Investor Relations 2020

Doosan Fuel Cell
3Q 2020 Earnings Release

October 2020

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 a IFRS separate basis.

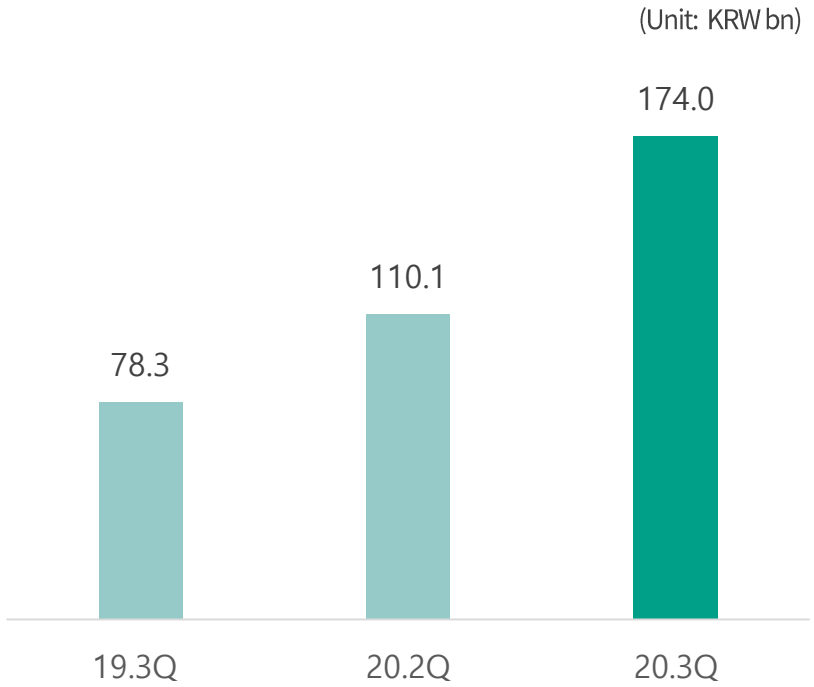
Contents

2020 Q3 Earnings

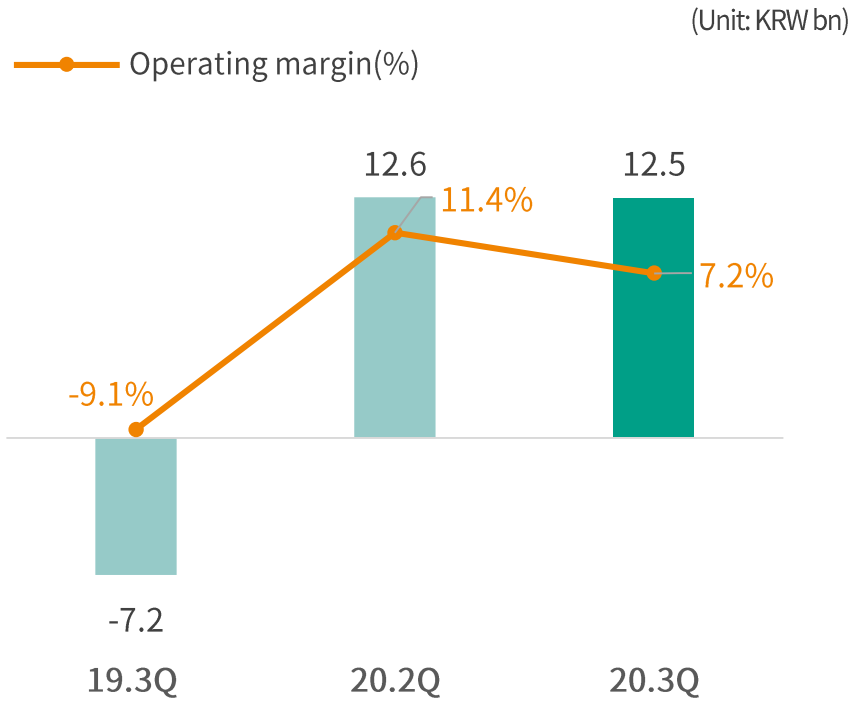
Recorded revenue of KRW 174 bn and operating income of KRW 12.5 bn

