Doosan Fuel Cell

2024 1Q IR Presentation

April 2024
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.

Table of contents

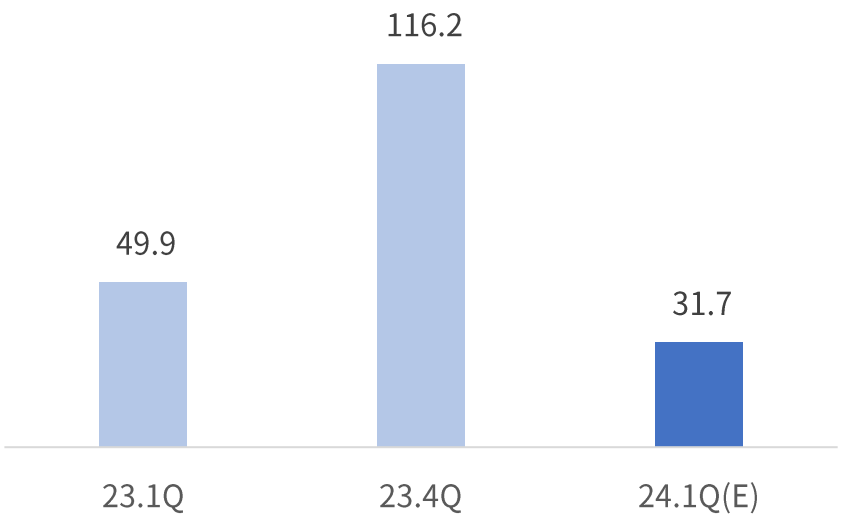
1. 2024 1Q earnings

2024 1Q earnings : sales 31.7 billion won, operating income 2 billion won

- Sales decreased year-on-year due to the absence of product delivery, and operating profit was KRW 2 billion, mainly from services.
- From the second half of the year, '23 CHPS volume won will be recognized as sales and earnings are expected to improve.
- As a result of the preparation of consolidated financial statements, sales remain the same, and operating income decreases by KRW 400 million

Sales Revenue

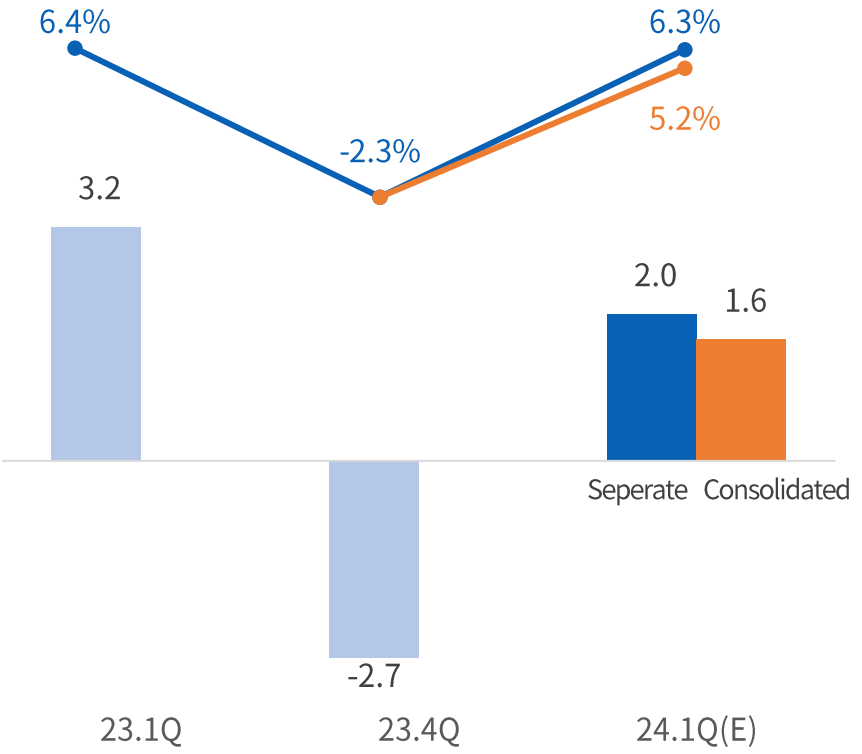
(KRW in billions)



