Doosan Fuel Cell

Q3 2025 IR Presentation

Nov. 2025
Investor Relations

Disclaimer

The information herein is provided for your information purposes only and contains preliminary figures which may be materially different from the final figures.

Forecasts and projections contained in this material are based on current business environments and management strategies, and they may differ from the actual results upon changes and unaccounted variables.

We make no guarantees and assume no responsibility for the use of information provided. We trust your decisions will be based on your own independent judgment.

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

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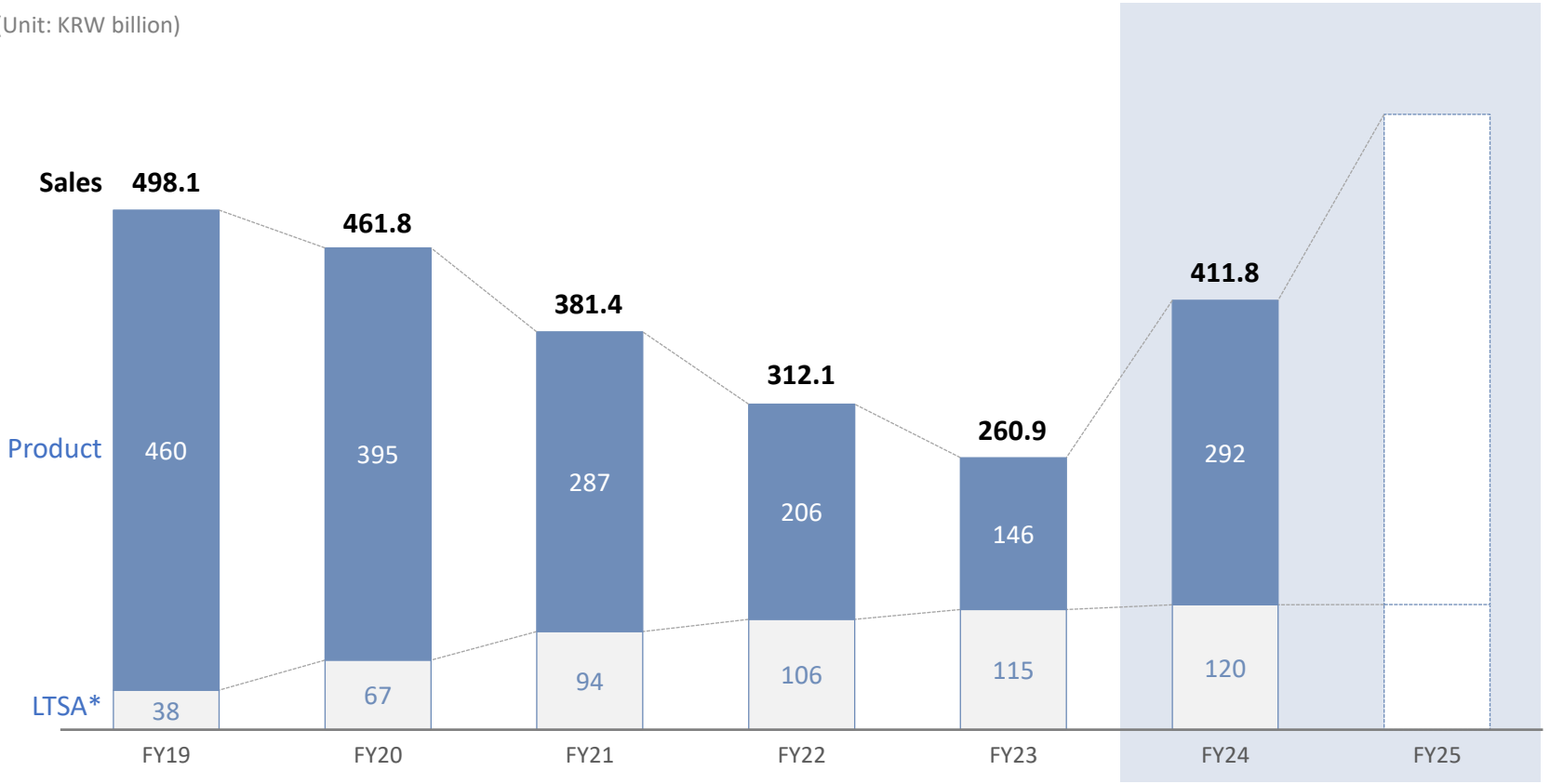
1. Sales