–Revenue and operating income continued to improve driven by fuel cell sales volume increase both YoY and QoQ

Sales Revenue



Operating Income



19.3Q results are based on the spin-off criteria

Fuel Cells Market to Continue Stable High-Growth

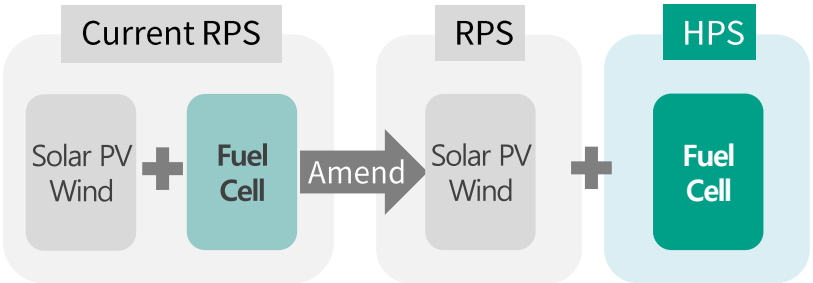
Hydrogen Economy Committee Plans to introduce HPS*

–Announced detailed action plans to reach 8 GW stationary fuel cell by 2040

–To specify supply obligations at a much more granular level

Korea Government Policy Update

- To set mid to long-term goals & annual deployment targets in the 'H_2 economy basic plan'
- HPS adoption



→ 350~400MW annual installation scheme being proposed to meet H_2 economy roadmap of '40 domestic target: 8GW