On January 2, 2024, the company acquired a 100% share (KRW 0.5 billion) in HyAxiom Motors and incorporated it as a consolidated subsidiary and wrote its consolidated financial statements for the first time from the settlement of accounts in the first quarter of 24

Operating income

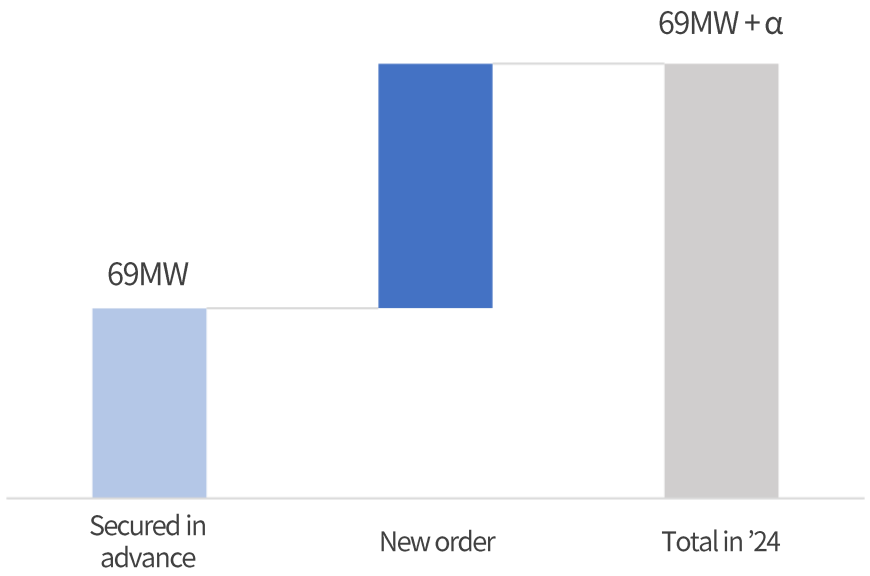
(KRW in billions)



2. Order outlook

Based on the orders secured in advance in '23, order outlook will be improved in '24

’24 Order outlook



'23 Secured Volume
[CHPS] Waiting for orders(49.3 MW) after winning bid
[RPS] Waiting for PF(19.8 MW) after contract

Orders expansion expected

RPS	Orders for Remaining Volume of RPS - Most of the remaining RPS are expected to be ordered in '24
CHPS	Opening of bid market for general and clean H2 power generation in 2Q - General H2: M/S 50% ↑ out of approx. 180MW bid - Clean H2: Pursuing to enter the market with H2 models
Distributed generation	Enforcement of the Special Act on the Promotion of Distributed Energy (6/14) - Expected to gradually expand the market by establishing a basic plan for promoting distributed energy and introducing the obligation to install it

Strengthen product competitiveness

High Power H2 Model (5CSA)	Improving costs and competitiveness to win orders - Increase power per unit (440kW→550kW) with one additional CSA - Mfg and power generation cost reduction impact per kW - To be commercialized after test run in the first half of '24

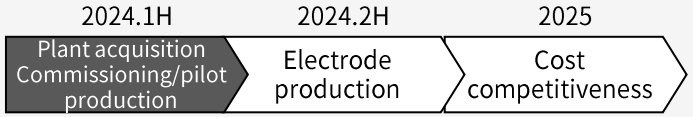
3. Management Activities - Strengthen cost competitiveness

Promote cost competitiveness from in-house electrode production

- The acquisition of electrode production facilities is planned, and cost competitiveness will be improved through process efficiency and flexible production
- Electrode[1] is a key material in the fuel cell biz and has a high cost ratio, which has a high cost reduction impact from in-house production

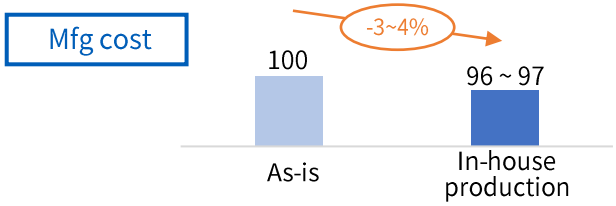
Acquisition of electrode production facilities

