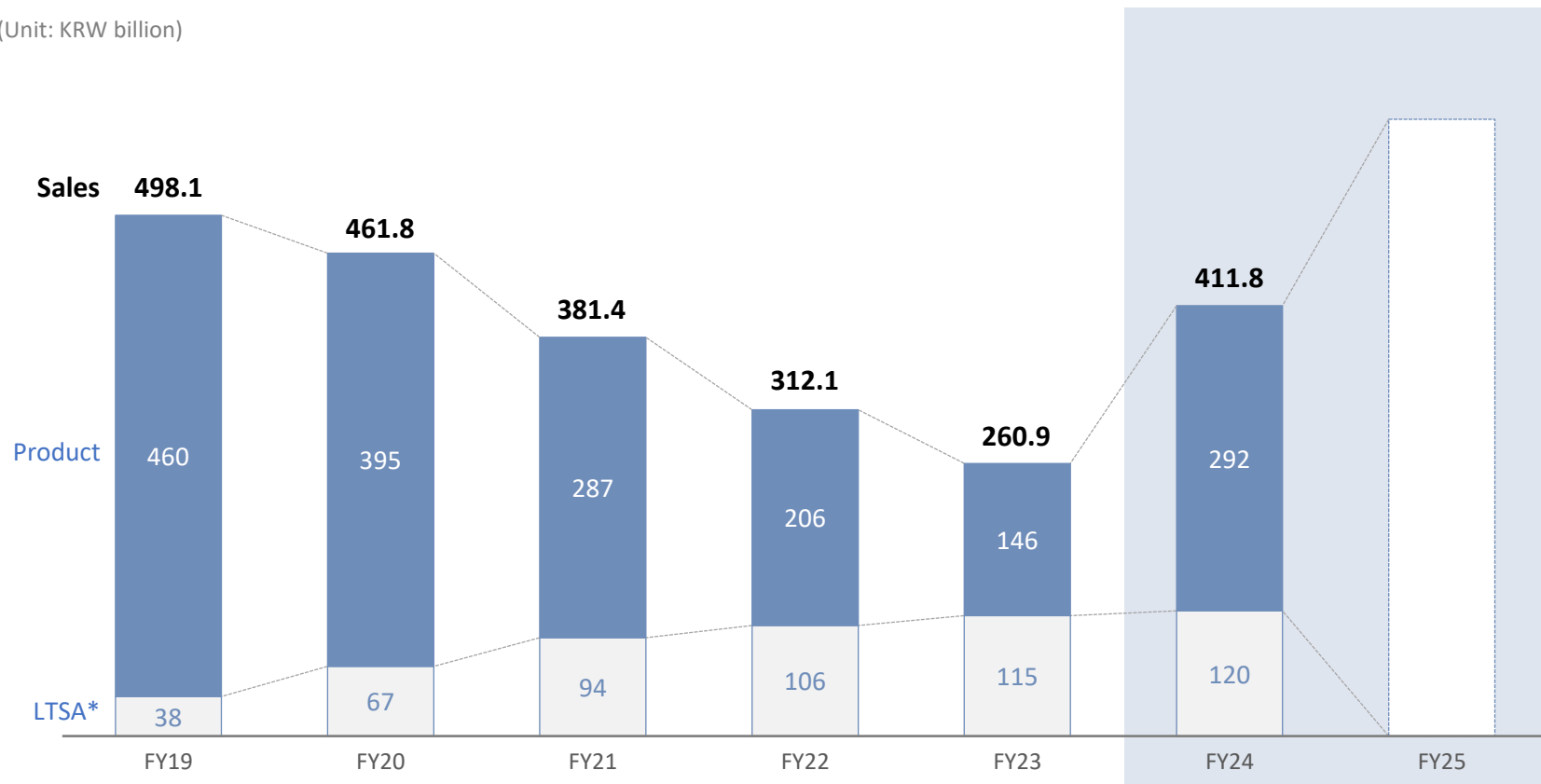
Appendix

1. Sales

Sales declined through 2023, but growth resumed in 2024.
A significant increase in Sales is expected in 2025.

Annual Sales Trend (2019-2024)

(Unit: KRW billion)



*) LTSA: Long Term Service Agreement

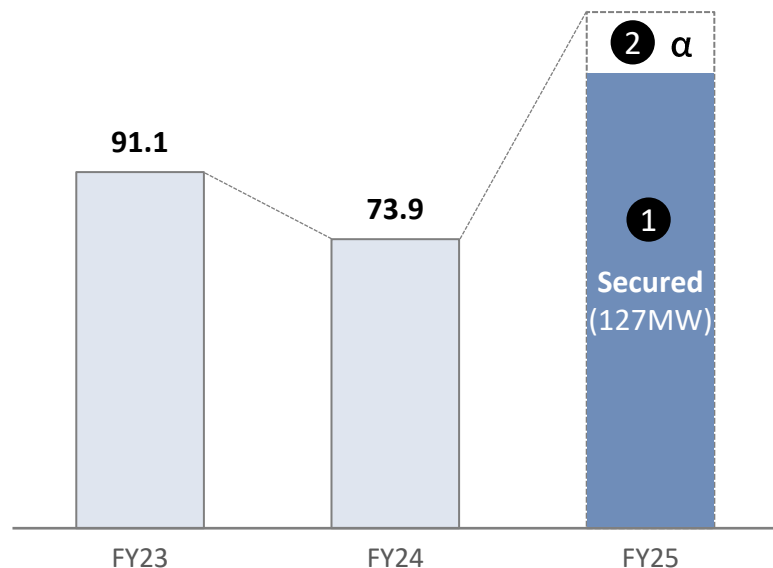
2. Order Performance and Outlook

Significant increase in orders anticipated for 2025

- Most of the bids won(127MW) in CHPS general H2 market in 2024 are planned to be reflected in this year's orders
- In addition, overseas business opportunities are expected to be explored

Order Trend

(Unit: MW)



① Secured

- **2024 CHPS-won Projects**

- 11 projects (127MW) are primarily expected to be reflected in orders for 2025 (order contracts to be signed after procuring PF from power producers)

② Plus α

- **New overseas orders**

- Asia: Securing presence through pilot projects in China and Taiwan
- US: Winning orders for sales in the US market through affiliates