Policy Impact

✓ Stable market growth is expected with short to long-term deployment plan

✓ Fuel cells no longer compete with other renewables

*Hydrogen Portfolio Standard

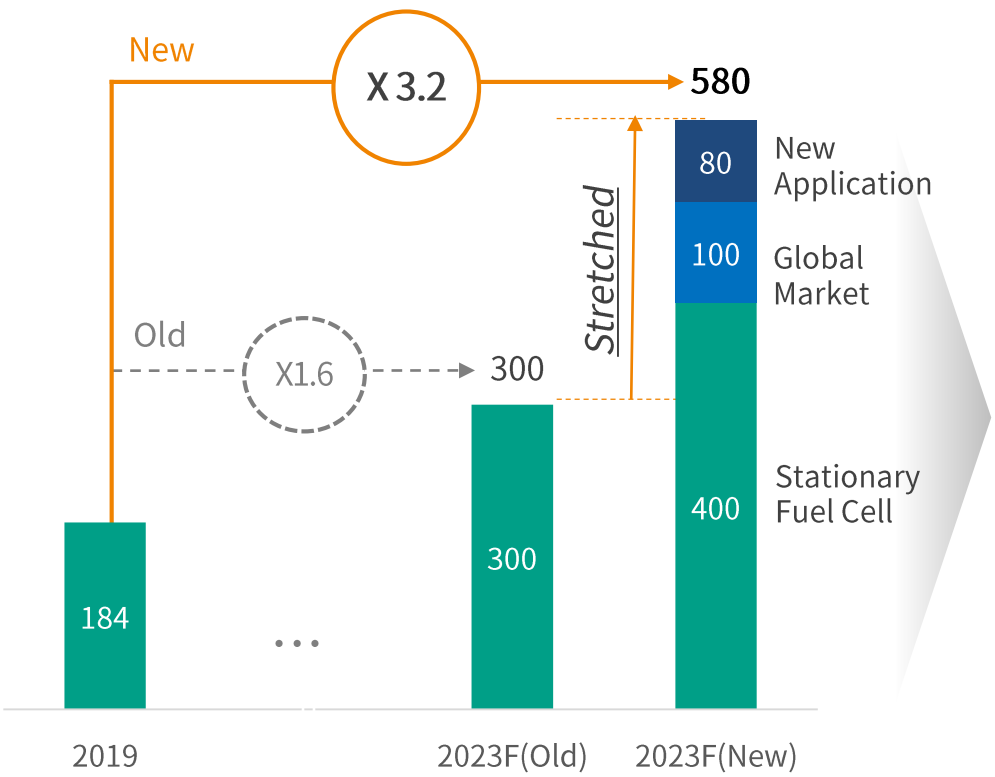
Market Outlook and Expansion Plan

Action plans for H_2 economy roadmap help predict market potential

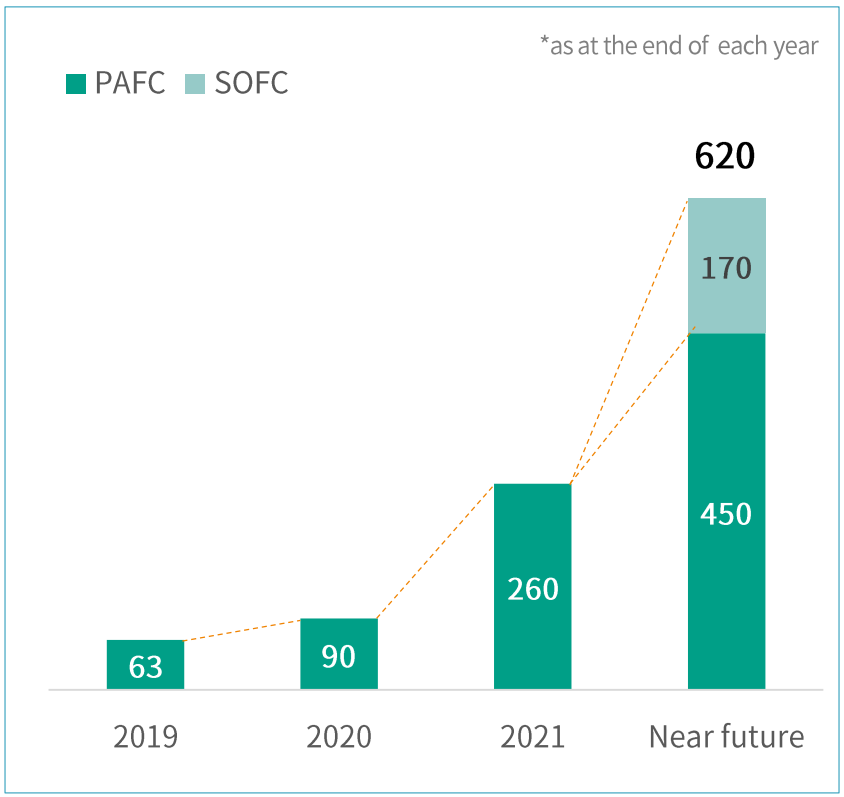
–To fulfill new application demand including H_2 charging stations and overseas market

–High localization contributes to competitive H2 industry ecosystem and job creation

Market Outlook (order basis, MW)



Doosan Fuel Cell expansion Plan (MW)



SOFC R&D and Manufacturing Facility

Highly efficient, low operating temperature SOFC R&D and localization

–SOFC technology acquisition and manufacturing facility build and diverse fuel cell portfolio will strengthen our market dominance

Overview

- Background: E-only and H_2 market growth
- Application
  - Stationary fuel cells and fuel cell powered ships
  - Electrolyzer development
- Feature: highly efficient E-only fuel cell platform
  - Low operating temperature
- Partnership
  - UK Ceres Power (Cell / stack technology transfer)
  - Joint development of large-scale mass manufacturing technology
- Manufacturing facility
  - Capacity: 50MW first and scale up to 170MW
  - Capital investment(estimated): 72.4 bn KRW (1st)

