

Panasonic Group's Sustainability: Second Briefing

Panasonic Group

July 13, 2022

Notes: 1. This is an English translation from the original presentation in Japanese.
2. In this presentation, "FY2022" refers to the year ended March 31, 2022.

Group's Medium- to Long-term Strategy

Ideal society with affluence both in matter & mind



Medium-term management indicators (KGI)

Cumulative
Operating CF (FY23-FY25)

2.0 trillion yen

ROE (FY25)

10% or more

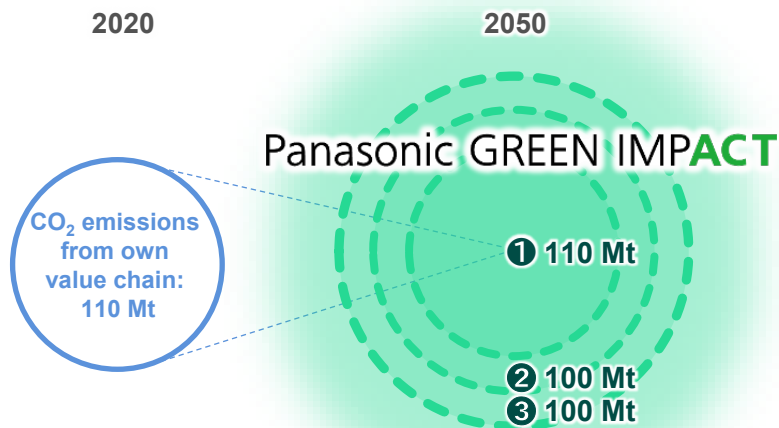
Cumulative OP (FY23-FY25)

1.5 trillion yen

Panasonic GREEN IMPACT

Contribute to CO₂ reductions in society by achieving net-zero in-house emissions and by helping customers reduce emissions

Long-term environmental vision toward energy transformation for society



① OWN IMPACT

Emissions reduction in our own Value Chain (VC), including effect of decarbonization occurring in society

② CONTRIBUTION IMPACT

“Avoided Emissions” (contribution to reducing CO₂ emissions for society) through existing businesses

③ FUTURE IMPACT

“Avoided Emissions” through new technologies and business

Medium-term action plan clarified based on strategies set by individual businesses

Thus, roadmap clarified toward net-zero in-house emissions & contribution to CO₂ reductions

*Size of contribution in CO₂ reductions: Calculated by emission factor as of 2020

GREEN IMPACT PLAN 2024 (GIP2024)

Environmental action plan “GIP 2024” formulated Feasibility of Panasonic GREEN IMPACT 2050 enhanced

		FY2021 results	FY2025 targets
CO ₂ / Energy	OWN IMPACT CO ₂ reductions in our own VC*1	—	16.34 Mt*2
	Scopes 1&2*1	Zero-CO ₂ factories CO ₂ reductions	7 factories — 37 factories 0.26 Mt*2
	Scope 3*1	CO ₂ reductions in use of our products by customers	— 16.08 Mt*2
	CONTRIBUTION IMPACT “Avoided Emissions” for society		23.47 Mt
Resources/ CE*3	Recycling ratio of factory waste	98.7%	99% or more
	Use of recycled resin (3-year sum*4)	43.3 Kt	90 Kt
	CE-based business models/products	5 businesses	13 businesses

**Commit mid-term action plan based on
backcasting from what we aim to become**

*1 Classification made based on GHG (Green House Gas) Protocol, the international calculation standard

*2 Size of CO₂ reduction targets shown above is difference from that in FY2021. *3 CE: Circular Economy

*4 “3-year sum”: FY2020-FY2022 cumulative results / FY2023-FY2025 cumulative targets

Enhance feasibility of GREEN IMPACT

Toward 2030, create contributions that reduce emissions by approx.100 Mt, in addition to net-zero in-house emissions

Scopes 1&2 ■ Scope 3 ■
 OWN IMPACT ■
 CONTRIBUTION IMPACT ■
 FUTURE IMPACT ■

Size of CO₂ emissions & reductions in our own VC (tons)



