



The New Medium-term Management Plan 「Forward 22」

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Hitachi Zosen Corporation
President and COO Sadao Mino

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I . The Long-term Vision 「Hitz 2030 Vision」 Summary

1. Long-Term Vision “Overall Business Policy”

Technology for People, the Earth, and the Future

Aim to achieve SDGs through our Company’s products, services and activities



Contribution for Realization of Sustainable and Safe & Secure Society

2. Long-Term Vision “Goal for 2030”

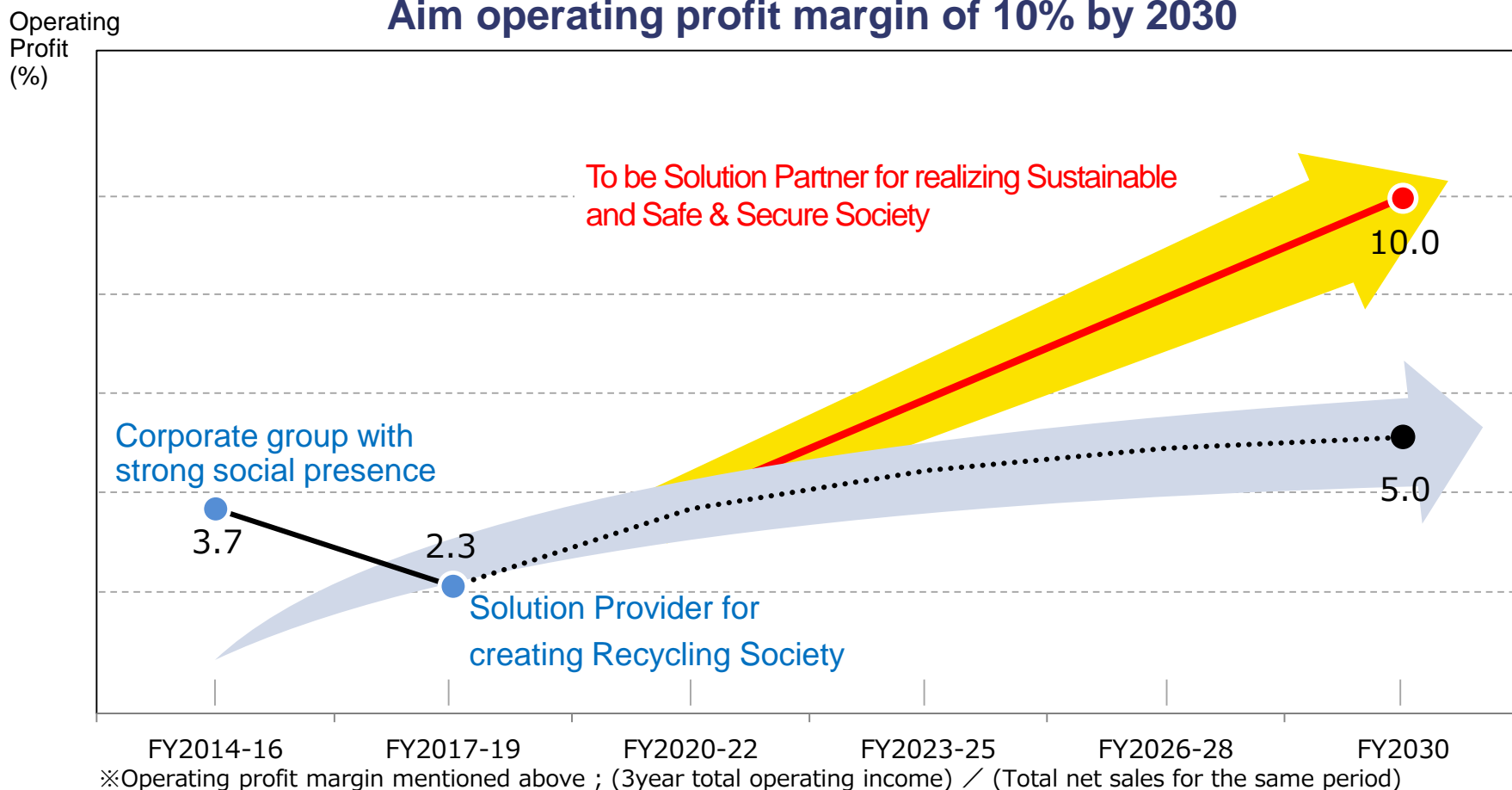
To be Solution Partner for realizing Sustainable and Safe & Secure Society

Fully dedicate ourselves to solve issues of the market and our customers

Create and develop new businesses and products by pursuing added-value for customers

Additional 5% by Growth Driver on top of **5% in base case**

Aim operating profit margin of 10% by 2030



3. Long-Term Vision “Path to improving Profitability to 10%”



Comprehensively develop EfW, Seawater Desalination, Water Treatment, Power Supply