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

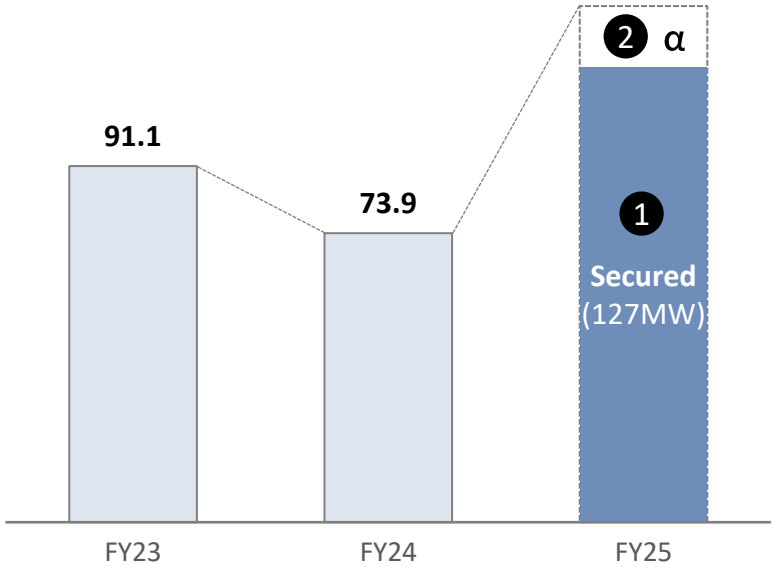
2. Order Performance and Outlook

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

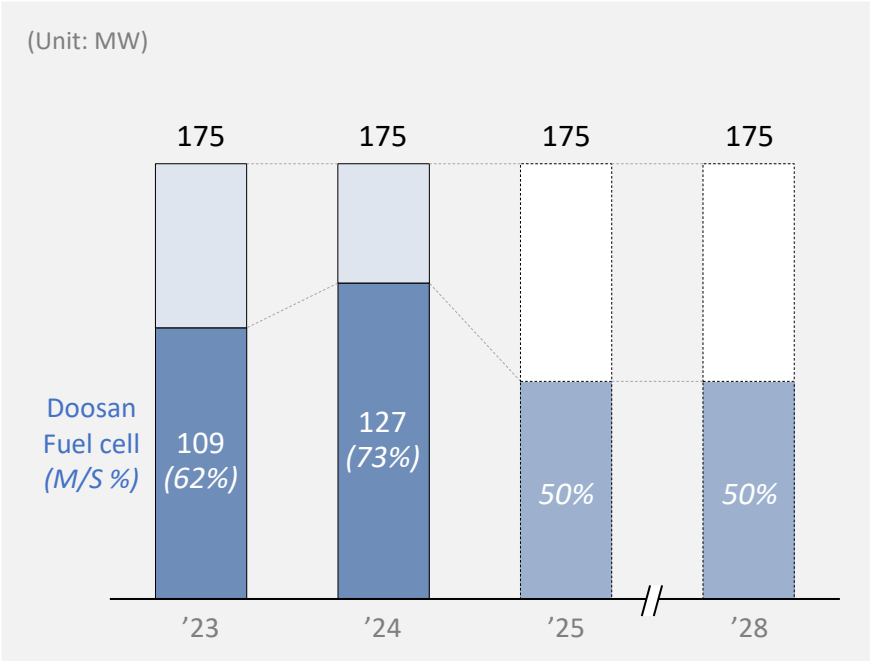
- New overseas orders
  - Asia: Securing presence through pilot projects in China and Taiwan
  - US: Winning orders for sales in the US market through affiliates
- Sales of components such as SOFC stack
- Remaining quantity of RPS

1) CHPS: Clean Hydrogen Portfolio Standard
2) RPS: Renewable Portfolio Standard

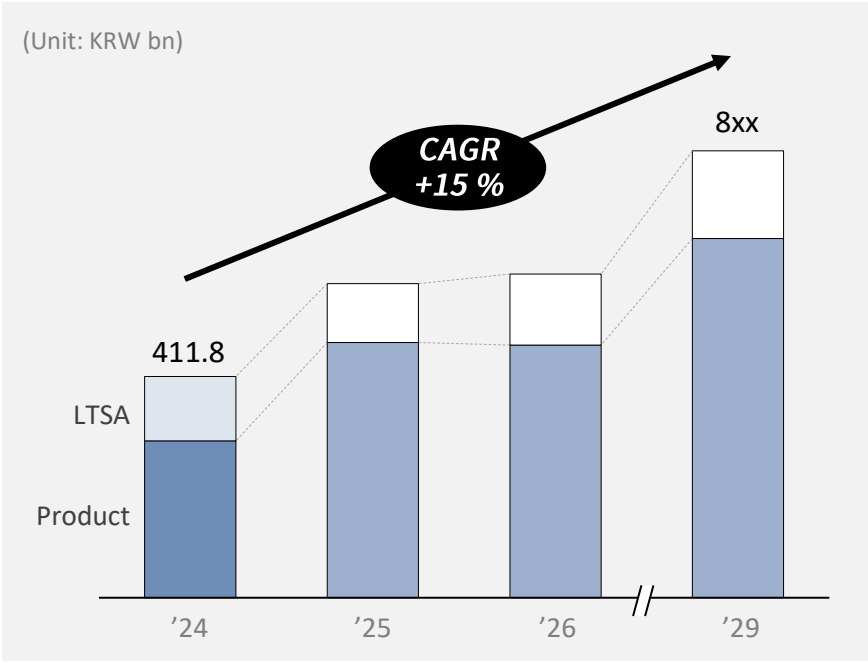
3. Mid-to-Long Term Sales Outlook

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

CHPS General H2 Bidding Market Outlook



Mid-to-Long Term Sales Outlook



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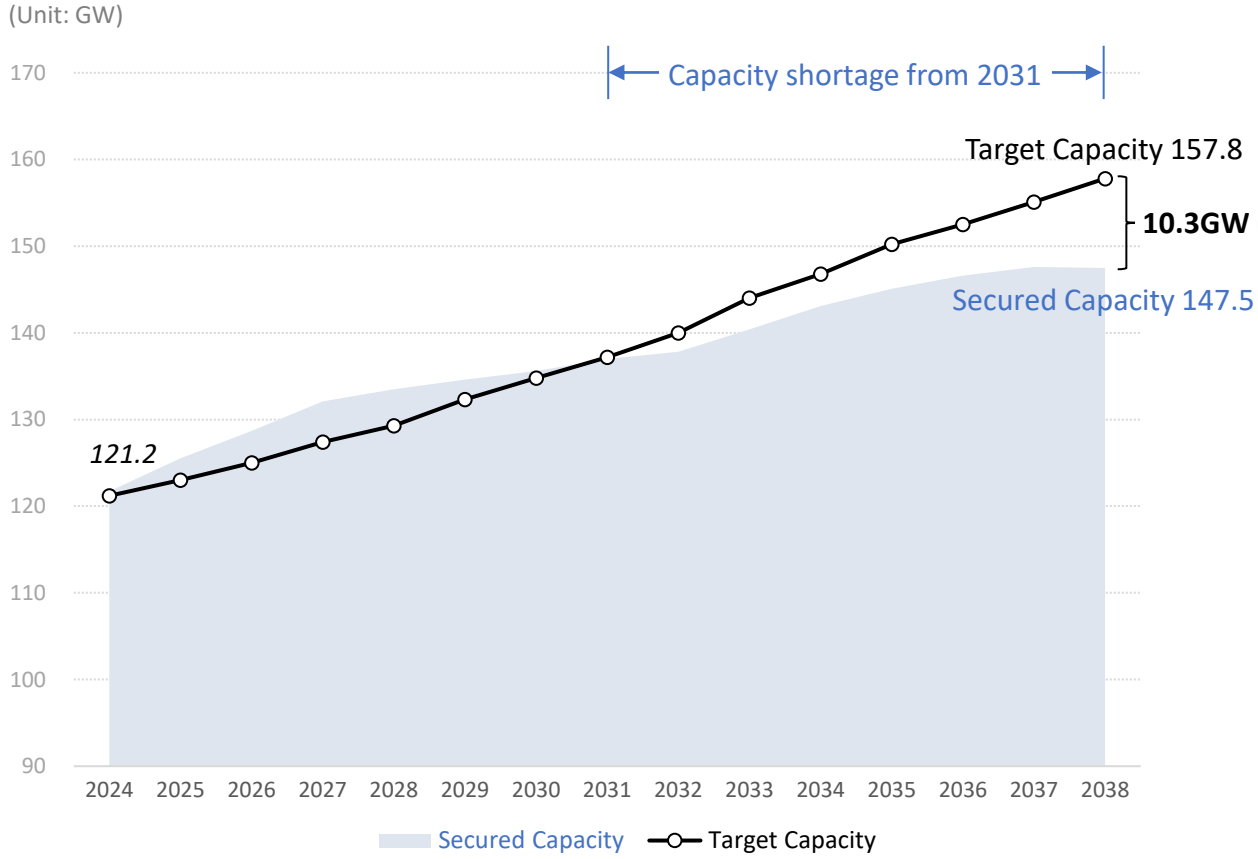
1. Domestic Power-generation Market