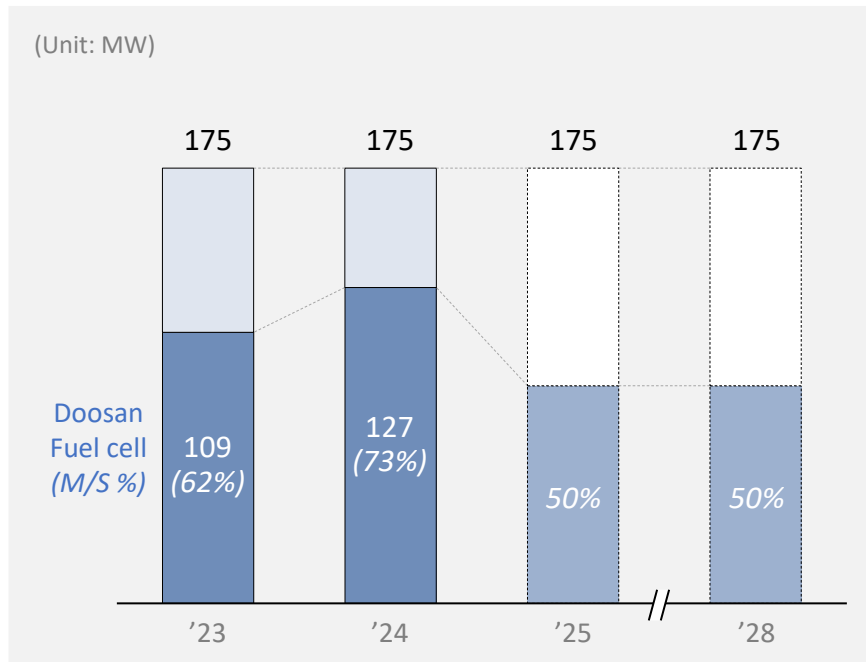
- **Sales of components such as SOFC stack**

- **Remaining quantity of RPS**

3. Mid-to-Long Term Sales Outlook

Assuming 50% M/S in future CHPS bidding markets, Sales could double within five years

CHPS General Hydrogen Bidding Market Outlook



Mid-to-Long Term Sales Outlook

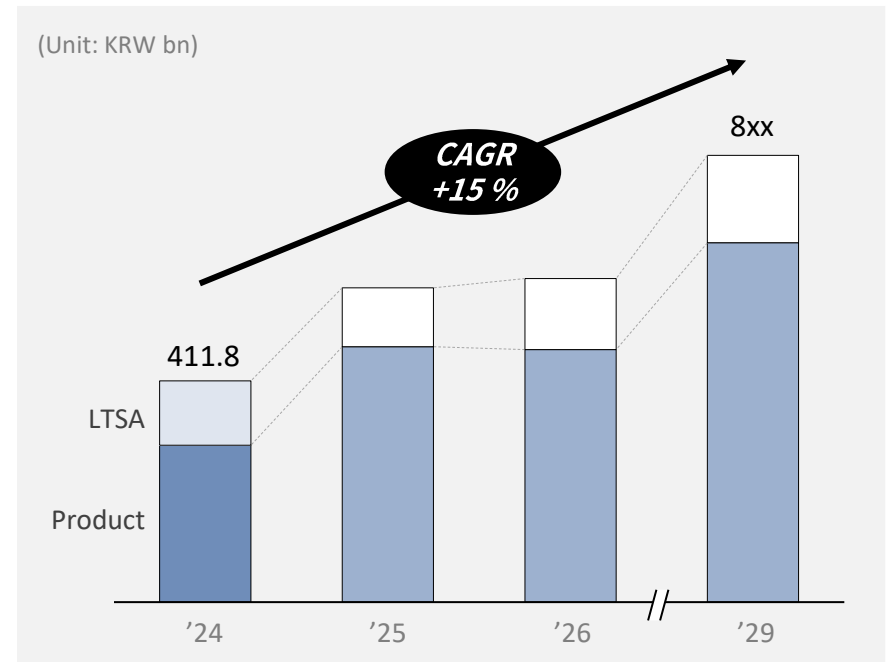


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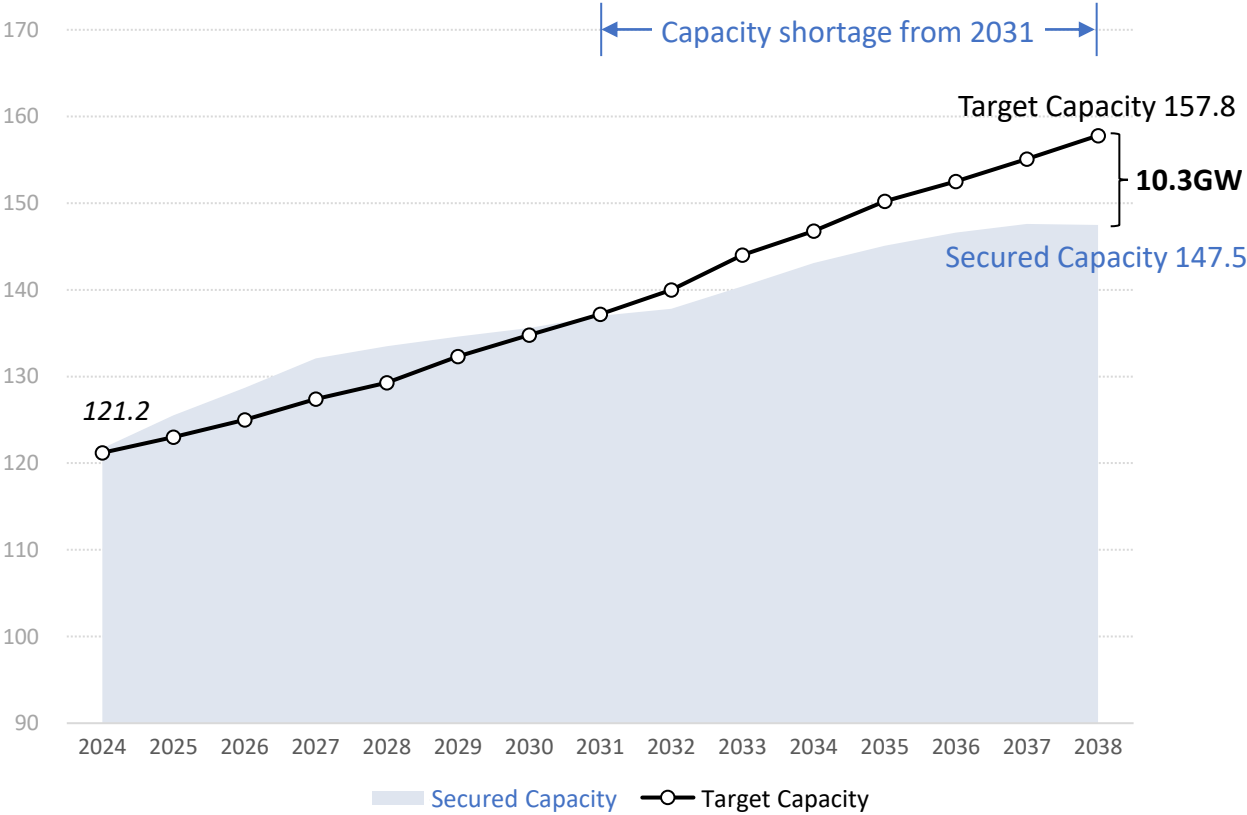
1. Domestic Power-generation Market Environment