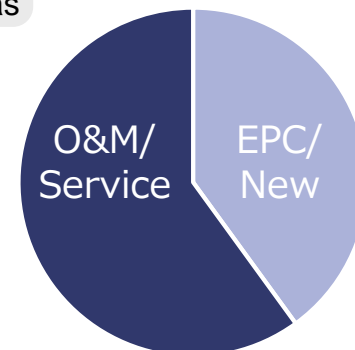
Meet new demand PPP and others

Methanation business CO2 segregation, H2 generation, Power to Gas

Sales proportion (OP margin 10%)

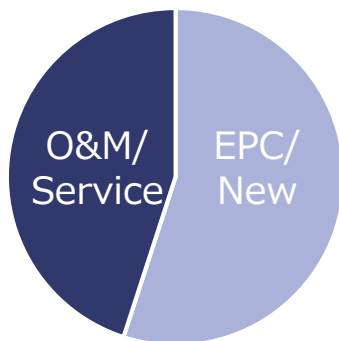
Optimize strategies for each country and region
Develop and expand successful overseas business

Expand Wind Power



Saving labor, Highly value added & Multiple purposes

Sales proportion (OP margin 3.5%)



“Slump Business Zero Mission”

Solution for food supply, disaster prevention, safety

Decommissioning of nuclear power plants (Japan, NAC)

GPS monitoring service
Autopilot : cars, agri/heavy machinery, ships

2019

2030 Fiscal year

※EPC/New: Construction and manufacturing sales. A business that delivers new goods to customers.

O&M/Service: Business associated with services such as maintenance, operation and management after delivery of plants and products, and business based on long-term contracts such as power generation.

4. Long-Term Vision “Summary”

Our Vision for 2030 :

**“To be Solution Partner for realizing
Sustainable and Safe & Secure Society”**

Supply Clean Energy and Water

**Environmental Conservation, Disaster
Resilient & Prosperous Community**

Aim to Maximize the value provided to customers

Goal ⇒ Improve Profitability “Operating income margin 10%”

Initiative Policy

- Maximize the value provided to customers by promoting the dialogue with the market and our customers and integrating IoT & AI into all businesses
- Improve profitability to promote open innovation, alliance, M&A for creating new products and businesses, in addition, selection and concentration of businesses and shift resources to growth areas
- Further improvement of profit margin by expanding O&M/Service businesses in all businesses, not just environmental businesses

II. The New Medium-term Management Plan 「Forward 22」

Concept :

As we look ahead to our group's goals under the long-term plan called "Hitz 2030 Vision," the coming 3 years under the new medium-term management plan from FY2020 to FY2022 will be a period during which we will steadily and aggressively move forward to achieve enhanced profitability with an attitude of "I'll do it! Stepping forward will change the future" with the cooperation of all the groups.

■ Targets of “Forward 22”

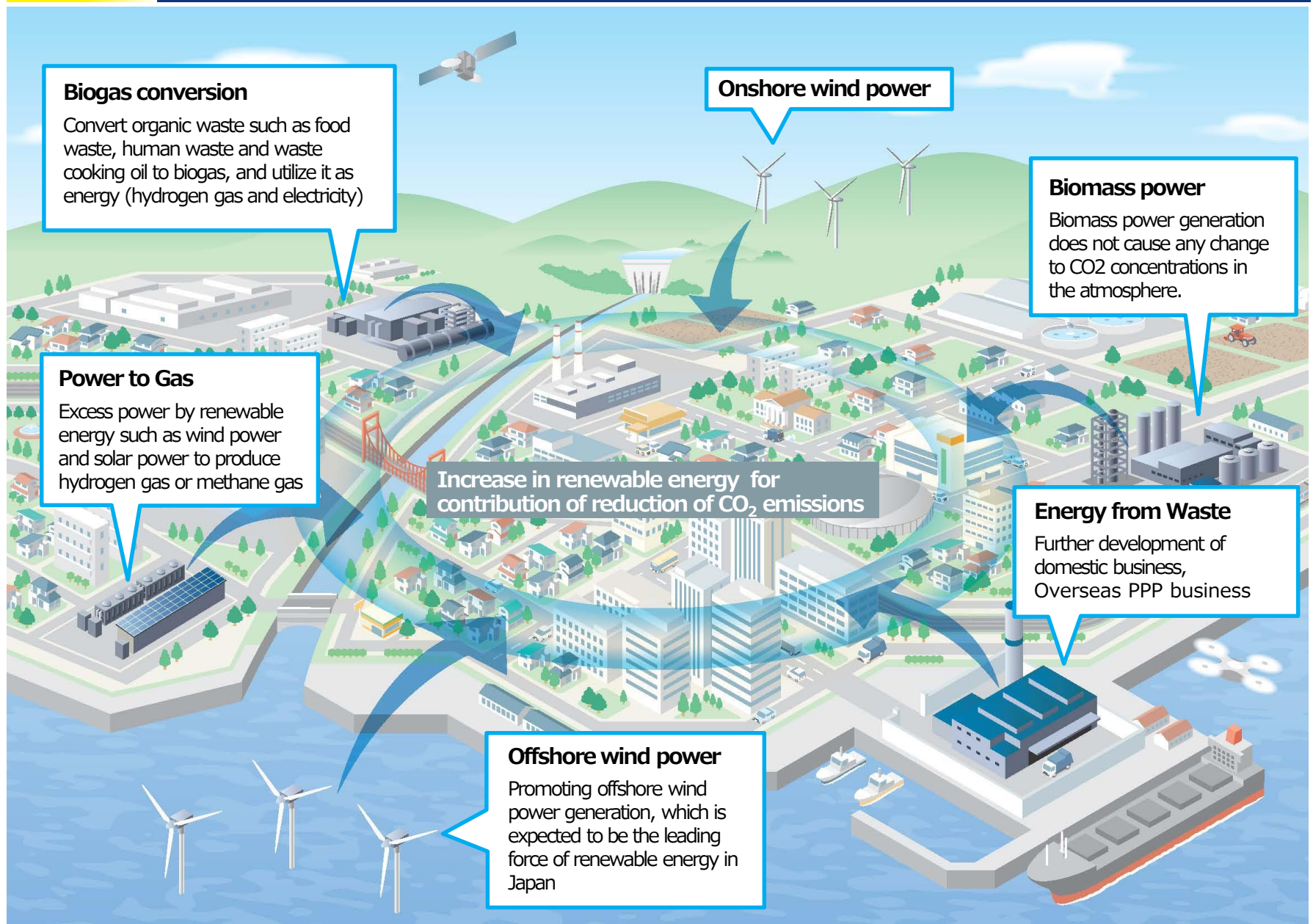
	FY2019 (Actual)	FY2020 (Forecast)	FY2021 (Plan)	FY2022 (Plan)	Target for 2030
Orders intakes	JPY454.1 billion	JPY410.0 billion	Order intakes & Net sales at the JPY400 billion level		Operating income ratio 10%
Net sales	JPY402.4 billion	JPY400.0 billion			
Operating income(ratio)	JPY13.8 billion (3.5%)	JPY11.0 billion (2.8%)	Aim to achieve 5% of opera- ting income ratio for FY2022		ROE 10%