The 11th Basic Plan for Electricity Supply & Demand[1]: 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)



New Power Facility Composition by Period

(Unit: GW)

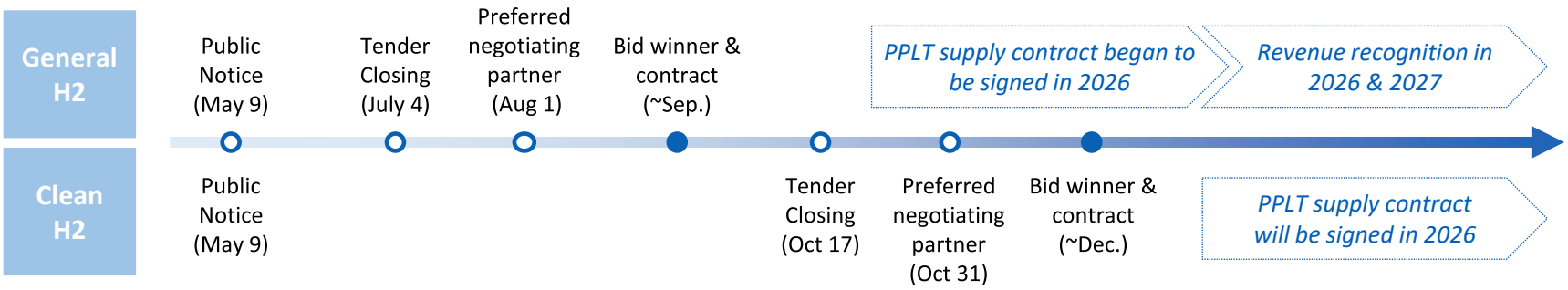
Period	Capacity shortfall	Facilities to be Deployed
’31-’32	2.2	CHP 2.2
’33-’34	1.5	deferred 1.5
’35-’36	2.2	SMR 0.7 Carbon-free competition 1.5
’37-’38	4.4	NPP 2.8 deferred 1.6
Total	10.3	

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.

Time line



Description

		General H2	Clean H2
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	Levelized Cost of Energy
	Others (40%)	Industrial·economic contribution, characteristics of distributed power, system acceptance, etc.	Clean H2 grades, stability of fuel introduction, 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. Data Center Market

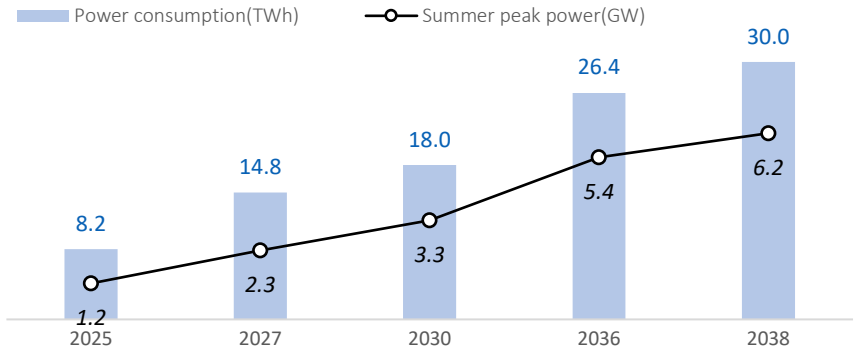
Fuel cell market opportunities driven by rising Data Center power demand

(Domestic) Transitioning from back-up power role to primary power

(Overseas) Leveraging overseas affiliates to win U.S. data center orders and advancing pilot projects in Southeast Asia

Domestic Data Center power demand outlook

The 11th Basic Plan for Electricity Supply & Demand*



- Fuel cells in data centers are confined to back-up power due to KEPCO centralized domestic supply system
  - Doosan Fuel cell to supply 1 unit to Equinix Goyang (Aug.'23) and 2 units to Samsung Electronics HPC data center (Apr.'24)
- Fuel cells are expected to play a growing role as distributed power sources amid surging data center demand and Seoul-area concentration
- Pursuing long-term use of fuel cells as primary power
  ⇒ Advancing commercialization and regulations with partners

Why Fuel Cells?

Fast

- Short manufacturing and installation enables power supply within one year of order
- On-site power
  → Eliminates the need to wait for grid connection

Reliable

- High availability(95%) ensures 24/7 power generation
- No weather-related intermittency; ESS not required

Data Center

Efficient

- Electricity efficiency comparable to gas turbines
  - NG model 43%, Hydrogen model 50%
  - Using heat for data center cooling boost efficiency↑
- Compact footprint
- Modular supply → Scalability