The 11th Basic Plan for Electricity Supply & Demand¹⁾: Despite reflecting the expansion of renewable energy, A capacity shortage is expected starting from 2031.

➔ Fuel cell power generation, as a zero-carbon energy source, has an opportunity to participate in 4.6GW of the 10.3GW additional capacity.

Electricity Supply and Demand Outlook by year(2024 – 2038)

(Unit: GW)



New Power Facility Composition by Period

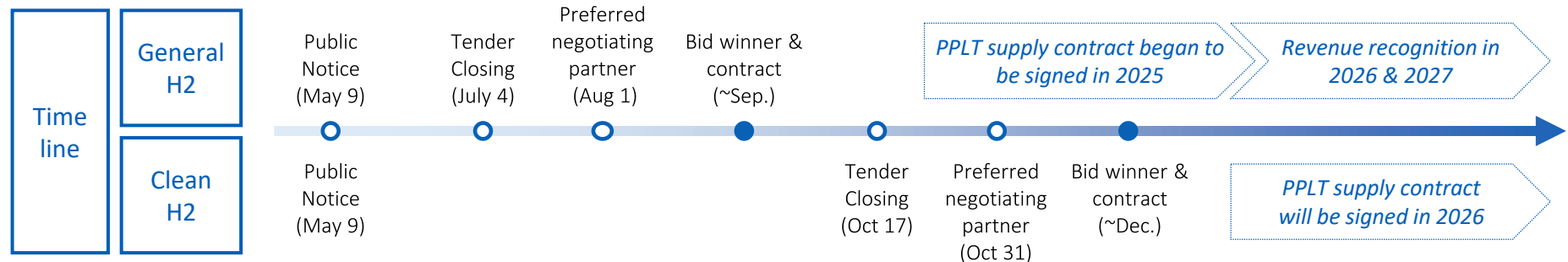
(Unit: GW)

Period	Capacity shortfall	Facilities to be Deployed
'31-'32	2.2	CHP 2.2
'33-'34	1.5	deferred 1.5
'35-'36	2.2	SMR 0.7 Carbon-free competition 1.5
'37-'38	4.4	NPP 2.8 deferred 1.6
Total	10.3	

1) Basic Plan for Electricity Supply & Demand: Ministry of Trade, Industry and Energy (2025.2.21)

[Back-up] Trends in the CHPS bidding market

The bidding market for general and clean hydrogen power generation commenced in 2023.



		General H2	Clean H2
Description	Volume	1,300 GWh	3,000 GWh
	Target	Fuel cell	Fuel cell and hybrid power generation(LNG-H2, Coal-Ammonia)
	Fuel	Clean, reforming, byproduct H2	Clean H2 ¹⁾
	Hybrid ratio	-	More than 20% of power generation
	Evaluation	Price (60%)	Levelized Cost of Energy
		Others (40%)	Industrial-economic contribution, characteristics of distributed power, system acceptance, etc.
	Settlement	Gap between bid price and market price	Gap between bid price and market price
	Contract terms	2 years of preparation, 20 years of transaction - Penalty for failing to commence commercial operations within 2 years of the contract conclusion	3 years of preparation, 15 years of transaction - Penalty for failing to commence commercial operations within 3 years of the contract conclusion (4 years applies only to the initial contract)

1) Greenhouse gas emissions per kg of hydrogen generation are less than 4kg

[Back-up] Korea's Hydrogen Energy Policy

The Lee Jae-Myung administration aims to transition to a carbon-neutral industry centered on renewable energy (plan to establish 'the Ministry of Climate and Energy')

Category	Moon Admin. (2017-2022)	Yoon Admin. (2022-2024)	Lee Admin. (2025-)
Vision & Goals	Announced Hydrogen Economy Roadmap - Targeting global No.1 in hydrogen vehicles and fuel cells by 2030	Maintained hydrogen industry focus, emphasizing nuclear-based hydrogen production	Transition from Carbon-based to Hydrogen society - Government-led investment in H2
Hydrogen Production Method	Green hydrogen based on renewable energy	Pink hydrogen based on nuclear power, Focus on economic viability	Combination of renewables and nuclear, Promotion of hydrogen-based steelmaking
Nuclear Power Policy	Nuclear phase-out policy (Suspension of new projects)	Return to nuclear power - Resumption of New Hanul 3 & 4, SMR development	Continued use of nuclear power Without excessive dependence
Hydrogen Infrastructure	Expansion of hydrogen refueling stations Increased deployment of fuel cells	Nuclear-linked hydrogen production - Promoted as a job creation engine	Development of H2 Vehicle Cluster Commitment to RE100-Compatible Semiconductor Cluster
Renewable Energy	Expansion of Green Hydrogen Production - Renewable Energy Share Targeted at 20% by 2030*	Emphasis on Harmonizing Renewable Energy and Nuclear Power	Strengthening Renewable Energy - Targeting 40% by 2035
Related Policies and Initiatives	Establishment of the Hydrogen Economy Committee	Introduction of a Clean Hydrogen Certification System	Plans to establish ' Ministry of Climate & Energy ' Pre-announcement of Korean IRA-style legislation

* Based on Power Generation: Renewable Energy Share was 8.4% in 2023

2. Product Competitiveness – (1) Acquisition of exclusive PAFC license

IP (Intellectual Property) rights expanded to strengthen the PAFC business foundation