■ Basic Policies of “Forward 22”

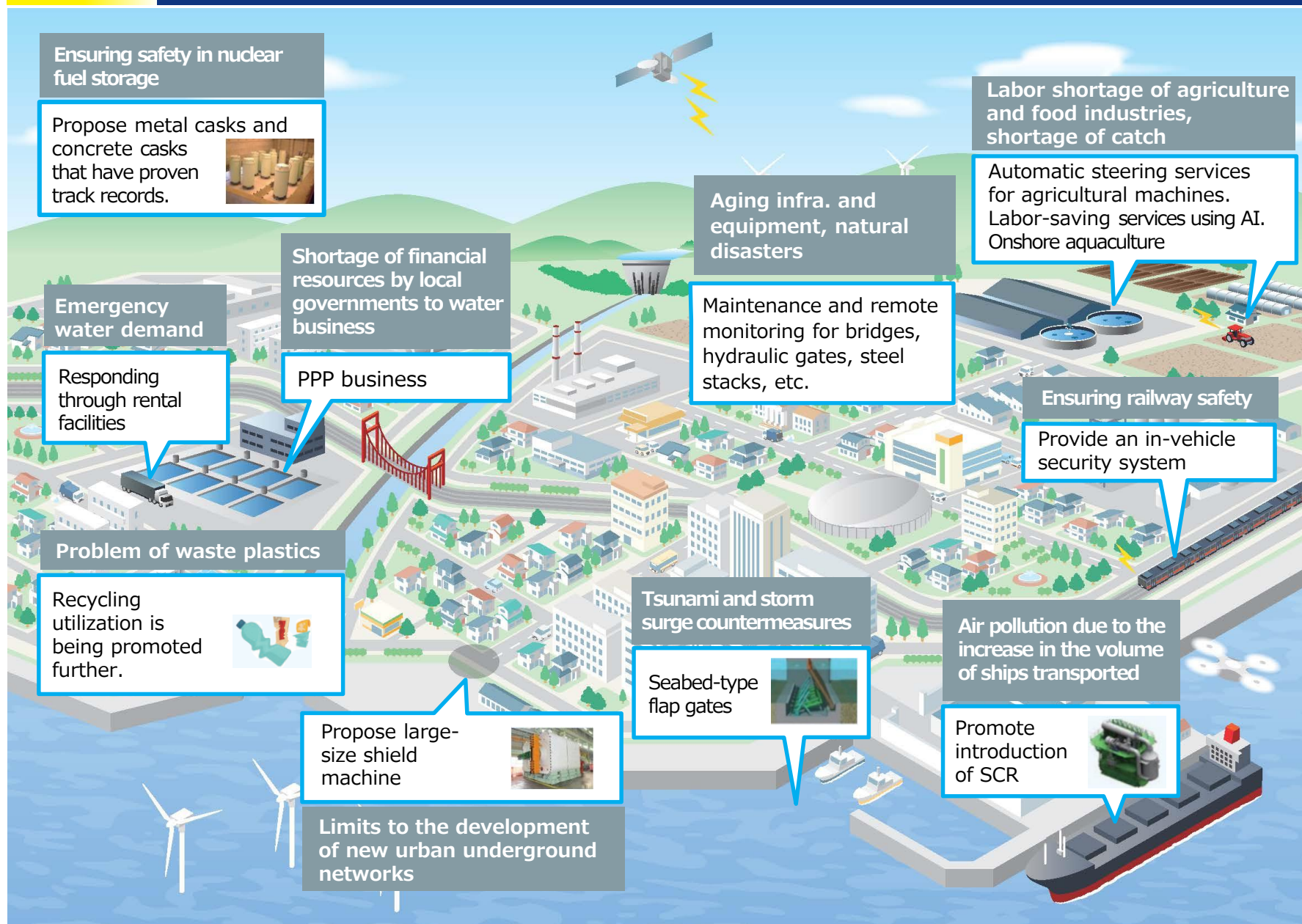
- Contribute to the realization of sustainable and safe & secure society through overall corporate activities
- Aim to be corporate group capable of sustainable growth by strengthening profitability