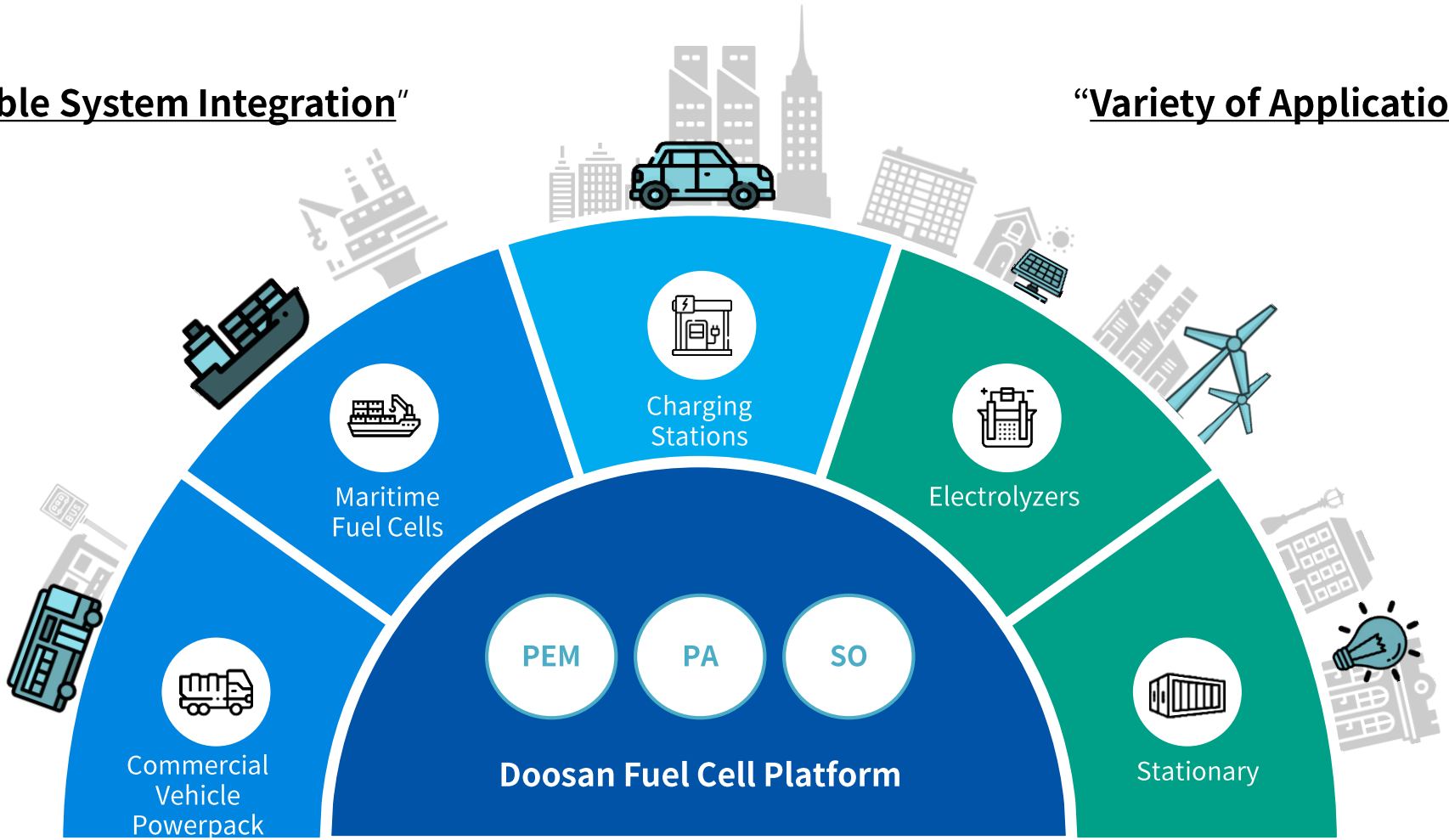
Progress and Plan

- **'20 Q2 involved in government project**
  - SOFC system development
- **'20 Oct technology transfer agreement**
  - With Ceres Power
- **'21 Ground-breaking of SOFC factory**
- **End of '23**
  - To complete R&D and plant inauguration

Doosan Fuel Cell Technology Platform

"**Flexible System Integration**"

"**Variety of Applications**"



[Doosan Fuel Cell Business]

Doosan Group's Technologies & Capabilities

Well equipped with R&D history and technical competency, Doosan Fuel Cell remains committed to new business development