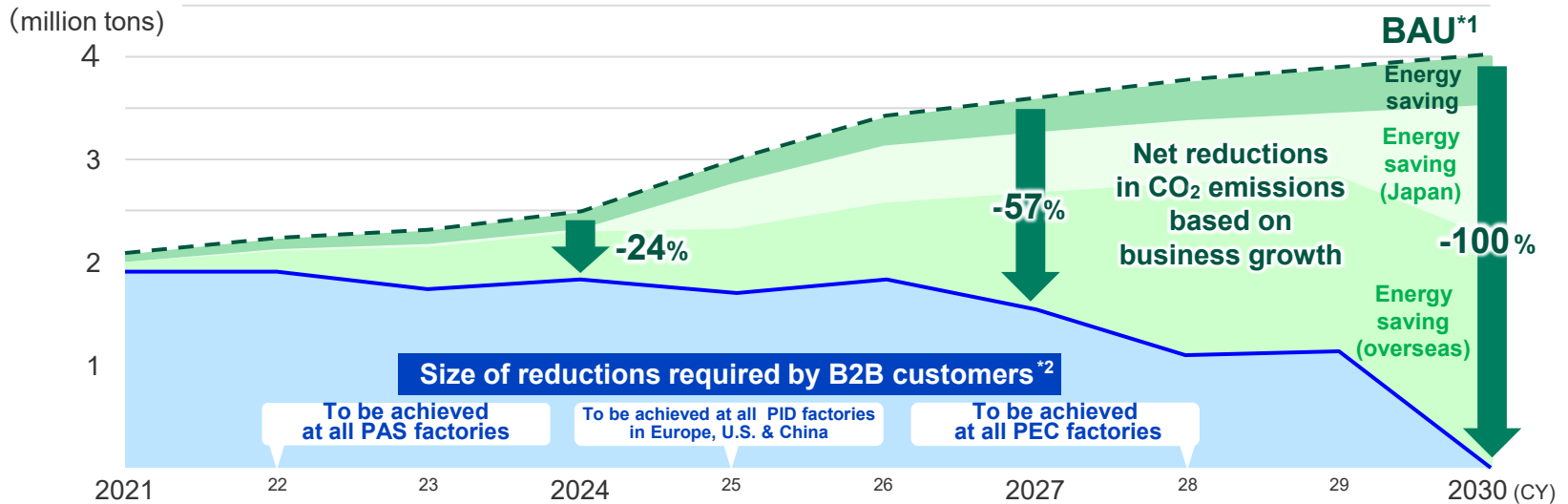
Size of contribution to society in CO₂ reductions (tons)

Contribute to CO₂ reductions by improving competitiveness mainly in "Electrification," "Energy efficiency," & "Hydrogen" areas

*Includes contributions to society in CO₂ reductions through replacement purchase of products, etc. (10.99 Mt in FY2021 & 6.3 Mt in FY2025)

Net-zero in-house emissions (Scopes 1&2)

Increase number of zero-CO₂ factories Group-wide by promoting energy saving and by introducing & purchasing renewable energies to a degree that surpasses the amount of increased emissions from business growth



9 factories

37 factories

86 factories

All factories

Increase number of zero-CO₂ factories and achieve targets at all operating companies in 2030

- In FY2022 achieve net zero at model factories and extend activities to other factories
- Achieve net zero at all factories through such initiatives as promoting the use of renewables and introducing Group-wide carbon taxes

*1 BAU: Business As Usual

*2 PAS: Panasonic Automotive Systems Co., Ltd./PID: Panasonic Industry Co., Ltd./PEC: Panasonic Energy Co., Ltd.

Size of contribution for society in reducing emissions

FY2031 Create an impact that reduces emissions by **93 Mt**

Electrification

Expand use of non-fossil fuels & green vehicles

FY21 9.7M FY25 25.1M

FY31 **70M** (tons)



Automotive batteries/chargers for green vehicles
Hot water heat pump system
Electrification of construction equipment, bicycles, etc.