	AS-IS	TO-BE
Territory	<div><u>Korea</u> Doosan Fuel cell (Non-exclusive)</div> <div><u>Global including Korea</u> HyAxiom, Inc.</div>	<div><u>Asia and Oceania</u> Doosan Fuel cell (Exclusive)</div> <div><u>The Americas, Europe, etc.</u> HyAxiom, Inc.</div>
Scope of Rights	<ul style="list-style-type: none">• Production, Sales, and Service (within Korea)	<ul style="list-style-type: none">• Production, Sales, Service, R&D, and Sub-licensing (within the territory)
Royalty	<ul style="list-style-type: none">• Payable upon product sales	<ul style="list-style-type: none">• One-time payment (no additional royalties)

* Doosan Fuel Cell is responsible for production regardless of territory

Expected Outcomes

1 Enhanced Product and Technical Competitiveness

- Expansion of R&D rights enables faster and more flexible design improvements, leading to enhanced quality competitiveness

2 Global Market Entry

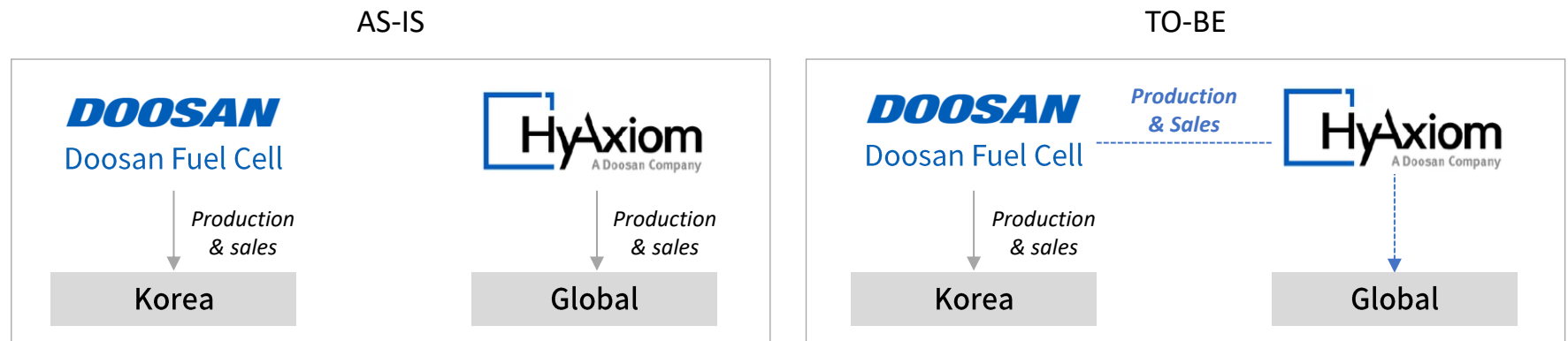
- Strengthening the foundation for entering major overseas target markets such as China, Taiwan, and Australia
- Amid intensifying U.S.-China trade tensions, the need for independent business operations is becoming more prominent

3 Diversification of Business Models

- Business model diversification is possible based on sub-licensing rights (e.g., overseas localization, LTSA outsourcing)

2. Product Competitiveness – (2) Business Area Restructuring

By centralizing fuel cell production corporations in Korea, ‘market expansion’ and ‘cost competitiveness enhancement’ are expected.

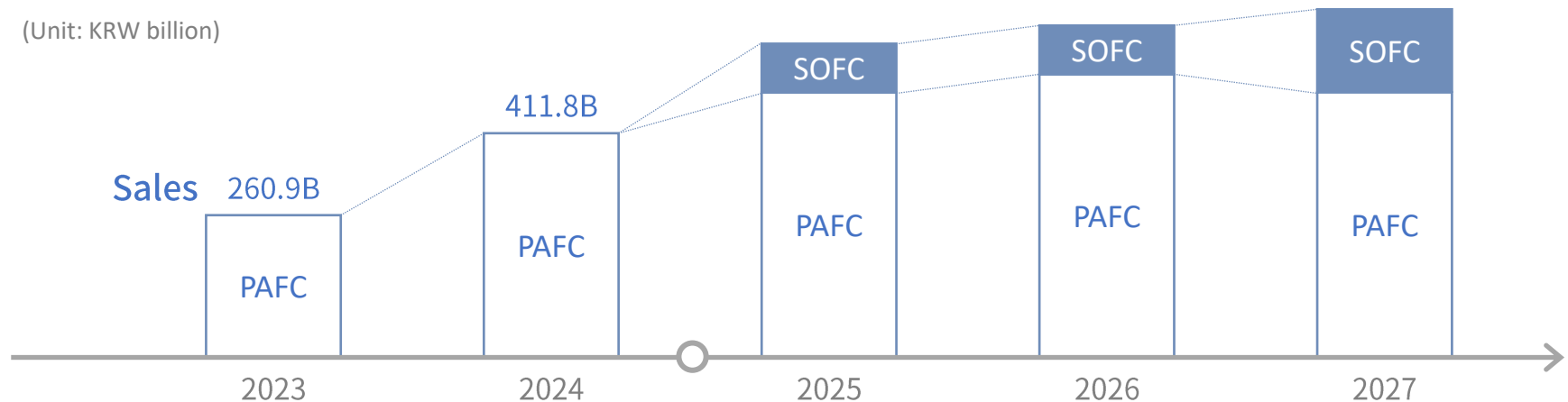


Overview	<u>Integrating fuel cell production into the Korean corporation to secure the fundamental competitiveness of the hydrogen business</u>
Expected effect	<ol style="list-style-type: none">1 Market expansion<ul style="list-style-type: none">- Potential supply of fuel cell products to the US market- Potential benefit from the increasing demand in the US market, including data centers2 Cost competitiveness enhancement<ul style="list-style-type: none">- By scaling up production, sourcing negotiation power and production efficiency are expected to be strengthened.

3. Product Line-up Diversification : SOFC

Securing mid-to-long-term growth drive through SOFC, based on stable sales of PAFC

- The last two years were focused on investments for growth
- New market opportunities identified in SOFC from 2025 (data center, stack foundry, etc.)