Basic policies	Policy initiatives
• Increase the added value of products and services	①Cutting-edge technologies, ②Shift business positioning, Close dialogue with customers and markets, ③Group's comprehensive strengths
• Promote business selection and concentration of businesses and shift resources to growth areas	①Utilizing Hitz Goal Achievement Monitoring System, ②Further promote portfolio management
• Promoting work style reforms by improving operational efficiency and productivity	①Improve operational efficiency by reforming the group management system, ②Review of manufacturing businesses, ③Develop human resources & work style reform

2. Realization of Sustainable Society① “Provision of clean energy”



2. Realization of Sustainable Society② “Clean water, environmental conservation, and building a disaster resilient and prosperous community”



2. Realization of Sustainable Society③ "Hitz group's Goal to Contribution to CO2 Reduction"

Contributing to CO₂ reduction through our customers' business activities and their operations conducted the clean energy facilities constructed and technically supported by Hitz group such as Energy from Waste, Biomass Power Generation, Wind Power Generation and Solar Power Generation

Present status: Working facilities at the end of FY2019

Targeting status: Working facilities at the end of FY2022

Long term target: Working facilities at the end of FY2030

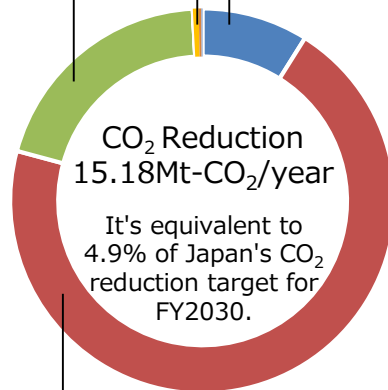
Small size EfW: 1kt-CO₂/year
Biomass Power: 74kt-CO₂/year
Wind Power: 32kt-CO₂/year
The others(Solar Power)
:18kt-CO₂/year

Small size EfW: 5kt-CO₂/year
Biomass Power: 343kt-CO₂/year
Wind Power: 33kt-CO₂/year
The others(Solar Power)
:18kt-CO₂/year

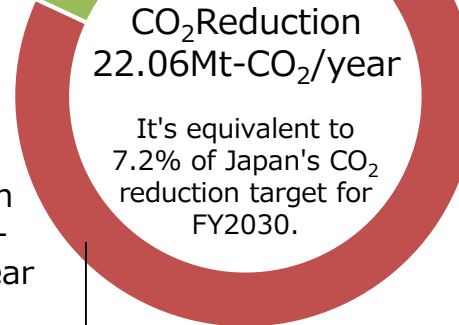
Wind Power
Biomass Power
The others
EfW in JPN
EfW in Europe and etc.

EfW in Europe and etc.
:3,035kt-CO₂/year
EfW in JPN
:1,356kt-CO₂/year

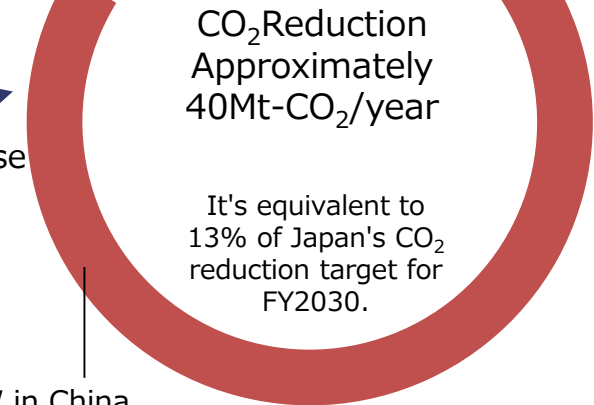
EfW in Europe and etc.
:3,590kt-CO₂/year
EfW in JPN
:1,440kt-CO₂/year



CO₂ Reduction +6.88Mt-CO₂/year



Increase



EfW in China, India and south-eastern Asia(including licensee)

The total CO₂ Reduction from FY2020 to 2030

Approximately **320Mt-CO₂**

EfW in China(including licensee)
:10,663kt-CO₂/year

EfW in China(including licensee)
:16,630kt-CO₂/year

※ EfW: Abbreviation of Energy from Waste.

