May 10, 2024

Financial Results – FY24/3

(Matters related to Business Plan and Growth Potential)

Microwave Chemical

Make Wave,
Make World.

世界が知らない世界をつくれ

Agenda

1. Executive Summary
2. Financial Results - FY24/3
3. Growth Strategy - FY25/3
4. Financial Forecasts - FY25/3
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Executive Summary

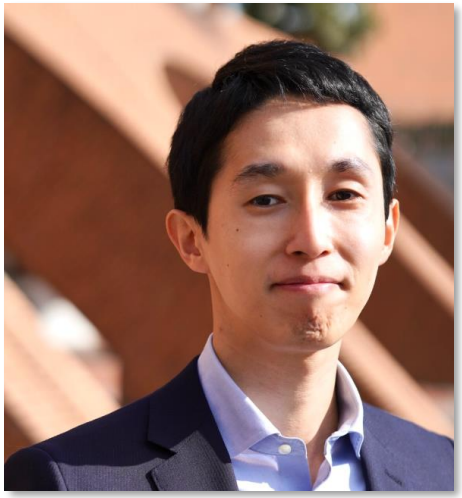
FY24/3 Financial Results	• Sales of JPY1,863MM (+53% YoY), operating profit of JPY134MM (+125% YoY), and ordinary profit surpassed the forecasts. – Achieved significant growth in Phase 2 projects in the green business area, including the installation of a demonstration facility for carbon fiber production at Mitsui Chemicals' work. – Standardization of chemical recycling and metal smelting processes and horizontal development of multiple projects are ongoing. • KPIs were generally in line with our plans. – Number of new contracts: Acquired 27 contracts compared with the target of 28 contracts. – Total number of contracts: 64 contracts were executed compared the target of 65 contracts. • Decided to dissolve affiliated company T M T Co.,Ltd., and recorded a cash outflow of JPY500MM and an extraordinary loss of c.JPY1.0Bn, resulting in a net loss after taxes that fell short of the net profit forecast(1), but there will be no immediate cash shortage issues.
FY25/3 Growth Strategy	• Among green business areas, selectively invest in R&D projects which will lead to social implementation, and increase the probability and speed of technology standardization and acquisition of large-scale revenue. – Chemical recycling: Developing element technologies and demonstration equipment through multiple joint development projects. – Metal smelting process: Completed standard bench equipment capable of smelting multiple types of ore. • In terms of new contract acquisition, we select and focus on high quality projects that will lead to social implementation.
FY25/3 Forecasts	• We plan sales of JPY1,710MM ((8)% YoY) and operating profit of JPY48MM((64)% YoY). – There will be no projects in Phase 3 (actual equipment installation) in FY25/3, while we continue development in multiple Phase 2 projects moving toward Phase 3. – Although sales and operating profit will decrease from FY24/3, we plan to achieve operating surplus by controlling costs based on the platform business model.

(1) Based on FY24/3 forecasts announced on May 12, 2023.

Presenters

Iwao Yoshino, President and CEO

- After working at Mitsui & Co., Ltd. (Chemicals Division), he engaged in a startup company and a consulting firm in the United States.
- Graduated from Keio University Faculty of Law in 1990, graduated from UC Berkeley MBA in 2002, and was a Hitachi Fellow in Management of Technology (MOT).



Nao Ikemoto, Director of Finance & Investor Relation

- After working at M&A Advisory Group of Morgan Stanley, he engaged in management of a biotechnology startup and joined MWCC in 2023.
- Graduated from the School of Engineering at the University of Tokyo in 2015.