Executing investments in growth

SOFC

- Introduction of core technologies
- Facility investments of KRW 155.8 billion (Gunsan factory)

PAFC

- Acquisition of electrode business for KRW 22.4 billion

Strengthening competitiveness (PAFC+SOFC Hybrid)

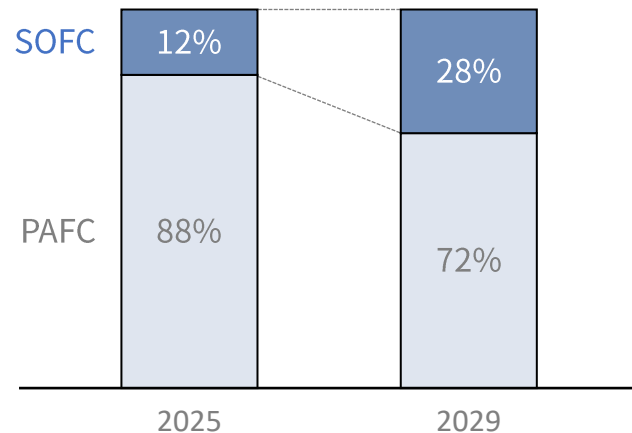
- Diversifying business models in the general H2 market for CHPS (PAFC, SOFC, PA+SO)
- Full-scale entry into data center market
- Commercialization of SOFC stack foundry

[Back-up] PAFC & SOFC

- With SOFC supply capabilities, we can offer a variety of solutions(PAFC, SOFC, PAFC+SOFC) based on customer needs.
- Leveraging our leading in the Korean market, we are expanding globally to improve profitability.

1 Expansion of product portfolio (PAFC only → PAFC & SOFC)

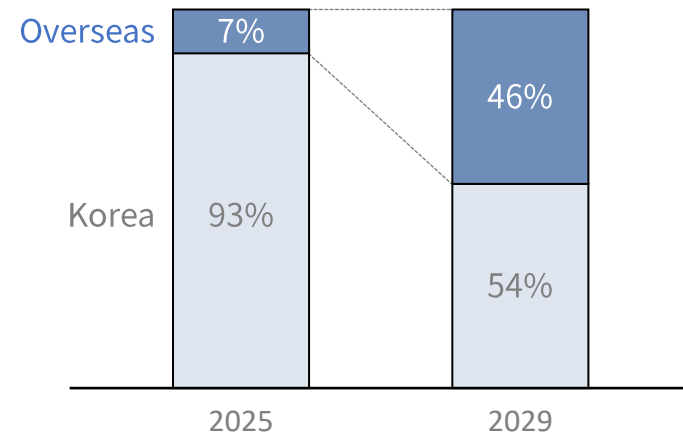
[PPLT revenue share by product]



- Securing SOFC mass production capability (factory completion in Apr. 2025)
- Maintaining a leading position in the CHPS bidding market, and entering the distributed energy market

2 Global expansion (Australia, Southeast Asia, China, Taiwan, and the U.S)

[PPLT revenue share by region]



- Targeting China and Taiwan as priorities for business development and building infrastructure through local partnership
- Securing data center opportunities in the U.S



Appendix

1. Company Overview
2. Our role in the hydrogen economy
3. Fuel cells
4. 1Q 2025 Financial Performance
5. Income Statements
6. Financial Statements

Appendix 1. Company Overview

A leading player in the domestic fuel cell power generation market

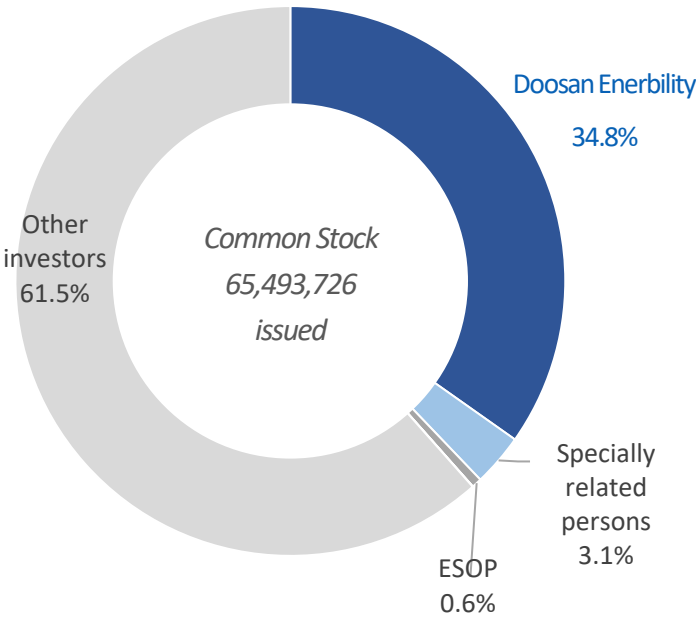
About Doosan Fuel Cell

[As of Mar 31, 2025]

Spin-off	2019. 10. 1. (Spin-off)
HQ address	100, Seokam-ro 7-dil, Iksan-si, Jeollabuk-do
Size	602 employees
CEO	Doosoon Lee / CEO
History	<ul style="list-style-type: none">• 2014 Doosan Co. acquired U.S. fuel cell maker• 2017 Iksan factory construction completed• 2019 Spin-off from Doosan Co. and listing on KRX• 2022 Iksan factory ramp-up (CAPA 232MW)• 2023 Completion of Gunsan factory (CAPA 50MW)• 2024 Acquisition of 100% share in HyAxiom Motors