Subject to acquisition	Doosan Corp's EMBG electrode biz asset - Production plant : Iksan City, North Jeolla Province (near the Doosan Fuel Cell Iksan plant) - R&D facilities : Yongin City, Gyeonggi Province
Cost	A total of 22.4 billion won - Acquisition of tangible assets(all land, buildings, machinery) 17.5 billion - Acquisition of inventory assets(raw materials) 4.9 billion
Production plan	Mass production will begin in the second half of '24 - Promote external sales after securing cost competitiveness



Impact

1. Cost competitiveness ↑
   - Efforts for process efficiency and cost structure optimization
   - Flexible production in response to business environment



2. Supply chain Risk ↓
   - Ease external reliance on core materials

3. PAFC competitiveness ↑
   - Accelerate R&D related to the development of next-generation materials

1) Core materials in Cell Stack Assembly(CSA) that generate power by electrochemical reaction of H2 and O2 - see Appendix for details

4. New biz - SOFC

Preparation for SOFC biz for power generation and maritime application is on track

- Working on a mass production system of SOFC for power generation, Doosan FC will win the first order in '24 and supply them in '25
- Passed the SOFC cell stack environment test for marine application, delivery schedule for demonstration PJT after certification in ’24
- Plan to secure a variety of demand sources through the sale of finished SOFC products and cell stacks

SOFC mass production build

- Location: Saemangeum Industrial Complex, Gunsan-si, Jeollabuk-do
- Production: 50 MW Solid Oxide Fuel Cell (SOFC) Cell Stack Mfg. and System Ass'y Line
- Currently, preparation for mass production system after completion of construction
  - After winning the first order of SOFC for power generation in '24, mass production in earnest from the first half of '25

2023	2024	2025	2026
Construction of SOFC production facilities completed	Production of initial orders & prototype for power generation	Start Mass production of stationary & site supply	Order expansion

Maritime SOFC Cell Stack environmental test

- Verification Authority: DNV (Norway Ship Classification Association)
- Details : Environmental test of SOFC cell stack for ships (world's first)
  - Normal operation of cell stack under ship operating conditions (vibration, slope)
- Maritime prototype SOFC is scheduled to be delivered in the end of '24 after the certification of the marine SOFC

2022	2024	2025	2026
SOFC Demonstration Consortium for ships[1)]	SOFC certification/Mfg. and supplying prototype for ships	Demo PJT Vessel Operation (1yr)	Marine SOFC commercialization

1) Working with Shell, DNV, and HD Korea Shipbuilding & Marine Engineering, 600kW SOFC will be installed as the ship's auxiliary power unit (APU) to demonstrate for a year from '25

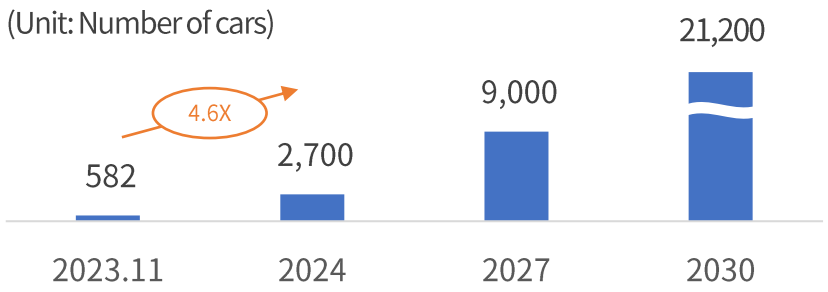
4. New biz - Mobility

Securing shares in a subsidiary to efficiently promote the mobility biz

- Expected to expand the supply of hydrogen buses from ’24
- HyAxiom Motors will launch LD hydrogen buses within this year to enter the mobility market