Energy efficiency

Promote/optimize efficient use of energy

FY21 2.4M FY25 6.3M

FY31 **17M** (tons)



Integrated control of IAQ & A/C
LED lighting optimizing energy efficiency for individual spaces
Distributed power sources:
Energy creation-storage coordination & DERMS*

Hydrogen

Expand use of zero-carbon energies

FY21 0.2M FY25 0.6M

FY31 **6M** (tons)



Pure hydrogen fuel cell
Hydrogen “RE100” solutions
“ENE FARM”

Toward a carbon-neutral society, contribute to reducing CO₂ emissions globally in a variety of business areas

*DERMS: Distributed Energy Resource Management Systems

Initiative toward CO₂ reductions (1)



Automotive batteries for green vehicles

Size of Avoided Emissions** (tons)	FY21	FY25	FY31
	8M	21M	59M

Market size

Rapidly expand to 2,300 GWh (2030)

Competitiveness

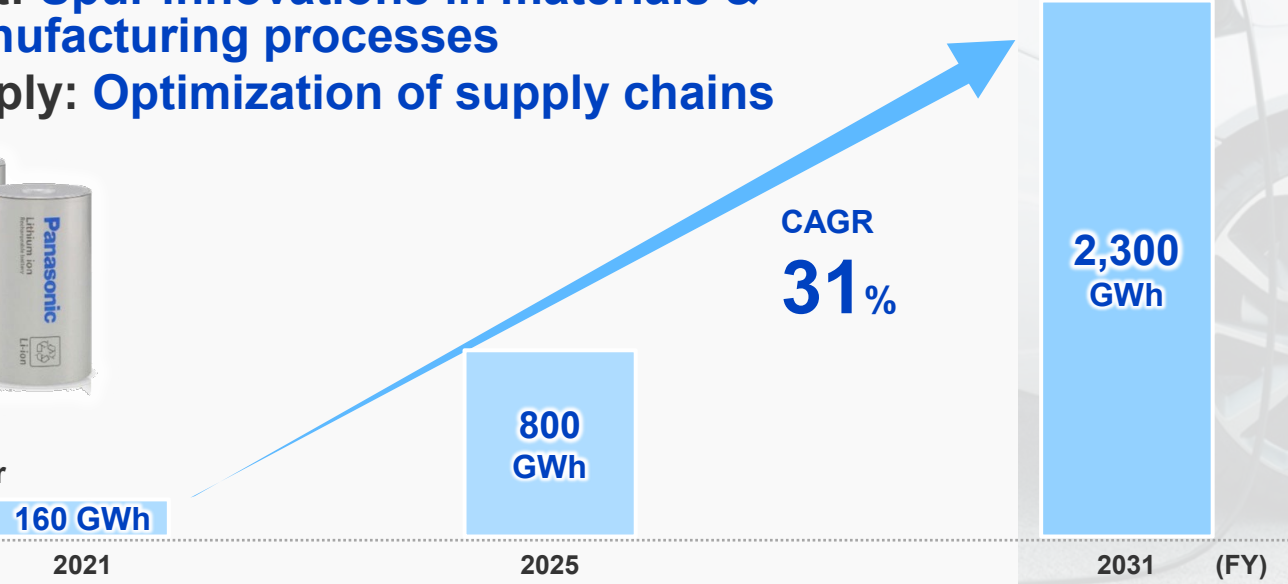
Performance: **High-capacity, highly reliable, yet low-CFP*** battery technologies

Cost: **Spur innovations in materials & manufacturing processes**

Supply: **Optimization of supply chains**



Market size
(Automotive batteries for green vehicles/GWh)



Contribute to electrification in mobility by thoroughly improving technological & operational capabilities

*CFP: Carbon Footprint
Market size: Calculated based on our assumptions

Initiative toward CO₂ reductions (2)