R&D History

UTC Power* ('60~'14)	the 60s	○ AFC technology commercialized - Fuel cells installed in the Apollo
	'70~'90	○ Fuel Cell technology developed and commercialized - MCFC : developed stationary(1980) - PAFC: commercialized stationary(1990)
	'00~'14	○ SOFC: stationary system developed(2010) ○ PEM mobility application technology developed - Buses('04~'11) - Passenger Vehicles('02~'12) - Submarines('05~'12)
Fuel Cell Power		○ Small Application PEM technology

* Then company name before Doosan's acquisition in '14

Future Technical Strategy

1 **Entry to Electrolyzer Market**
- PEM/SOFC base Green hydrogen technology development

2 **Fuel Cell for Commercial Vehicles**
- PEM and R&D human resources to develop mobility system

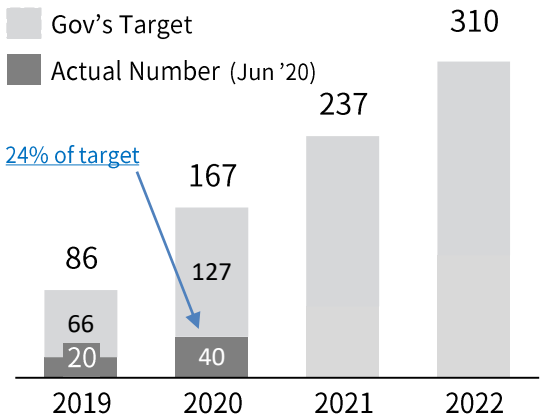
3 **Maritime Fuel Cell**
- Develop SOFC to power or propel ships

1 Entry into Electrolyzer Market

Green H_2 generation and charging station

Market Opportunities

- **Green H_2 demand rise**
  - CO_2 free green hydrogen is generated from surplus power of renewables and its demand is rising
  - Call for green H_2 incentives
- **H_2 Charging Stations**



Initiatives

- Develop a PEM electrolyzer for green H_2 generation and on-site H_2 charging stations
- **Business Model**
  - Collaboration with local energy charging service providers
  - Hydrogen charging business model development
  - Scale up to massive scale hydrogen manufacturing stations

Milestones

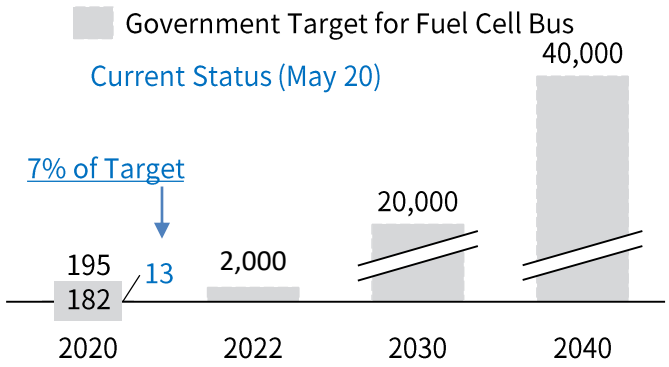
- **Domestic demonstration to build a foundation for advance into global market**
  - **Development configuration working with energy service providers**
  - **Multi-MW PEM electrolyzer development**
  - **'22 to complete pilot test**
  - **'23 commercialized**
    - To set global market strategy
    - Mass manufacturing
    - To obtain track record

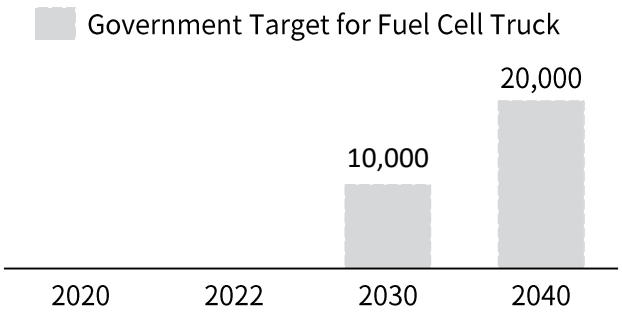
2 Fuel Cells for Commercial Vehicles

PEMFC Power Pack System Development Initiative for Truck and Bus

Market Opportunities

- Fuel cell buses/trucks are less deployed than passenger cars. Measures are required