※ These estimations are based on the index shown by Ministry of the Environment of Japan & Agency for Natural Resources Energy of Japan even though EU's index is also adopted for the estimations in "EfW in Europe and etc.". The estimated values include the CO₂ reduction in working facilities (including prospective facilities in this term) but exclude suspended or abolished facilities, and then heat utilizations in the facilities are also excluded. Targets for FY2023 and thereafter are calculated proportionally based on the results up to FY2019. Based on the draft by Ministry of the Environment of Japan, the targeting reduction value of Japan's originated CO₂ emission is calculated as approximately 308Mt-CO₂ per year on the basis of the actual result of FY2013 and the guideline of FY2030.

3. "Forward 22" Specific Measures① "Increase the Added Value of Products and Services by Utilization of Cutting-edge Technologies"

Promote IoT & AI business strategies ⇒ Accelerate the integration of IoT & AI into products and services and the improvement of productivity

Growth of IoT and AI businesses in core business domains and new-generation products and services

- Energy from waste plant
- Wind Power
- Onshore aquaculture
- Heat Exchanger
- Nondestructive inspection of end-of-pipe welds
- Water treatment facilities
- Shield machine
- Bridges/water gates
- GPS Positioning

New ERP system SAP's business innovation

Smart Factory IoT innovation at production sites by robot AI & Production systems

Solving Customer's Problems Labor saving, High value-added, multi-purpose develop

Electronic Control BU

Develop IoT equipment and know-how

Hitz Advanced Information Technology Center

- Life assessment
- Automated driving
- Abnormal diagnosis
- Decision making support
- Predictive maintenance

Technical Research Institute

AI technology development

Integrating IoT & AI into products and services
In-house Support

Information Infrastructure [Network/Cloud] IoT Data Collection, Accumulation and Analysis Platform

3. "Forward 22" Specific Measures②

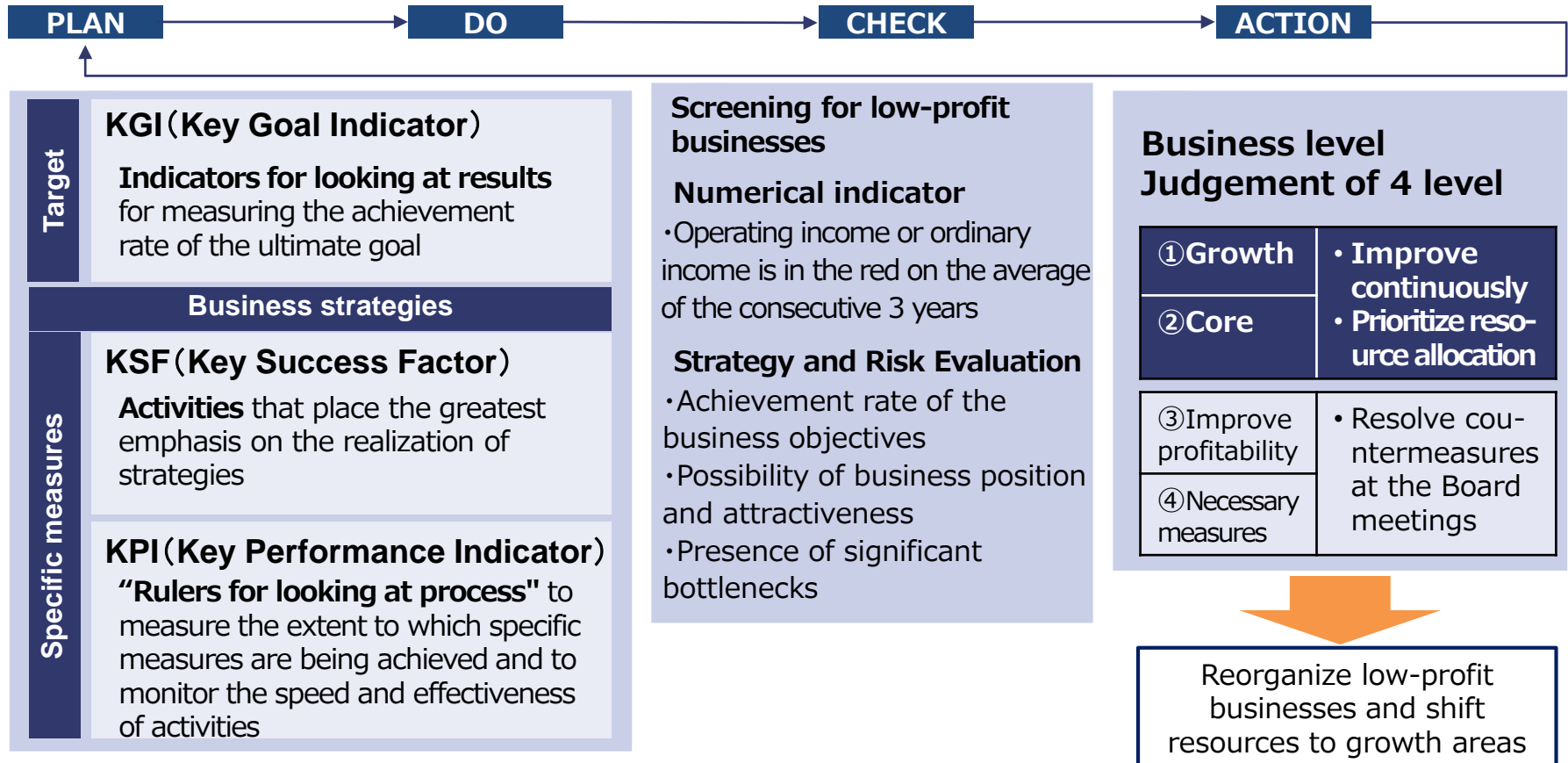
"Goal Achievement Monitoring System and Portfolio Management"