Electrification

Hot water heat pump system*

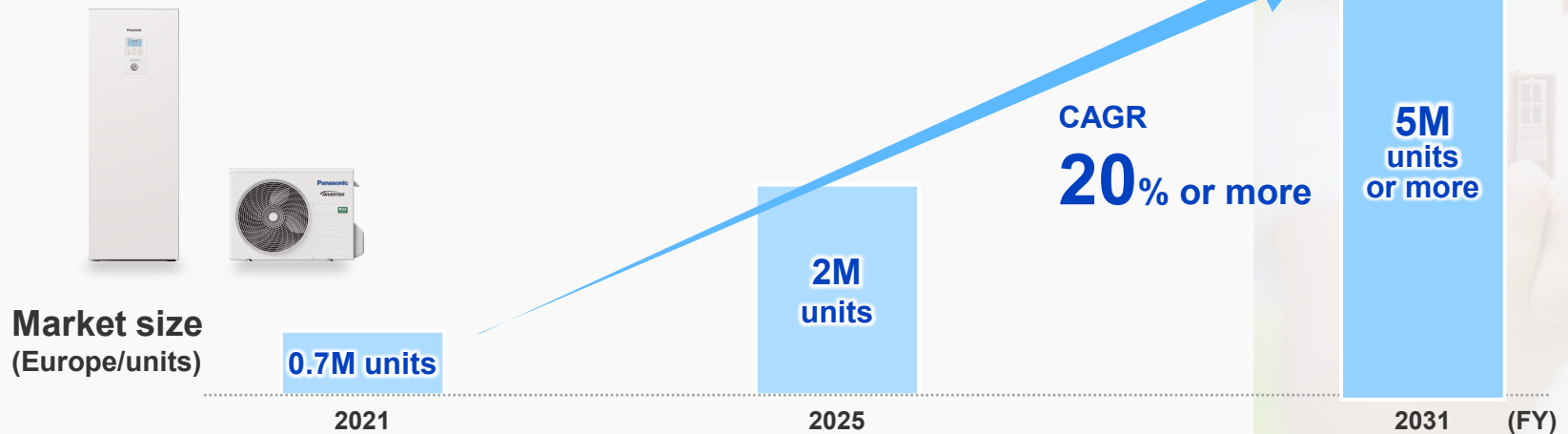
Size of Avoided Emissions** (tons)	FY21	FY25	FY31
	1.1M	3.8M	11M

Market size

Grow by eight times (From FY2021 to FY2031)
Decarbonation becoming global mainstream, especially in Europe backed by specific policies and subsidies

Competitiveness

Local production/local consumption: **Production enhancement in Czech**
Unique technology: High heating performance under -20°C outside temperature (patented)
Providing sense of security: Repair visit in emergency through IoT remote monitoring



Accelerate use of non-fossil fuels starting with addressing European heating appliance market

*Air-to-Water (A2W) heat pump
Market size: Calculated based on our assumptions

Initiative toward CO₂ reductions (3)

Energy efficiency

Integrated control of IAQ & A/C*¹ devices

Size of Avoided Emissions* (tons)	FY21	FY25	FY31
	0.2M	0.7M	4M

Market size

Steadily expand to size of ¥7T due to globally growing needs for IAQ Europe, U.S., China & Japan account for 70% due to large day & night temperature difference & wide use of airtight buildings

Competitiveness

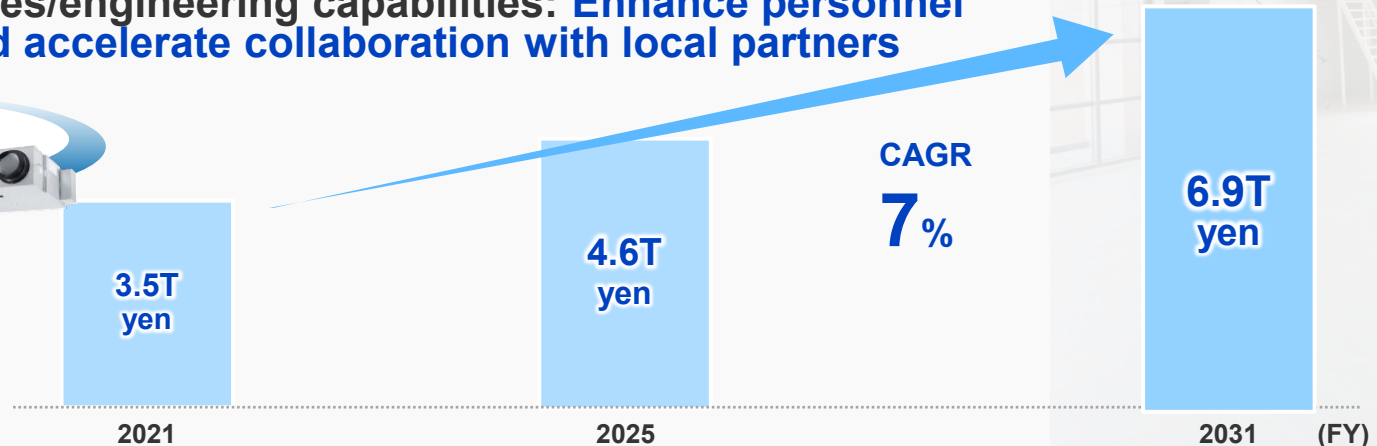
Comfort + energy saving: **Integrated operation of IAQ & A/C, including heat-exchanging and ventilation devices**