R&D Plan & Milestones

- **Partnership with OEMs for Power Pack**

- **1H ’21 Feasibility Study**

- **System Integration**
  - To set global market strategy
  - Demonstration

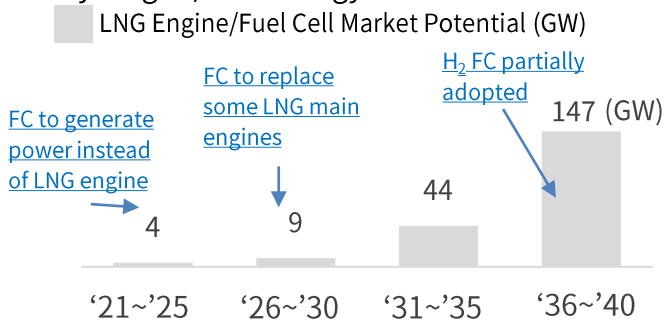
- **’24~ Commercialization**
  - Mass manufacturing & to build partnership

3 Maritime Fuel Cell Development

Working with shipowners and builders, develop SOFC system for ships

Market Opportunities

- **IMO's commitment to stronger emissions cap** provokes clean engine and shipping technologies
  - '50 GHG emissions 50% ↓ (than '08)
    - ➢ Vessels will be fueled by **LNG more** to cut GHG
    - ➢ Invest into **Carbon free clean** (ammonia, hydrogen) technology



SOURCES: Potential is based data from Transport & Environment, *2025 IMO target compliant ships;* UNCTAD.

R&D Plan & Milestones

- Partnership on fleet SOFC with ship owners and builders

• Pre-Collaboration Communication
- Communication with global shipowners and Korean builders

• AIP[2] granted
- Basic maritime design approved

• System Integration
- To set ship industry strategy
- International maritime certified through maritime network

• ~'24 Pilot demonstration and commercialization

1) EEDI (Energy Efficiency Design Index) : , a minimum energy efficiency level per capacity mile (e.g. ton mile) for different ship type and size segments.
2) AIP (Approval In Principle) is a framework to review and approve innovative and novel concepts

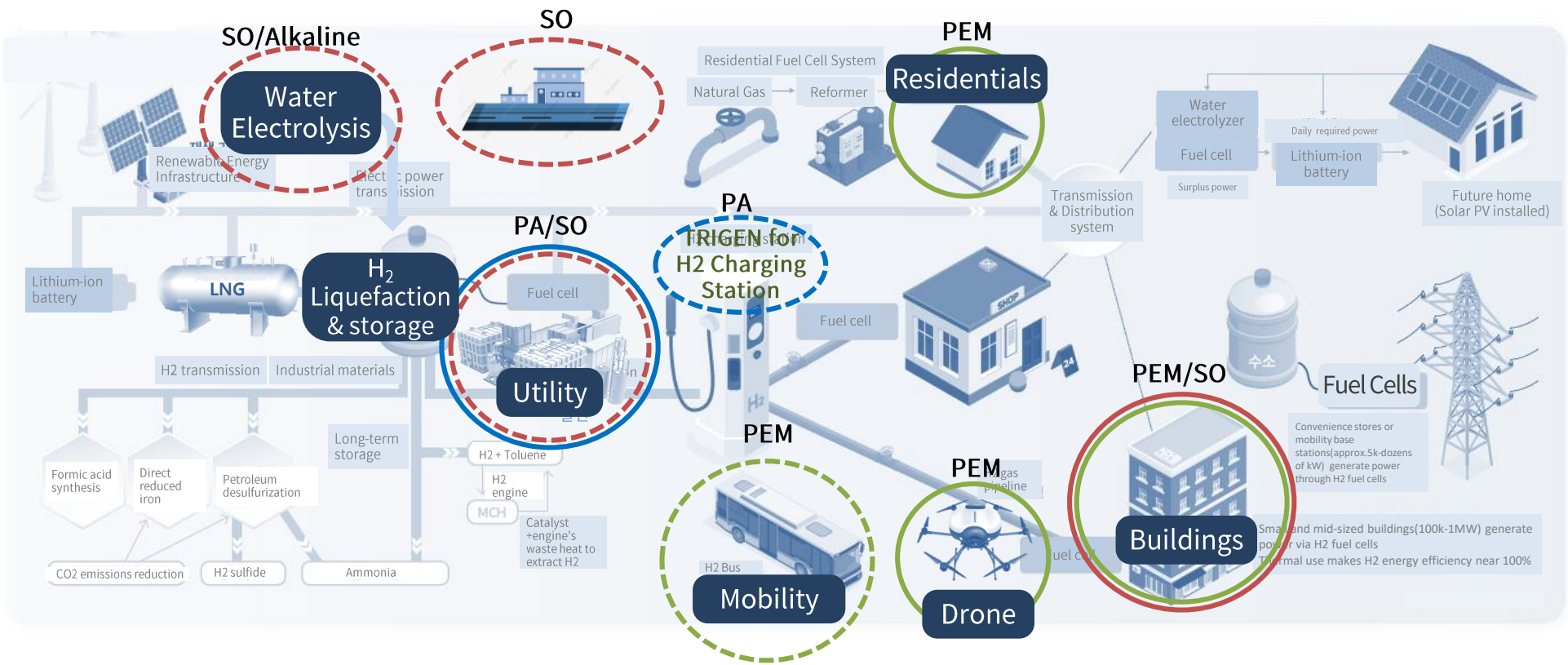
Vision for Doosan Group in Hydrogen Business