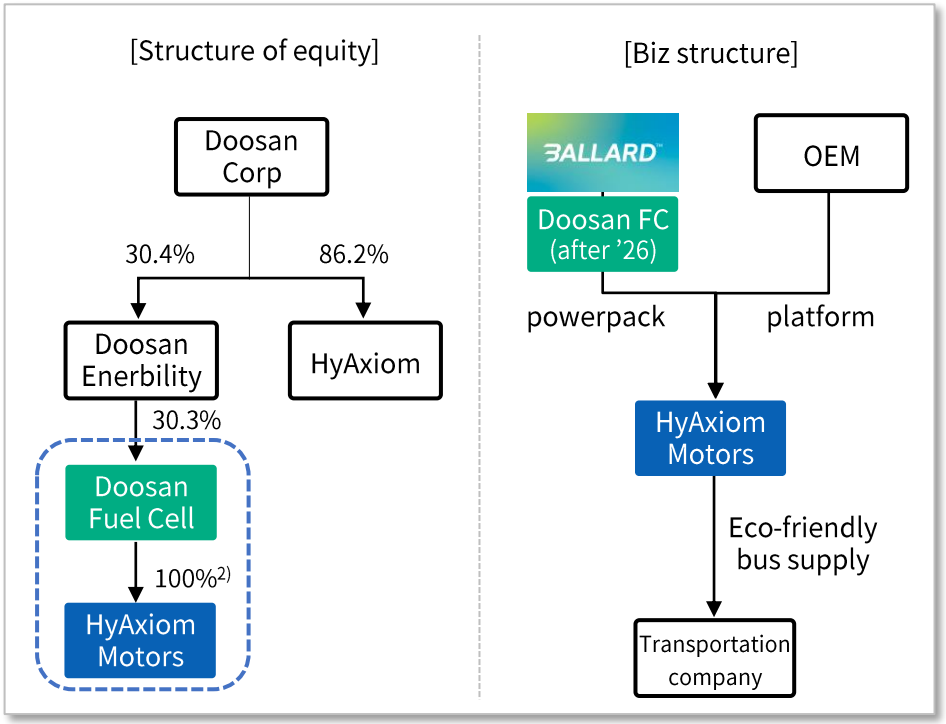
H2 bus supply expansion

- The 6th Hydrogen Economic Committee’s 'Measures to Expand the Supply of H2 Electric Vehicles' (23.12)



- Supply 300,000 hydrogen cars to meet NDC[1] target by 2030
  - 34,000 units were supplied as of the end of November ’23
  - The supply of commercial vehicles(H2 buses) will be promoted mainly
- Large-scale demand-based hydrogen bus supply
  - Urban buses, short-distance intercity buses, red buses, public institution buses, etc.
  - Expected to supply about 2,000 units annually between ’24 and ’27
  - Subsidy will be raised when diesel buses are converted and hydrogen fuel subsidies will be revised

Mobility Corporation Overview



1) National Determined Contribution
- Plans to reduce greenhouse gas emissions by 40% compared to BAU by 2030