Shareholders

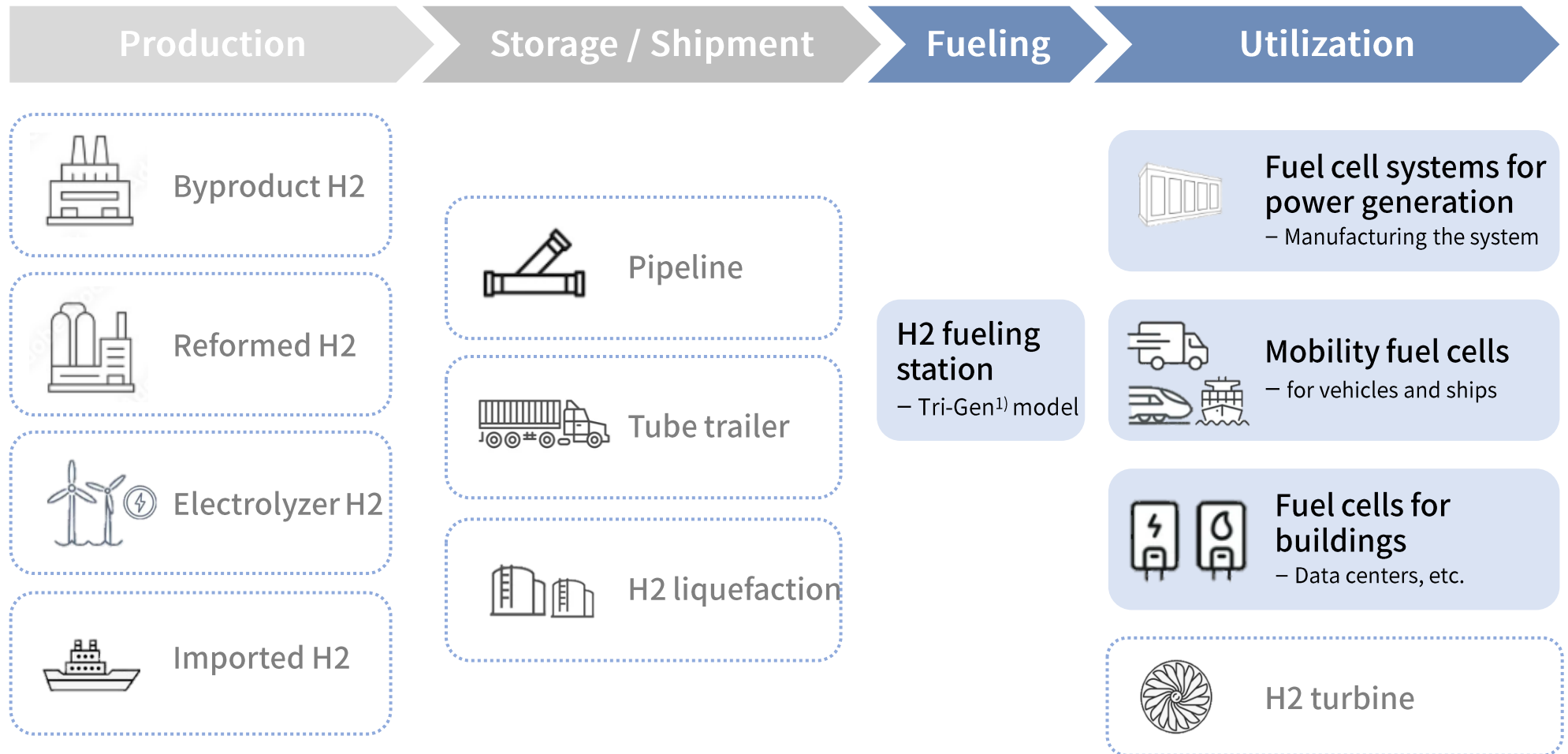
[As of Mar 31, 2025]



Appendix 2. Doosan Fuel Cell's role in the hydrogen economy

Manufacturing and supply of fuel cell equipment, which is key to hydrogen utilization

Doosan Fuel Cell businesses

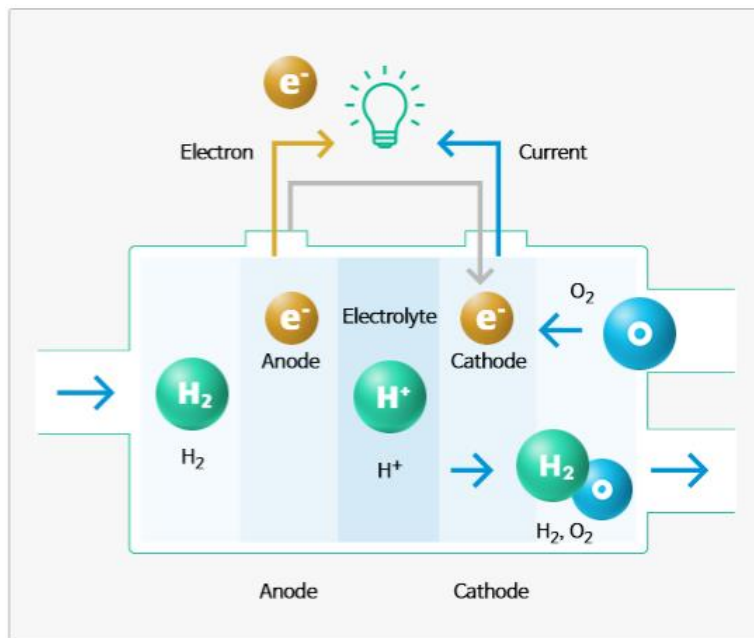


1) Tri-Gen : a model capable of generating electricity, heat, and hydrogen

Appendix 3. Fuel cell

A fuel cell uses hydrogen and oxygen to generate electricity through an electrochemical reaction, instead of burning the fuel.

Fuel cell working principle



Types of Fuel cells

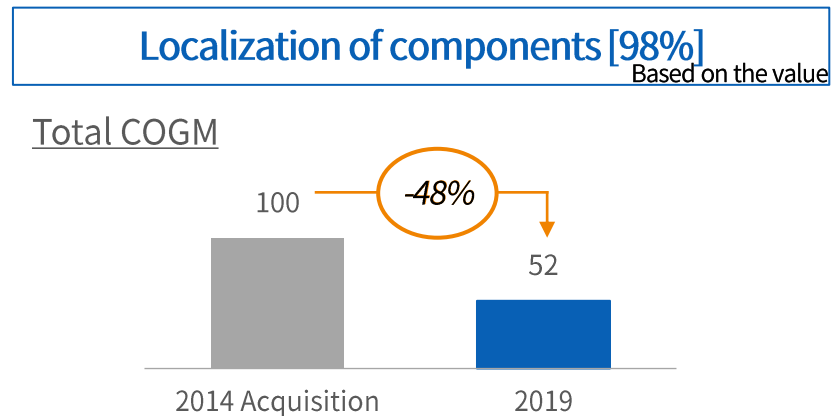
	PEMFC	PAFC	MCFC	SOFC
Electrolyte	Polymer Electrolyte Membrane	Phosphoric Acid	Molten Carbonate	Solid Oxide
Operation Temperature	25 ~ 80°C	160 ~ 200°C	650°C	600 ~ 1,000°C
Catalyst	Platinum	Platinum	Perovskites	Nickel
Elec. Efficiency	35%	40 ~ 45% (NG) 48 ~ 50% (H_2)	45 ~ 60%	50 ~ 60%
CHP (Elec. + Heat)	-	90%	80%	50 ~ 80%
Applications	Portable, Mobility	Building, Power Plant	Building, Power Plant	Residential, Building, Power Plant

※ The exact details may vary depending on the manufacturer.