Current Biz New Biz

PAFC
Utility + H_2 Charging station

PEMFC
Residential/Drone + Mobility

SOFC
E-only + Water Electrolysis



APPENDIX

Summary of Financial Position

(Unit: KRW bn)	’20.2Q	’20.3Q	Change
Total Assets	**604.8**	**476.2**	**-128.7**
Current Assets	510.3	381.2	**-129.1**
Non-current Assets	94.5	95.0	**0.5**
Total Liabilities	**432.3**	**296.3**	**-136.0**
Current Liabilities	324.5	185.4	-139.1
Advances received	225.9	101.4	-124.6
Non-current Liabilities	107.8	110.9	3.0
Shareholder’s Equity	**172.5**	**179.9**	**7.4**
Share Capital	7.2	7.2	0
Leverage Ratio	**251%**	**165%**	**-86%p**
Debt	99.0	99.0	0
Cash	161.4	107.8	-53.6
Net Debt	**-62.4**	**-8.8**	**53.6**

Summary of Income Statement

(Unit: KRW bil)	'19.3Q	'20.2Q	'20.3Q	YoY	QoQ
Sales Revenue	**78.3**	**110.1**	**174.0**	122%	58%
Operating Income	**-7.2**	**12.6**	**12.5**	Turned Black	0%
Margin(%)	-9%	11%	7%		
EBITDA	**-5.7**	**14.0**	**14.0**	Turned Black	0%
Margin(%)	-7%	13%	8%		
Income before Tax	**-11.6**	**11.8**	**10.1**	Turned Black	-14%
Net Income	**-8.8**	**9.1**	**7.4**	Turned Black	-19%

19.3Q results are based on the spin-off criteria

R&D History

Hyundai Motors ('02~'12)

- Project:
  Development of HMC'S Fuel Cell Santa, Tucson vehicles
- Key Deliverables :
  Dev. of 34 Power Packs
  - Santa-Fe (2 units)
  - Tucson (32 units)

< Tucson >

< Santa-Fe >

Nissan('02~'06)

- Project:
  Development of Nissan's Fuel Cell X-Trail vehicles
- Key Deliverables :
  Development of Power Packs (12units)

< X-Trail >

< Power Pack >

BMW('04~'10)

- Project:
  Development of FC Auxiliary Power Unit for BMW car
- Key Deliverables :
  Demonstrated APU capabilities and freeze tolerance