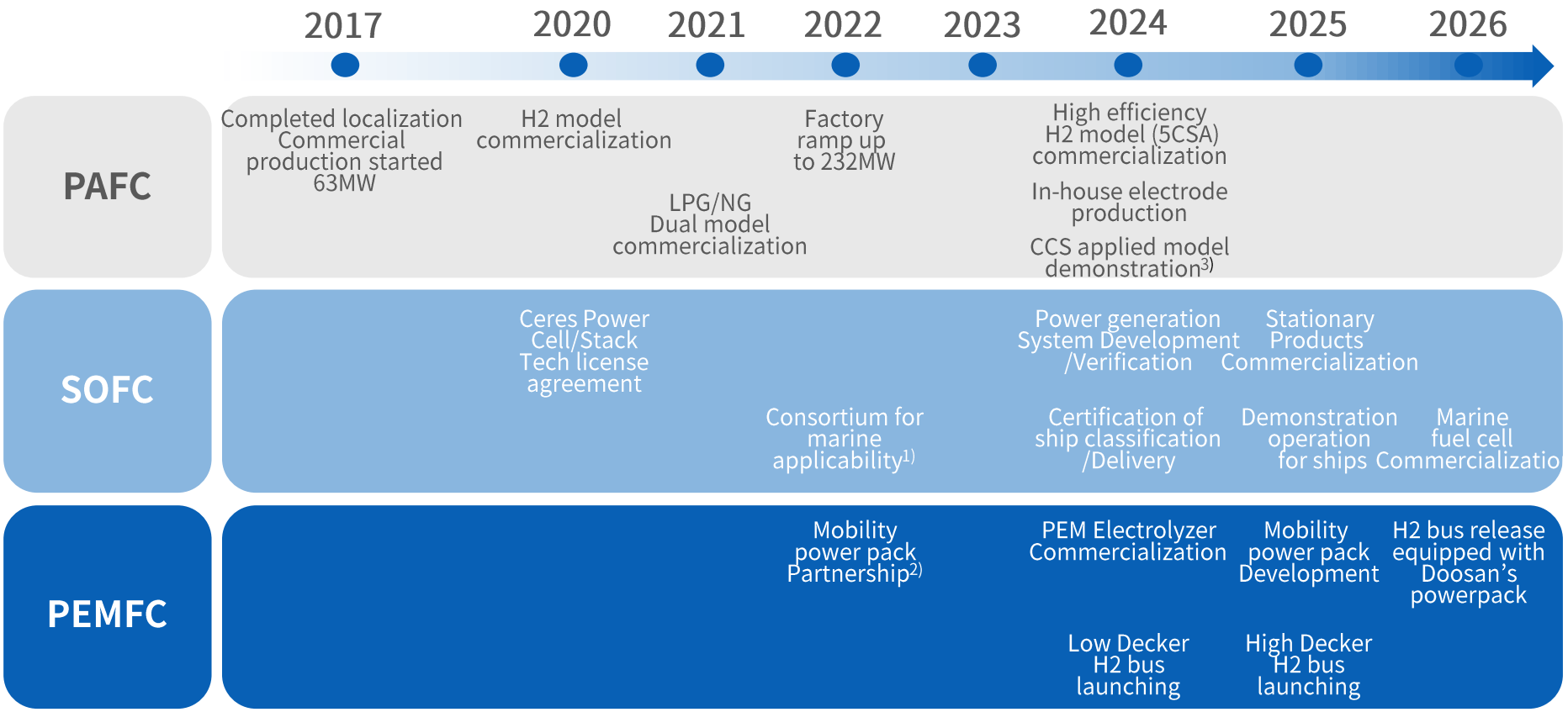
2) Acquired 100% (KRW 0.5 billion) stake in HyAxiom Motors Co., Ltd. from HyAxiom on Jan 2nd, '24
- Additional investment will be made after building detailed mobility biz plan

Q&A Session

Appendix. Technology Roadmap

Utilizing various technologies to build new growth engine

- Diversification of power generation portfolio through commercialization of high-efficiency hydrogen models and SOFC for power generation
- Securing new growth engines through the development of commercial vehicle mobility power packs and marine fuel cells



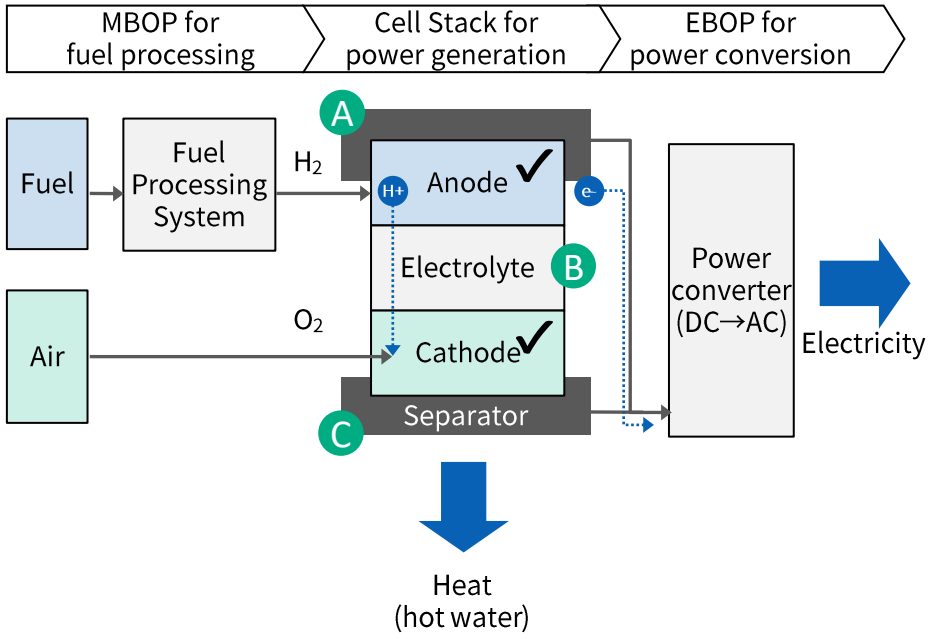
1) Working with with Shell, DNV, and HD Korea Shipbuilding & Marine Engineering, 600kW SOFC will be installed as the ship's auxiliary power unit (APU) to demonstrate for a year from '25
2) Doosan FC, Ballard Power Systems and HyAxiom signed a MOU to develop power packs for mobility and H2 bus supply projects
3) Working with Korea Hydro & Nuclear Power, Airrane and Korea Engineering Consultants, CCS(Carbon Capture Storage) applied fuel cell demonstration will be carried out for a year