"Hitz Goal Achievement Monitoring System"

A system for "Managing all employees" to realize strengthening profitability by increase in high-quality order intakes

Enhance the "Check" and "Action" functions of the PDCA cycles in order to increase the achievement rate of management and business plans. We will systematically manage KGI·KSF/KPIs as indicators to resolve issues.

A system of business evaluation by portfolio management and its countermeasures



3. "Forward 22" Specific Measures③ "Develop Human Resources and Work Style Reform"

Promote the personnel strategy by aiming to achieve the KPIs set for each priority measure. Promotion of diversity management and work style reform



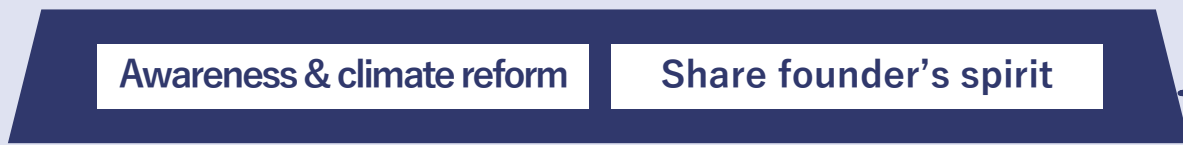
Utilization of diverse human resources



- Career Support
- Develop global & executive human resources



Improving staff satisfaction



Our founder, E.H. Hunter visited Japan from the UK and established our company in 1881 with the challenge spirit, "I accomplish my course!". 2020 marks the 140th year Hitz has been promoting this spirit with its executives and employees.

Ⅲ. Supplementary Information

- 1. Review of the Previous Medium-term Management Plan
「Change & Growth」**
- 2. Realization of Sustainable Society
“SDGs / Initiatives for Social Issues”**
- 3. Specific Example of IoT & AI Business Strategies**

1. Review of 「Change & Growth」 ①

“Achievement of company-wide Numerical Plan”

- (1) Change & Growth was the first step toward realizing our long-term vision of "Hitz 2030 Vision" and the 3-year period of building the foundation for achieving results, and we have worked to achieve our goals. As a result, profits fell significantly short of the plan.
- (2) The worsening performance of HZI is the biggest factor, but the slump in earnings of our manufacturing business is also a major factor.
- (3) Delay in capital reinforcement ~ Increase in interest-bearing debt due to financial support to HZI, etc.
- (4) Financial (impairment) risks (SR99 issues: 6.6 B yen, JMU shares: 9.1 B yen recorded in FY2019)

	「Change & Growth」 Plan				Actual				Achievement ratio
	FY2017	FY2018	FY2019	3FY total	FY2017	FY2018	FY2019	3FY total	
Orders Intake	4,000	4,300	4,600	12,900	4,004	4,550	4,541	13,096	102%
Net sales	3,600	4,000	4,300	11,900	3,764	3,781	4,024	11,570	97%
Operating income (ratio)	125 (3.5%)	165 (4.1%)	205 (4.8%)	495 (4.2%)	59 (1.6%)	73 (1.9%)	138 (3.5%)	271 (2.3%)	55%
Ordinary income (ratio)	100 (2.8%)	140 (3.5%)	180 (4.2%)	420 (3.5%)	33 (0.9%)	67 (1.8%)	94 (2.3%)	195 (1.7%)	46%
Net Income	65	80	100	245	21	54	21	98	40%
Interest-bearing debt	1,100	1,050	1,000	—	1,072	1,263	996	—	—
Equity	Target: JPY130 B or more by the end of FY2019				1,169	1,195	1,180	—	—
Equity ratio	30.0%	30.5%	31.0%	—	29.8%	27.8%	28.8%	—	—

1. Review of 「Change & Growth」 ②

“Achievement of Segment Numerical Plan”

(1) Environmental Systems and Industrial Plants:

Significant impact from losses at overseas subsidiaries (HZI, HZIND, and Osmoflo)

(2) Machinery: Significant losses in marine engines and process equipment. Many subsidiaries (H&F, NAC, and IMEX) performed well.