Basic IAQ technologies: **Long-nurtured unique technologies in areas of disinfection, humidity control & ventilation**

Sales/engineering capabilities: **Enhance personnel and accelerate collaboration with local partners**



Market size (IAQ/trillion yen)



Through integrated control of A/C & ventilation, optimize sensible temperature to offer comfort & achieve energy saving

*1 IAQ: Indoor Air Quality, AC: Air-Conditioning
Market size: Calculated based on our assumptions

Initiative toward CO₂ reductions (4)

Pure hydrogen fuel cell

Size of "Avoided Emissions" (tons) *Incl. "ENE FARM"	FY21	FY25	FY31
	0.2M	0.6M	6M

Market size Grow from ¥900B (2030) to ¥3.9T (2050) with tailwinds like EU's long-term strategies

Competitiveness Hydrogen-centric "RE100" plant as world's first verification site; to be provided customers in future

Evolution of "RE100" solutions: Network of consultation, engineering, and services to be developed



H2KIBOU field verification

- Apply results to various facilities
- Gain know-how through verification
- Expand business

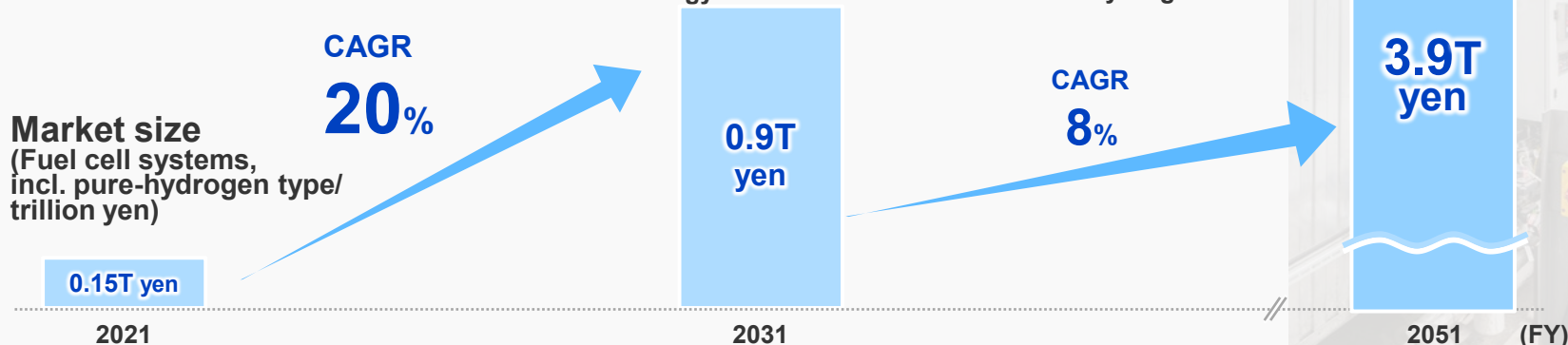


Establish green hydrogen creation technology

- Launch hydrogen creation business
- Expand value chain



Develop fuel cell business into hydrogen business



Looking forward to long-term market growth, expand hydrogen business with customers

Market size: Calculated based on our assumptions backed by reports issued by Fuji Keizai, Nikkei, etc.

Always having a common mindset with people who deeply care about the global environment



Panasonic GREEN IMPACT



Achieve a carbon-neutral society at earliest stage

Panasonic Group

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