Appendix. How Fuel Cell Works

Fuel cells generate power and heat through electrochemical reactions of H_2 and O_2

- Electrodes(Anode and Cathode) are key material in Cell Stack where electrochemical reaction occurs

Fuel Cell Structure and Principles



A Hydrogen fuel is channeled to anode and split into proton and electrons by a catalyst.

B Electrolyte only allows proton to pass through it to the cathode. Electrons travel along an external circuit, creating electricity.

C Proton passing through the electrolyte and oxygen introduced into the cathode combine through a catalyst to produce water.

Appendix. Financial statement(1/2)

Summary of Financial Position

	Separated					Consolidated	
(KRW in billions)	23.1Q	23.4Q	24.1Q	YoY	QoQ	24.1Q	impact
Total assets	1,011.9	1,070.8	1,140.4	128.5	69.6	1,139.8	-0.6
Current asset	635.9	648.1	693.5	57.6	45.4	693.1	-0.3
Non-current asset	376.0	422.8	446.9	71.0	24.2	446.7	-0.3
Total liabilities	486.5	558.2	627.6	141.1	69.4	628.8	1.2
Current liabilities	294.8	287.4	285.0	-9.8	-2.4	285.3	0.3
Advanced Received	16.2	12.3	23.9	7.7	11.6	23.9	-
Non-current liabilities	191.7	270.8	342.6	150.9	71.8	343.4	0.9
Total capital	525.4	512.7	512.8	-12.6	0.2	511.0	-1.8
Leverage ratio	93%	109%	122%	30%p	13%p	123%	0.7%p
Debt	309.0	377.5	459.0	150.0	81.5	459.0	-
Cashable assets(1)	24.9	51.6	68.6	43.7	17.0	72.7	4.2
Net debt(2)	284.1	325.9	390.4	106.3	64.5	386.3	-4.2

(1) cash and cash equivalents + short-term financial instruments + short-term financial assets

(2) Loan - Cashable assets

1 Consolidation

- Elimination of investment shares (100% stake in Motors; KRW 500 million)
- Elimination of internal transactions (loan of KRW 5 billion, etc.)

2 Slight rise in debt ratio

- Total debt +1.2 Billion
- Total capital - 1.8 Billion

Appendix. Financial statement(2/2)

Summary of Income Statement

	Separated					Consolidated	
(KRW in billions)	23.1Q	23.4Q	24.1Q	YoY	QoQ	24.1Q	Impact
Sakes revenue	49.9	1,16.2	31.7	-36.5%	-72.7%	31.7	-
Operating income	3.2	-2.7	2	-37.3%	Turn to profit	1.6	-0.4
- margin (%)	6.4%	-2.3%	6.3%			5.2%	-1.1%p
EBITDA	7	0.8	6.6	-5.1%	680.8%	6.3	-0.3
- marging(%)	13.9%	0.7%	20.8%			19.8%	-1.1%p
Pre-tax profit	1.8	-9.2	-0.2	Turn to deficit	98.0%	-0.6	-0.4
Net income-total	1.9	-9.3	0.1	-92.3%	Turn to profit	-0.2	-0.4

1 Consolidation

- Elimination of internal transactions (rent, interest income, etc.)

2 Operating profit ↓

- No sales of motors and KRW 350 million in operating loss is reflected