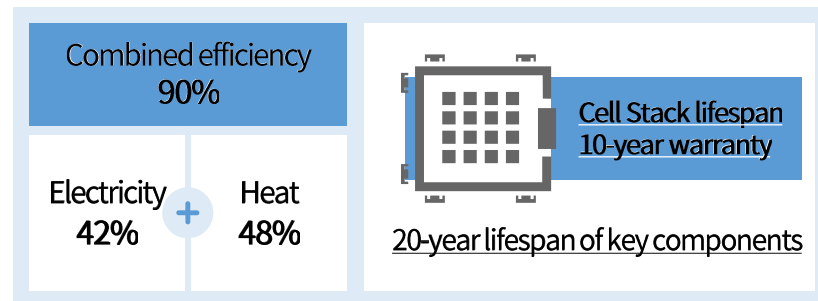
Appendix 3-1. Fuel cell: PAFC

- 1) High localization rate, 2) High combined efficiency and World's first commercialization of H2 model,
- 3) Technologies aligned with national policy orientations (CHPS¹), such as load-following

✓ High localization and combined rate

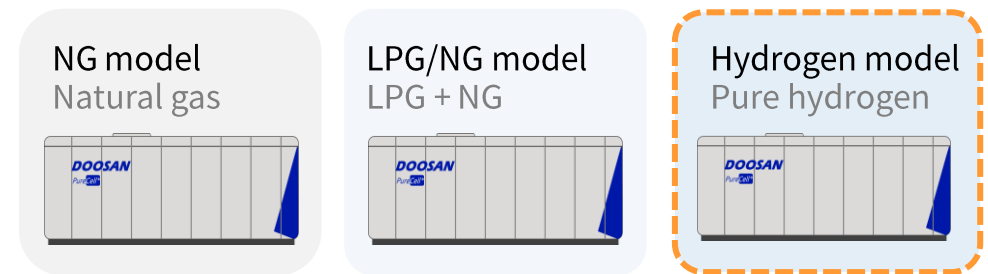


High combined efficiency and product lifetime

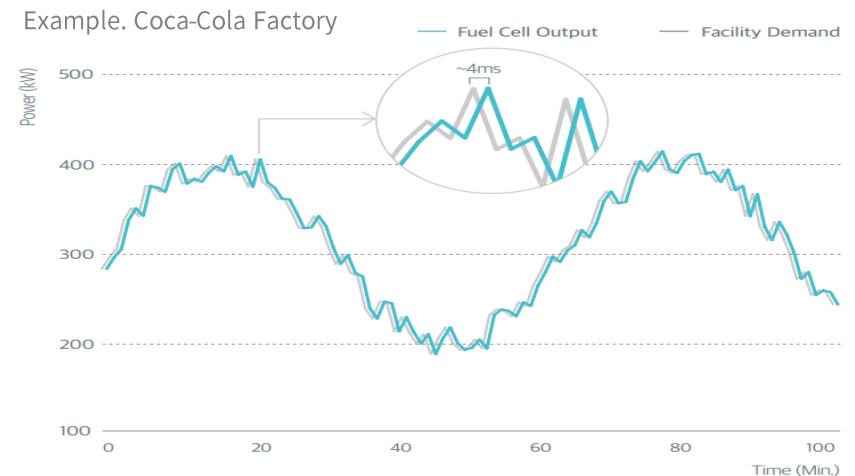


1) CHPS: Clean Hydrogen Portfolio Standard

✓ Easy transition to a hydrogen model



✓ Load-following: fast response in the power grid

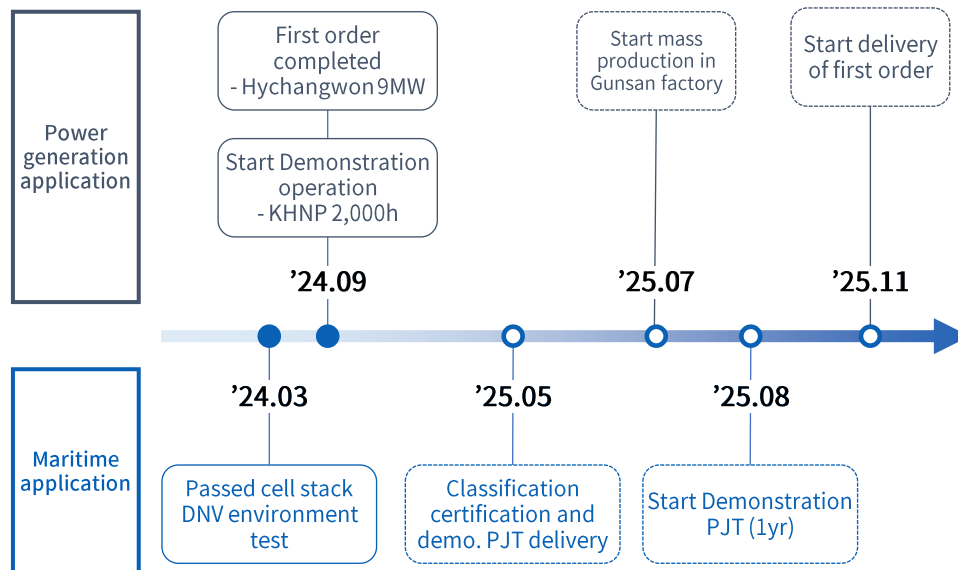


Appendix 3-2. Fuel cell: SOFC

Preparation for SOFC business is on track

- Won the first order for power generation with demonstration operation commenced.
Demonstration PJT for maritime application will be delivered following classification certification in 2025.
- Maximizing business effectiveness with product portfolio added.