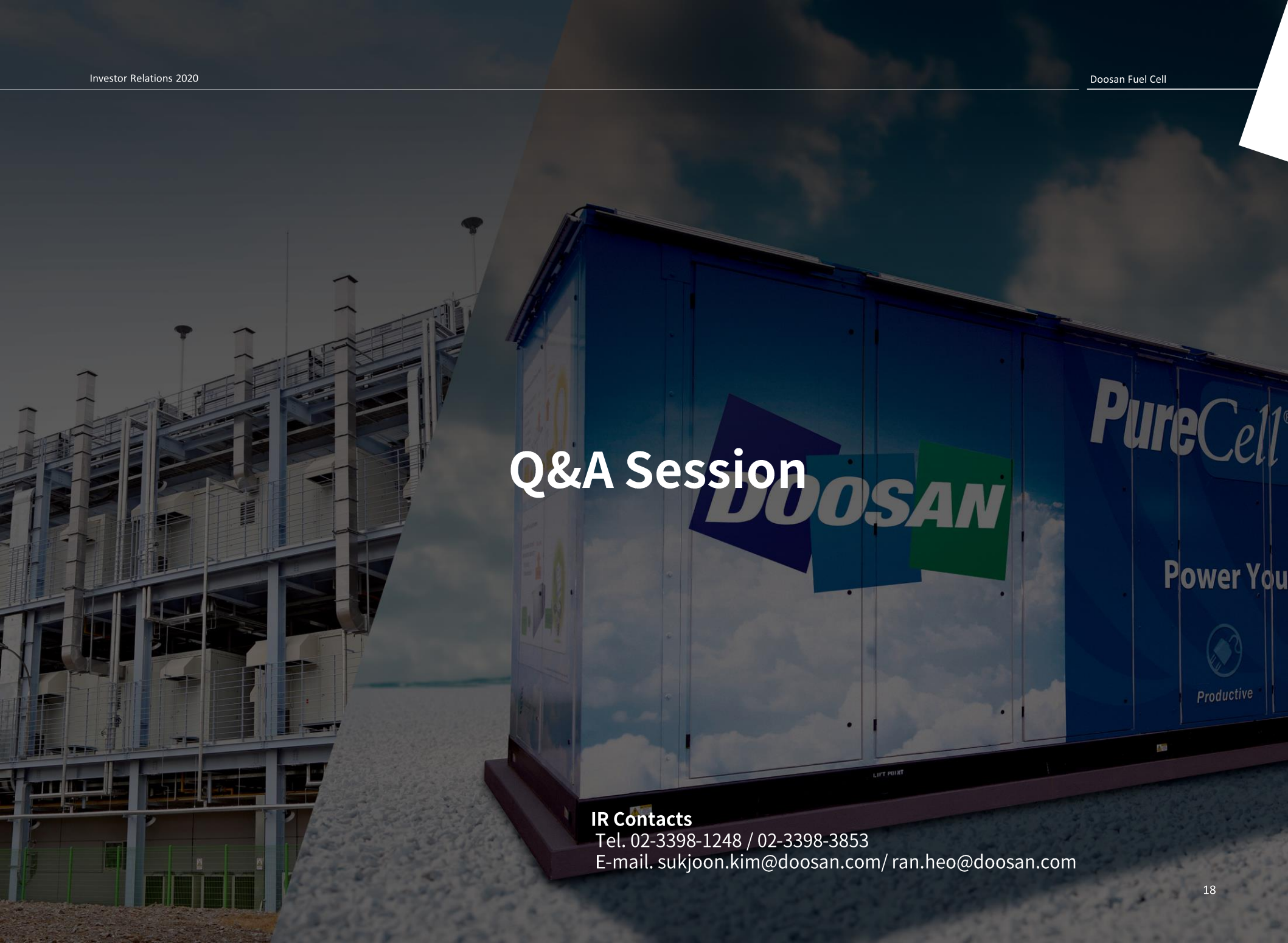
< BMW Car >

< Auxiliary Power Unit >

Bus FC PJT('04~'11)

- Project:
  Development of Fuel Cell system for buses
- Key Deliverables :
  Development of 16 Power Packs

< 120kW Power Pack >



Q&A Session

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