Eco-friendly

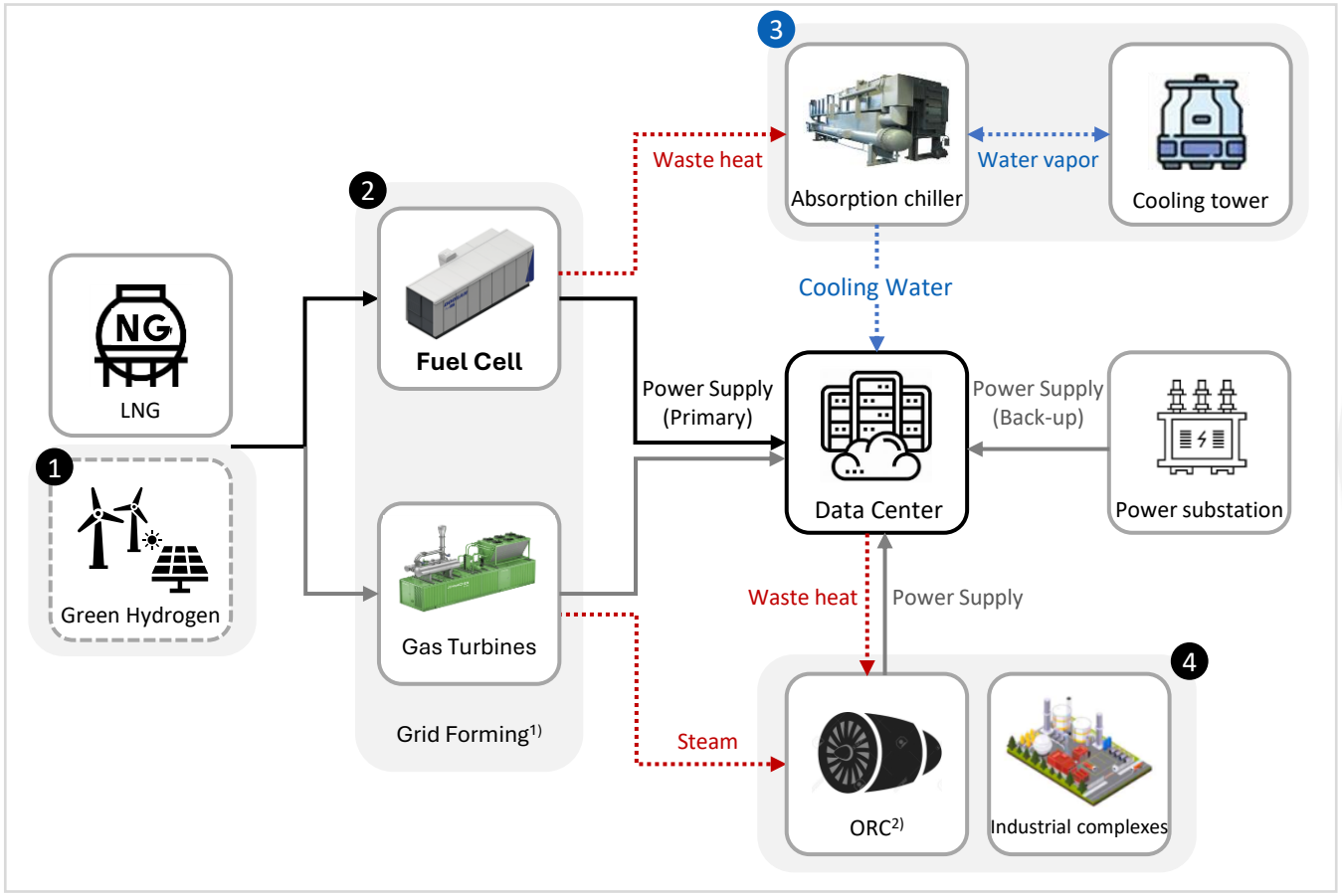
- Minimal NOx and SOx emissions
- Hydrogen model → No greenhouse gas emissions

*) Ministry of Trade, Industry and Energy (Feb 21, 2025)

[Back-up] Fuel Cell Model for Data Center

Fuel cells serve as stable and eco-friendly on-site power sources, and can enhance energy efficiency when integrated with various facilities

- Business development and policy improvement initiatives are underway to supply main power to data centers



1 **Carbon-free power generation is possible with the green hydrogen**

- NG models can be converted to hydrogen models

2 **On-site Power supply**

- No grid connection required

3 **Utilizing fuel cell waste heat for data center cooling**

- Cooling water can be generated using an absorption chiller
- Reduce the cooling power load, which accounts for 20% to 40% of the total power consumption in data centers

4 **Additional heat and steam generated can also be utilized**

- Additional electricity can be generated using an ORC system, and steam can be supplied to industrial complexes

1) Grid Forming : A power supply system that creates the reference voltage and frequency for the power grid
2) Organic Rankine Cycle : A technology that generates electricity by utilizing low-temperature waste heat

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

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

	AS-IS	TO-BE
Territory	***Korea*** Doosan Fuel cell (Non-exclusive); ***Global including Korea*** HyAxiom, Inc.	***Asia and Oceania*** Doosan Fuel cell (Exclusive); ***The Americas, Europe, etc.*** HyAxiom, Inc.
		* Doosan Fuel Cell is responsible for production regardless of territory
Scope of Rights	• Production, Sales, and Service (within Korea)	• Production, Sales, Service, R&D, and Sub-licensing (within the territory)
Royalty	• Payable upon product sales	• One-time payment (no additional royalties)

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

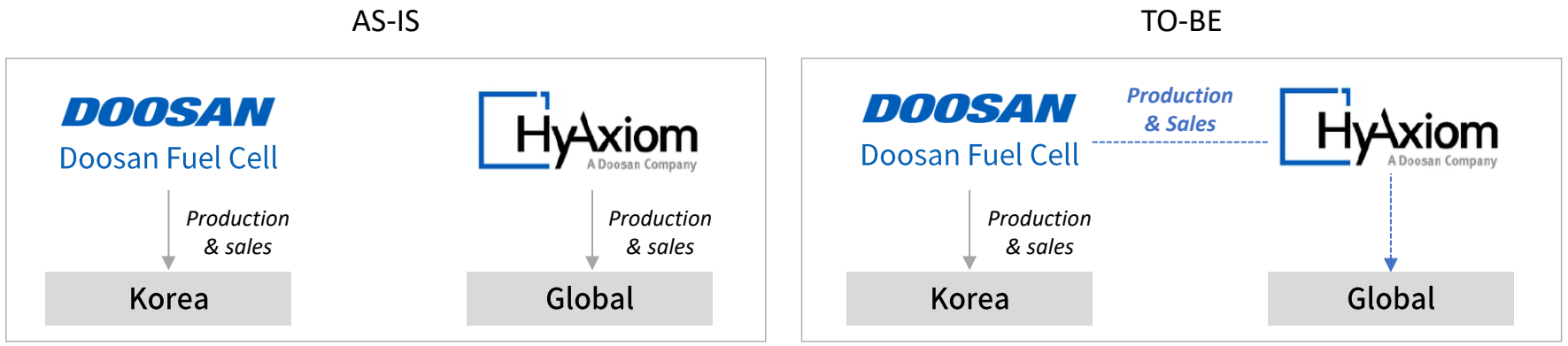
- Strengthening the foundation for entering major overseas target markets such as China, Taiwan, and Australia
- Amid intensifying U.S.-China trade tensions, the need for independent business operations is becoming more prominent