(Unit: 100 million yen)

	Segment	「Change & Growth」 Plan				Actual				Achievement ratio
		FY2017	FY2018	FY2019	3FY total	FY2017	FY2018	FY2019	3FY total	
Orders intake	Environment & Plant	2,550	2,750	2,900	8,200	2,572	3,147	2,894	8,613	105%
	Machinery	1,000	1,050	1,150	3,200	984	1,007	1,143	3,134	98%
	Infra.	350	380	430	1,160	314	276	397	987	85%
	Others	100	120	120	340	134	120	107	361	106%
	total	4,000	4,300	4,600	12,900	4,004	4,550	4,541	13,096	102%
Net sales	Environment & Plant	2,150	2,500	2,730	7,380	2,318	2,283	2,543	7,144	97%
	Machinery	1,000	1,050	1,100	3,150	1,006	1,066	1,032	3,104	99%
	Infra.	300	330	350	980	282	318	335	935	95%
	Others	150	120	120	390	158	114	114	386	99%
	total	3,600	4,000	4,300	11,900	3,764	3,781	4,024	11,570	97%
Operating income	Environment & Plant	85	110	135	330	13	56	158	227	69%
	Machinery	25	35	45	105	25	-3	-12	10	10%
	Infra.	10	15	20	45	14	13	-16	11	24%
	Others	5	5	5	15	7	7	8	22	147%
	total	125	165	205	495	59	73	138	271	55%

1. Review of 「Change & Growth」 ③ “Progress status of Basic Strategies” Hitachi Zosen

Evaluation : Progress (A certain results:○ / Challenges remain:△)

Basic Strategy (1) Restructuring of Business Foundation and Improvement of Productivity	① Business areas expansion ⇒ Expansion of service business utilizing manufacturing	○
	② ICT utilization ⇒ Operation of S A P and A. I /TEC	○
	③ To strengthen risk management sys.	△
	④ Promotion of measures for high profitability	△
	⑤ Strengthening financial condition and expanding investment capacity for growth	△
Basic Strategy (2) Maximizing the Group's Comprehensive Strengths	① Realize synergies by forming business clusters	△
	② Focus on consolidated business management	△
	③ Human resources development by rotation	△
Basic Strategy (3) Promoting Portfolio Management (PPM)	① Clarification of business base positioning by PPM ⇒ Closure of overseas bases, NY, London and Seoul, Withdrawal from Cumberland and Nagaoka Hitachi Zosen Equipment (Dalian)	△
	② Prioritized allocation of management resources to growing businesses and new businesses	△
	③ Consider revitalization of sluggish products	△

Take on the challenge of new initiatives based on the basic strategies of "Change & Growth"

「Change & Growth」 Review

1. Achievement of numerical targets

- Low level of achievement of profit items
- Delay in strengthening financial position

2. Progress of Basic Strategies

Few results have been achieved.

- (1) Business areas expansion, Realization and promotion of measures for high profitability
- (2) Maximizing the Group's Comprehensive Strengths
- (3) Promotion of Portfolio Management (PPM)

3. Long-Term Vision "Hitz 2030 Vision"

Probability is shaken regarding net sales of JPY1 trillion and an operating income margin of 10% or more.

Points of New Management Plan

- Introduction of Goal Achievement Monitoring System and thorough PDCA
- Implementation of structural reforms
- Thorough risk and cost management

- To refine business strategies, accelerate the use of advanced technology
- Strengthening Business Groups Activities
- Introduction of a systematic business evaluation system for further promotion

- Deliberation and implementation of specific measures for achieving the long-term vision
- Out of the management targets, achieving an operating income margin of 10% is positioned as our top priority.

Technology for People, the Earth, and the Future

Make every effort to achieve SDGs goals through our products and activities

Elimination of water shortages, preventing environmental degradation from industrial development

- Desalination plant
- Water, sewage, and industrial wastewater treatment systems
- Response to plastic waste problem



Resolving food safety, food loss, and other food issues

- Food manufacturing monitoring system
- Foreign substance separation equipment for food
- Water treatment of land aquaculture system



Building a disaster resilient and prosperous community ~Protecting lives from natural disasters~

- Flap gate, GPS ocean monitoring system
- Water gates and offshore structures



Supplying renewable energy, reducing CO2 emissions

- Energy-from-Waste plant
- Methane fermentation system
- Wind power
- PPS



Contributing to SDGs through overall corporate activities based on group philosophy

Sustainability effort other than product and business

- Promote diversity management
- Promote work style reforms
- Promote environmental education