Expected Timeline



- 1) Base load : minimum generation capacity maintained at a steady rate
- 2) Peak load : generation capacity that fluctuates according to power demand
 - PAFC has low operating temperature, making it relatively easier to adjust the generation output in response to load variation

SOFC Commercialization strategy

Output per
fuel cell
300kW

Electrical
efficiency
55~60%

Low to medium- temperature
(approximately 600°C) operation
to improve
stability and product lifetime

* Based on design specifications

1

High efficiency and stability

- ✓ Application to 2025 CHPS bidding market
- ✓ Energy-intensive demand (e.g. data center) response

2

Most optimized solution of SOFC + PAFC

- ✓ SOFC plays a base load¹⁾ role, PAFC as a peak load²⁾ role
- ✓ Meet needs for heat or byproduct H₂ utilization

3

Diversified demand

- ✓ Market for power generation and maritime applications
- ✓ Sales of PPLT and components (cell stack)

Appendix 4. 1Q 2025 Financial Performance

Sales Revenue of KRW 99.8B, operating loss of KRW 11.0B in 1Q 2025

- CHPS orders from 2023 now contributing to sales, resulting in over 3 times YoY growth
- Although the cost ratio has worsened, profitability is expected to recover from the 2Q through improved product mix and reduced royalty expenses

Summary of Income Statement (Separate basis)

(Unit: KRW billion)

I/S	'24.1Q	'25.1Q	YoY
Sales	31.7	99.8 ¹	+214.8%
COGS	20.0	99.7	
(%)	(63.2%)	(99.9%) ²	
SG&A	9.7	11.1	
Operating Profit(Loss)	2.0	-11.0	Turn to deficit
(OP margin %)	(6.3%)	(-11.1%)	
Finance Income	-1.2	-3.7	
Other Income	-1.2	0	
Gain on Equity method evaluation	0.2	0.1	
Income before Tax	-0.2	-14.6	
Tax	-0.3	-5.1	
Net Income	0.1	-9.5	Turn to deficit

※ Consolidated basis: Sales 99.7bn, Operating Loss 11.5bn

1 Sales Increased due to Higher Delivery Volume Products

(Unit: KRW bn)

Cat.	'24.1Q	'25.1Q	Notes
Product	0.1	75.0	Two CHPS projects
LTSA	31.6	24.8	Decrease of KRW 6.8bn YoY
Sales	31.7	99.8	

2 Cost ratio worsened, but improvement expected from Q2

1Q

- Decline in selling price of CHPS projects
- Sales from high-cost inventory reflected

Exp.
Imprv.
Factors

- Product mix improvement starting from Q2
 - Increased share of hydrogen model (M500) with relatively better cost ratio
- No royalty payment from Q2 due to IP contract (April 24)
- Full-scale benefits from internalizing electrode production
- Sales targeting the U.S. market have commenced

Appendix 5. Income Statements (Separate/Consolidated)

Separate Income Statement

(Unit: KRW bn)	'24.1Q	'24.4Q	'25.1Q	YoY	QoQ
Sales	31.7	261.6	99.8	215%	-62%
COGS	20.0	254.7	99.7		
Gross Profit	11.7	6.9	0.1	-99%	-99%
SG&A	9.7	9.1	111		
OP	2.0	-2.2	-11.0	T. Loss	Cont. Loss
Margin(%)	6.3%	-0.9%	-11.1%	-17.4%p	-10.2%p
EBITDA	6.6	1.7	-7.1	T. Loss	T. Loss
Margin(%)	20.8%	0.6%	-7.1%	-28.0%p	-7.8%p
Income before Tax	-0.2	-4.6	-14.6		
Net Income	0.1	-5.8	-9.5	T. Loss	Cont. Loss

Consolidated Income Statement

(Unit: KRW bn)	'24.1Q	'24.4Q	'25.1Q	YoY	QoQ
Sales	31.7	261.6	99.7	215%	-62%
COGS	20.0	254.7	99.7		
Gross Profit	11.7	6.9	0.1	-99%	-99%
SG&A	10.0	9.4	11.6		
OP	1.6	-2.6	-11.5	T. Loss	Cont. Loss
Margin(%)	5.2%	-1.0%	-11.6%	-16.8%p	-10.6%p
EBITDA	6.3	1.5	-7.5	T. Loss	T. Loss
Margin(%)	19.8%	0.6%	-7.5%	-27.3%p	-8.1%p
Income before Tax	-0.6	-5.1	-15.2		
Net Income	-0.2	-6.2	-10.1	Cont. Loss	Cont. Loss

※ Consolidated subsidiary: HyAxiom Motors Co., Ltd.

Appendix 6. Financial Statements (Separate/Consolidated)

Separate Financial Statement

(Unit: KRW bn)	'24.12	'25.03	Change
Total Assets	1,180.0	1,239.5	59.4
Current assets	666.1	688.2	22.1
<i>Inventories</i>	<i>379.3</i>	<i>386.9</i>	<i>7.6</i>
Non-current assets	514.0	551.3	37.4
Total Liabilities	677.3	746.2	68.9
Current liabilities	364.2	494.5	130.3
Non-current liabilities	313.1	251.7	-61.3
Shareholder's equity	502.8	493.3	-9.5
Capital stock	8.2	8.2	
Capital surplus	477.5	477.5	
Other equity	17.1	7.6	-9.5
<i>Debt to Equity Ratio</i>	<i>135%</i>	<i>151%</i>	<i>17%p</i>
Total borrowings	452.2	491.3	39.1
Cash and cash equivalents	145.9	112.4	-33.5
Net borrowings	306.3	378.9	72.6

Consolidated Financial Statement

(Unit: KRW bn)	'24.12	'25.03	Change	Consolidation adjustments
Total Assets	1,179.7	1,237.5	57.8	-2.0
Current assets	660.6	680.9	20.3	-7.3
<i>Inventories</i>	<i>380.4</i>	<i>388.0</i>	<i>7.6</i>	<i>1.1</i>
Non-current assets	519.1	556.6	37.5	5.3
Total Liabilities	680.8	748.7	68.0	2.5
Current liabilities	366.0	495.3	129.4	0.9
Non-current liabilities	314.8	253.4	-61.4	1.7
Shareholder's equity	498.9	488.8	-10.1	-4.5
Capital stock	8.2	8.2		
Capital surplus	476.1	476.1		-1.4
Other equity	14.6	4.5	-10.1	-3.1
<i>Debt to Equity Ratio</i>	<i>136%</i>	<i>153%</i>	<i>17%p</i>	<i>2%p</i>
Total borrowings	452.2	491.3	39.1	
Cash and cash equivalents	149.1	114.0	-35.2	1.5
Net borrowings	303.1	377.3	74.3	-1.5