3 Diversification of Business Models

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

1. Product Competitiveness – (2) Business Area Restructuring

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

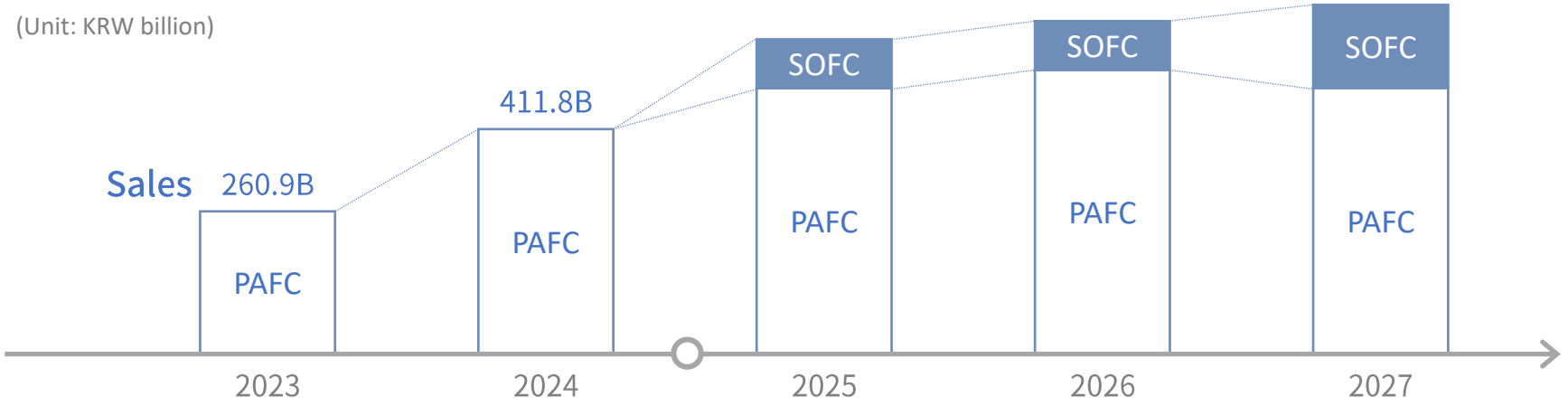


Overview	Integrating fuel cell production into the Korean corporation to secure the fundamental competitiveness of the hydrogen business
Expected effect	1 Market expansion - Potential supply of fuel cell products to the US market - Potential benefit from the increasing demand in the US market, including data centers 2 Cost competitiveness enhancement - By scaling up production, sourcing negotiation power, and production efficiency are expected to be strengthened.

2. 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.)



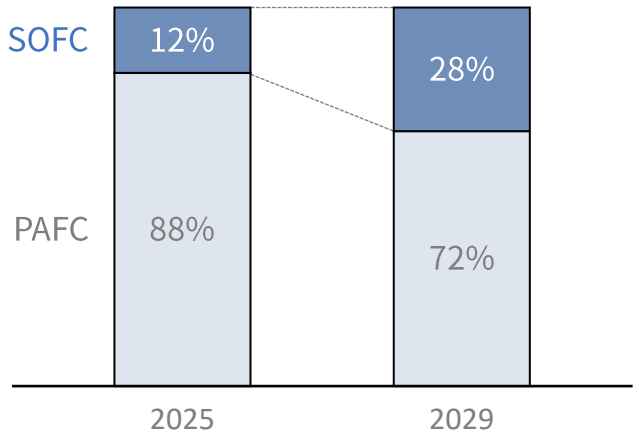
	Executing investments in growth	Strengthening competitiveness (PAFC+SOFC Hybrid)
SOFC	• Introduction of core technologies • Facility investments of KRW 155.8 billion (Gunsan factory)	• Diversifying business models in the general H2 market for CHPS (PAFC, SOFC, PA+SO) • Full-scale entry into data center market • Commercialization of SOFC stack foundry
PAFC	• Acquisition of electrode business for KRW 22.4 billion	

[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)

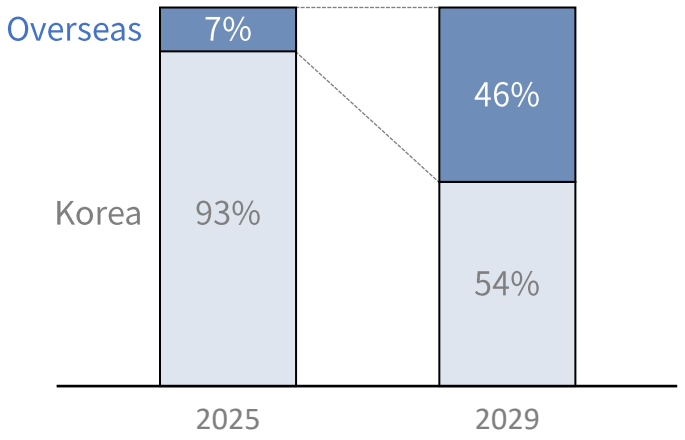
[PPLT revenue share by product]



- 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. Q3 2025 Financial Performance
5. Income Statements
6. Financial Statements

Appendix 1. Company Overview

A leading player in the domestic fuel cell power generation market

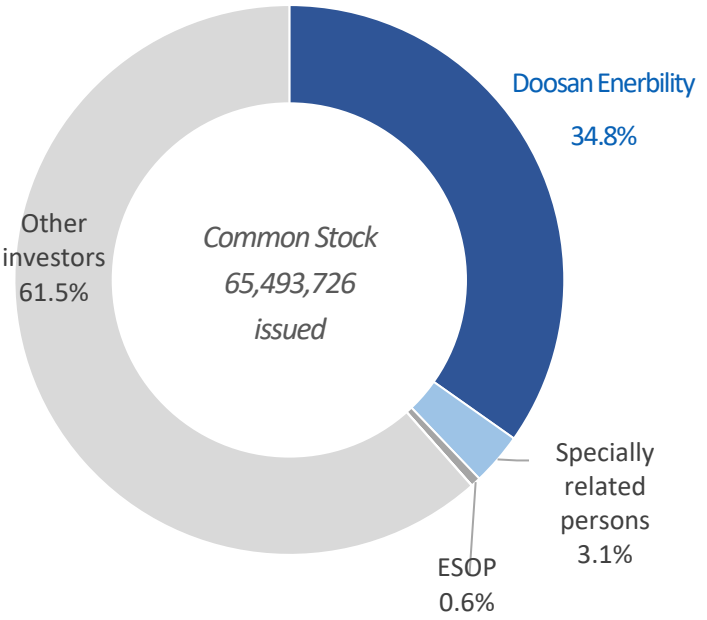
About Doosan Fuel Cell

[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	• 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