Promoting as a necessary concept for all activities

2. Realization of Sustainable Society② “Initiatives for SDGs and Social Issues”

	Sub-segmentation	Challenges	Domestic/ overseas	Initiatives
Provision of clean energy and water	Energy	Increase emissions of CO2 by using fossil fuels (Increase in using renewable energy)	Domestic/ Overseas	Further expand the energy business, including biomass.
			Overseas	Expand the business of effectively utilizing organic waste, such as garbage, pruning branches, paper, urine, sewage tank sludge, and waste edible oil, by converting biogas.
			Domestic	Take on the challenge of overseas EfW's PPP business.
	Water	Shortage of financial resources by local governments	Domestic	Promoting offshore wind power generation, which is expected to be the main source of renewable energy in Japan
			Overseas	Aggressively enter the PPP business in response to requests for public-private partnerships from public institutions.
	Water shortage	Overseas	Shift from equipment sales to water sales business. Responding to emergency water demand through rental facilities	

※PPP: Abbreviation of Public Private Partnership (aiming to improve efficiencies and improve public services by utilizing private capital and know-how of the private sector)

2. Realization of Sustainable Society② “Initiatives for SDGs and Social Issues”

	Sub-segmentation	Challenges	Domestic/ overseas	Initiatives
Environmental conservation, and building a disaster resilient and prosperous community	Environmental conservation	Waste disposal	Domestic/ Overseas	Further expand our business domains and effectively utilize them as renewable energy (electricity and biogas).
		Problem of waste plastics	Domestic	The need and urgency to dispose of waste plastics in Japan without exporting them is increasing, and recycling utilization is being promoted further.
		Air pollution due to the increase in the volume of ships transported	Domestic/ Overseas	We widely promote the introduction of SCR (NOx removal) as the countermeasure to environmental regulation (Tier3).
		Ensuring safety in nuclear fuel storage	Domestic/ Overseas	Propose metal casks and concrete casks in Japan and overseas that have proven track records in dry storage of irradiated nuclear fuels
	Building a disaster resilient community	Tsunami and storm surge countermeasures	Domestic	Promote the introduction of seabed-type flap gates (movable flap gate type breakwater) to disaster-risk areas.
		Aging infrastructure and equipment, natural disasters	Domestic/ Overseas	Expansion of business domains to maintenance and remote monitoring for bridges, water gates, and smokestacks. Develop our own A/S (pipe end inspection) to inspect the soundness of plant facilities.
	Building a prosperous community	Limits to the development of new urban underground networks	Domestic/ Overseas	Underground nets have developed in cities, and new excavation is becoming difficult. Aggressively propose specialized shield machine that fit the space available for excavation to overcome these limitations.
		Labor shortage of agriculture and food industries, shortage of catch	Domestic	By utilizing satellite positioning data, provision of automatic steering services for agricultural machines that contribute to reducing the burden of agricultural work.
				We have provided recording devices for food production lines as a means of visualizing food safety and prevention of contamination, and develop further labor-saving services such as product identification using AI.
				Shortage of fishing is becoming the norm, and there is a tendency for catches to be insufficient. Sea-level aquaculture has problems such as shortage of appropriate locations and damage to ocean pollution. Promote onshore aquaculture to provide a safe, secure, and stable supply for resolutions.
		Ensuring railway Safety	Domestic	In addition to our extensive experience in operating status recording equipment, we are developing an in-vehicle security system utilizing in-vehicle camera.

3. Specific Example of IoT & AI Business Strategies

Growth of IoT and AI businesses in core business domains and new-generation products and services

Energy from waste plant



- Realization of labor saving and economic operation through automatic and stable operation
- Optimum operation support through remote monitoring

Water treatment facilities



Onshore aquaculture



- Optimum operation support through remote monitoring

Nondestructive inspection of end-of-pipe welds



Heat exchanger

- Automatic determination of defects with AI, realization of labor saving

Bridges/Water gates



- Bridges: Renovations, repairs, and maintenance business utilizing CIM (Construction Information Modeling/Management)
- Water gates: Promotion of differentiation by popularization of Diagnostic and Status Monitoring System ("Shin-emon")

Wind Power



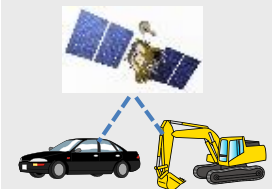
- Selecting the right place of business by big data such as wind conditions and landforms
- Realization of efficient and economic maintenance by the accumulation of operating data

Shield machine



- Optimum operation support through remote monitoring

GPS positioning



- Automatic operation support through remote monitoring



Technology for People, the Earth, and the Future

Hitachi Zosen creates links between mother nature and our future

Cautionary Statement

Forward-looking statements are based on information currently available to Hitachi Zosen Corporation. Therefore those forward-looking statements include unknown risks and uncertainties. Accordingly, you should note that the actual results could differ materially from those forward-looking statements. Risks and uncertainties that could influence the ultimate outcome include, but are not limited to, the economic conditions surrounding Hitachi Zosen Corporation and/or exchange rate fluctuation.



Hitachi Zosen Corporation

<http://www.hitachizosen.co.jp/english/>