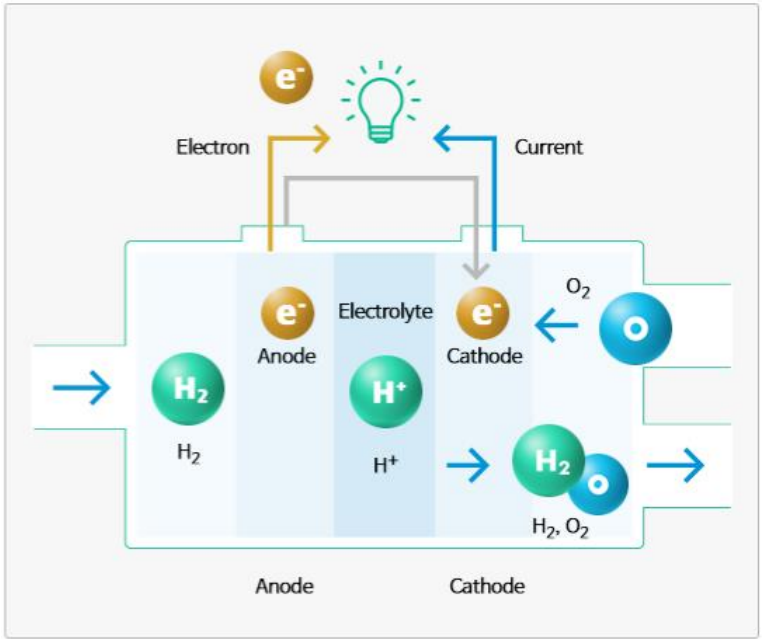
Production	Storage / Shipment	Fueling	Utilization
Byproduct H2	Pipeline	H2 fueling station – Tri-Gen[1] model	Fuel cell systems for power generation – Manufacturing the system
Reformed H2	Tube trailer		Mobility fuel cells – for vehicles and ships
Electrolyzer H2	H2 liquefaction		Fuel cells for buildings – Data centers, etc.
Imported H2			H2 turbine

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

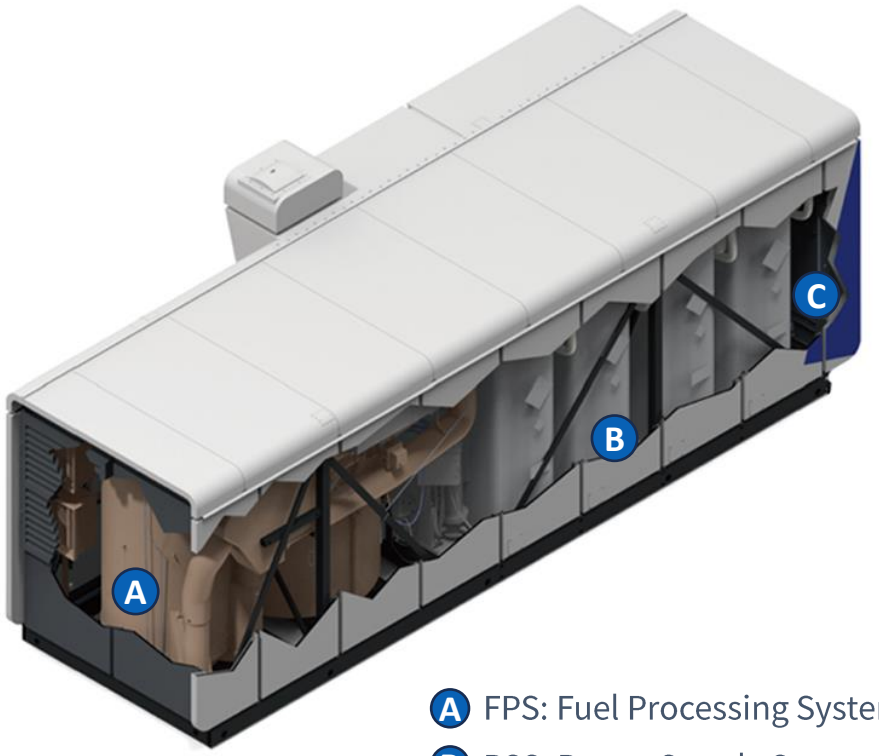
	PEMFC	PAFC	MCFC	SOFC
Electrolyte	Polymer Electrolyte Membrane	Phosphoric Acid	Molten Carbonate	Solid Oxide
Operation Temperature	25 ~ 80℃	160 ~ 200℃	650℃	600 ~ 1,000℃
Catalyst	Platinum	Platinum	Perovskites	Nickel
Elec. Efficiency	35%	40 ~ 45% (NG) 48 ~ 50% (H2)	45 ~ 60%	50 ~ 60%
CHP (Elec. + Heat)	-	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

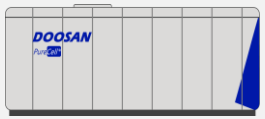
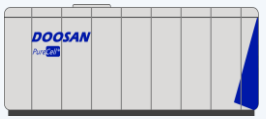
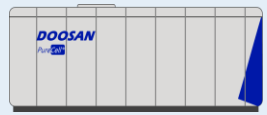
1) High localization rate, 2) High combined efficiency and World's first commercialization of H2 model,
3) Technologies aligned with national policy orientations (CHPS), such as load-following

✓ Main components of PAFC

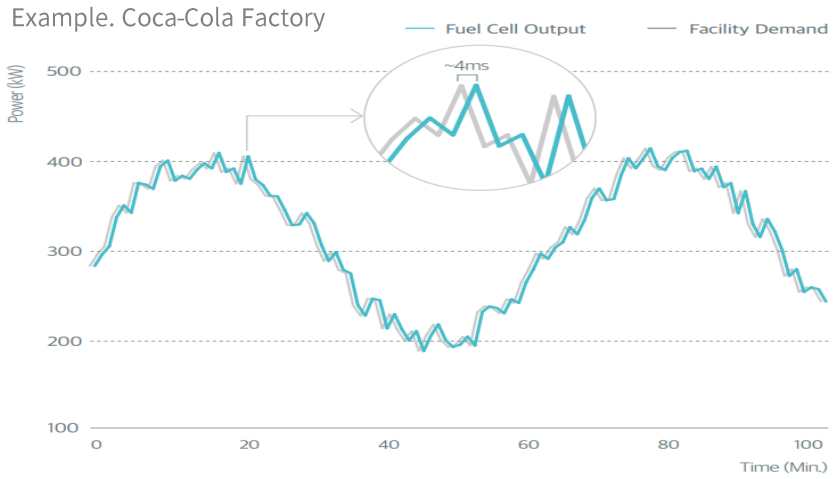


- A FPS: Fuel Processing System
- B PSS: Power Supply System
- C ESM: Electrical System Module

✓ Easy transition to a hydrogen model

NG model	LPG/NG model	Hydrogen model
Natural gas	LPG + NG	Pure hydrogen
		

✓ Load-following: fast response in the power grid

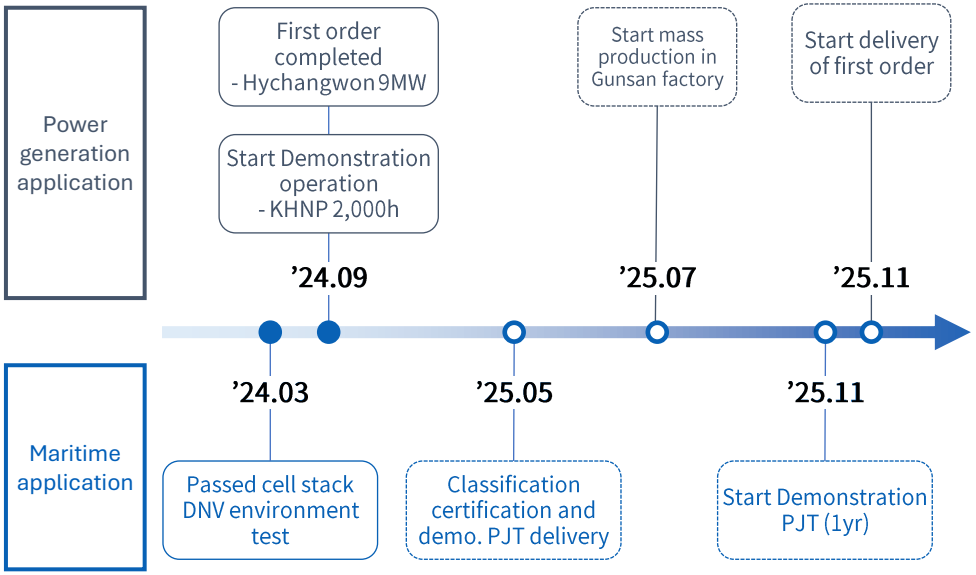


Appendix 3-2. Fuel cell: SOFC (1/2)

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	Electrical efficiency	Low-to-medium temperature (approximately 600℃) operation to improve stability and product lifetime
300kW	55~60%	

* 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 load[1] role, PAFC as a peak load[2] 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 3-2. Fuel cell: SOFC (2/2)

SOFC mass production begins in H2 2025

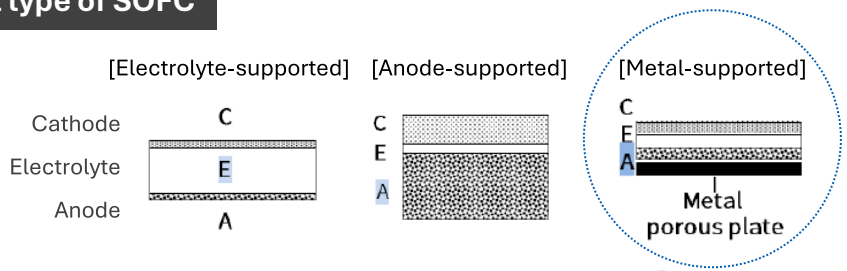
- 5kW Stacks have started shipping; 300kW SOFC products to be delivered from year-end

SOFC product

Technology	Metal-supported low temperature SOFC
Rated Power	300kW
Efficiency	55% (64% at BOL[1)])
Temperature	Around 600℃ (improved durability and lifespan)
Fuel	Natural Gas

1) Beginning of Life: Initial state with maximum performance

Cell type of SOFC



[Gen3 SOFC: Metal support handles mechanical stress during stacking]

Pros
- Operation around 600℃ due to reduced electrolyte thickness
- High stability thanks to high mechanical strength
  → Shock-resistant, broadly applicable e.g., marine fuel cells

Cons
- Complicated manufacturing process. No mass production to date

Manufacturing process

Cell Mfg.
- Fine perforation of Steel plate
- Cathode, electrolyte, and anode are applied to the plates and thermally treated (Repeated)

Cell: *Confidential*

Stack Assy.
- Cells stacked, enclosed, and tested

Stack (5kW)

PSM Assy.
- PSM* assembled with 12 stacks, and tested

* Power Supply Module

PSM (60kW)

PPLT Assy.
- 5 × PSM and ESM assembled; SOFC produced and tested

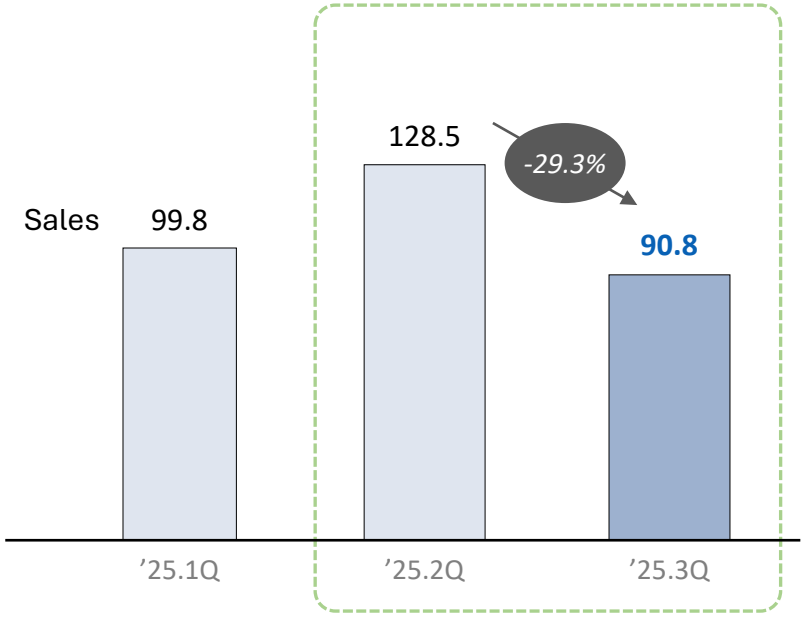
PPLT (300kW)

Appendix 4. Q3 2025 Financial Performance

Q3 2025 (Separate basis): Sales KRW 90.8bn, Operating loss KRW 15.1bn

Sales

(Unit: KRW bn)

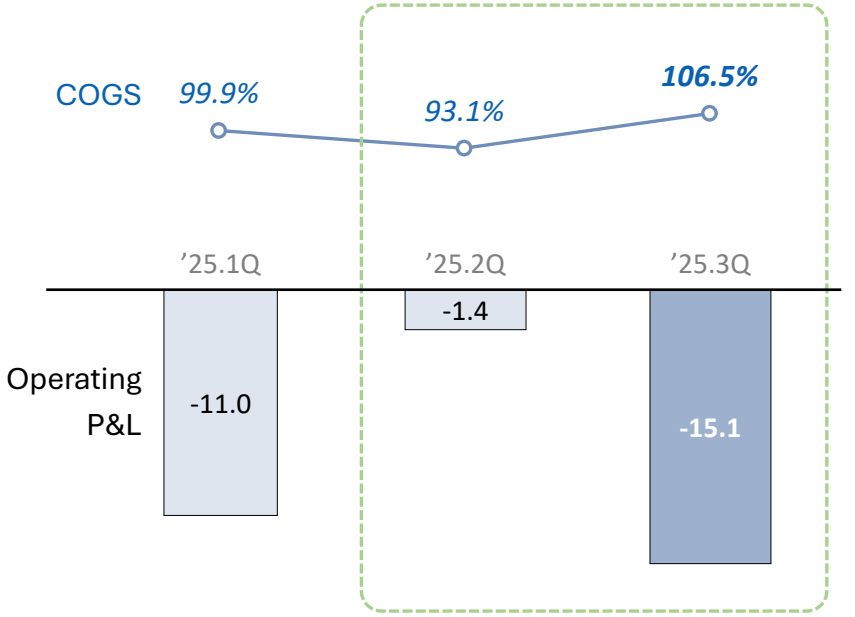


QoQ	• Q3 Sales KRW 90.8bn *(-29.3% QoQ)* – Due to the postponement of one project originally scheduled for delivery in September to November, main equipment sales decreased compared to the plan

*) Consolidated basis: Sales 90.8bn, Operating loss 15.6bn

Operating Profit & Loss

(Unit: KRW bn)



QoQ	• Increase in COGS ratio *(+13.4%p)* – Increase in SOFC-related manufacturing costs (including material costs and fixed costs) – One-off expense (disposal of obsolete inventories)

Appendix 5. Income Statements (Separate/Consolidated)

Separate Income Statement

(Unit: KRW bn)	'24.3Q	'25.2Q	'25.3Q	YoY	QoQ
Sales	**32.0**	**128.5**	**90.8**	+18.4%	-29%
COGS	26.0	119.6	96.7		
Gross Profit	6.0	8.9	-5.9		
SG&A	8.3	10.3	9.2		
OP	**-2.3**	**-1.4**	**-15.1**	Cont. Loss	Cont. Loss
Margin(%)	*-7.2%*	*-1.1%*	*-16.7%*	*-9.5%p*	*-15.6%p*
EBITDA	2.4	3.5	-8.5		
Margin(%)	*7.6%*	*2.7%*	*-9.4%*		
Income before Tax	-3.5	-4.3	-20.0	Cont. Loss	Cont. Loss
Net Income	-2.8	-1.9	-16.8	Cont. Loss	Cont. Loss

Consolidated Income Statement

(Unit: KRW bn)	'24.3Q	'25.2Q	'25.3Q	YoY	QoQ
Sales	**32.0**	**128.5**	**90.8**	+18.4%	-29%
COGS	26.0	119.6	96.7		
Gross Profit	6.0	8.9	-5.9		
SG&A	9.0	10.8	9.7		
OP	**-3.0**	**-1.9**	**-15.6**	Cont. Loss	Cont. Loss
Margin(%)	*-9.3%*	*-1.5%*	*-17.2%*	*-7.8%p*	*-15.7%p*
EBITDA	2.1	3.1	-8.9		
Margin(%)	*6.5%*	*2.4%*	*-9.8%*		
Income before Tax	-4.4	-5.0	-20.6	Cont. Loss	Cont. Loss
Net Income	-3.7	-2.6	-17.5	Cont. Loss	Cont. Loss

※ Consolidated subsidiary: HyAxiom Motors Co., Ltd.

Appendix 6. Financial Statements (Separate/Consolidated)

Separate Financial Statement

(Unit: KRW bn)	'24.12	'25.09	Change
Total Assets	**1,180.0**	**1,308.1**	**128.1**
Current assets	666.1	648.6	-17.4
Inventories	*379.3*	*395.4*	*16.1*
Non-current assets	514.0	659.5	145.5
Total Liabilities	**677.3**	**833.2**	**155.9**
Current liabilities	364.2	518.0	153.8
Non-current liabilities	313.1	315.2	2.2
Shareholder's equity	**502.8**	**474.9**	**-27.9**
Capital stock	8.2	8.2	-
Capital surplus	477.5	477.5	0
Other equity	17.1	-10.8	-27.9
Debt to Equity Ratio	*135%*	**175%**	**41%p**
Total borrowings	**452.2**	**514.5**	**62.3**
Cash and cash equivalents	145.9	74.2	-71.7
Net borrowings	**306.3**	**440.3**	**134.0**

Consolidated Financial Statement

(Unit: KRW bn)	'24.12	'25.09	Change	Consolidation adjustments
Total Assets	**1,179.7**	**1,304.6**	**124.9**	**-3.5**
Current assets	660.6	638.6	-21.9	-10.0
Inventories	*380.4*	*396.6*	*16.2*	*1.2*
Non-current assets	519.1	665.9	146.8	6.5
Total Liabilities	**680.8**	**835.5**	**154.7**	**2.3**
Current liabilities	366.0	518.8	152.9	0.8
Non-current liabilities	314.8	316.7	1.9	1.4
Shareholder's equity	**498.9**	**469.1**	**-29.8**	**-5.8**
Capital stock	8.2	8.2	-	-
Capital surplus	476.1	476.1	0	-1.4
Other equity	14.6	-15.2	-29.8	-4.4
Debt to Equity Ratio	*136%*	**178%**	**42%p**	**3%p**
Total borrowings	**452.2**	**514.5**	**62.3**	**0**
Cash and cash equivalents	149.1	75.1	-74.0	0.9
Net borrowings	**303.1**	**439.4**	**136.3**	**-0.9**