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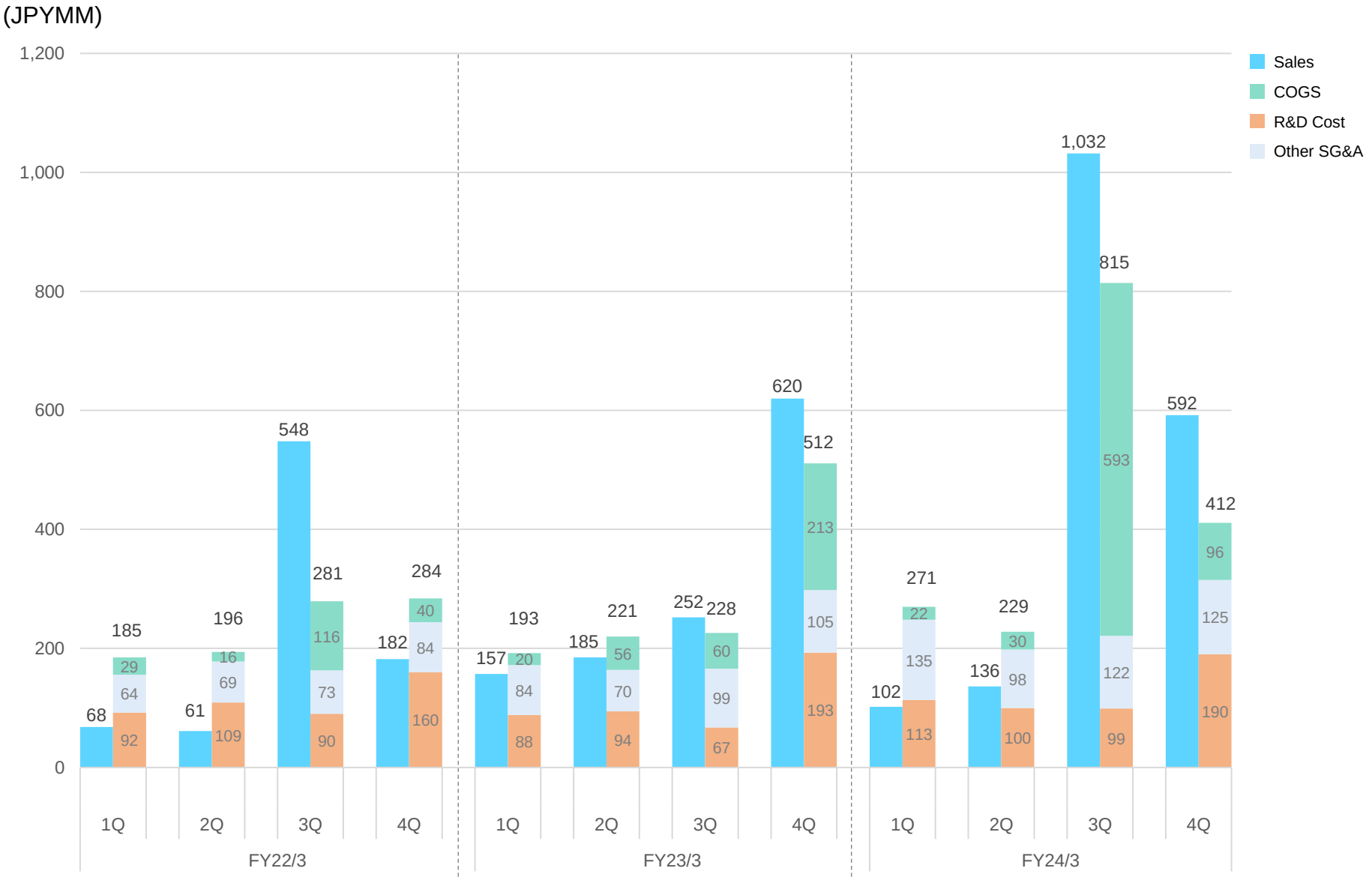
FY24/3 Income Statements Summary

- In addition to revenue growth, COGS and expenses were reduced compared to the forecasts by improving the personnel productivity through streamlining/standardization of operations. Revenue and ordinary profit surpassed the initial plan.
- On the other hand, the decision to dissolve affiliated company T M T Co.,Ltd. resulted in an extraordinary loss of c.JPY1.0Bn, and net loss after taxes fell short of the plan(1).

(JPYMM)	FY23/3 Actual	FY24/3 Actual	YoY comparison		Comparison with FY24/3 Forecasts: Forecasts as of May 2023(1)	Difference	Forecasts as of Mar. 2024(2)	Difference
Net sales	1,215	1,863	+647	53.3%	1,846	+16	1,846	+16
Phase 1(3)	567	565	(2)	(0.4)%	559	+6	559	+6
Phase 2	593	1,274	+680	114.5%	1,284	(10)	1,284	(10)
Phase 3	35	–	(35)	(100)%	–	–	–	–
Phase 4	–	–	–	–	–	–	–	–
Other	19	24	+4	25.5%	3	+21	3	+21
Operating profit	59	134	+74	124.6%	40	+93	40	+93
Ordinary profit	26	130	+104	401.9%	33	+97	33	+97
Profit after tax	75	(944)	(1,020)	–	89	(1,034)	(965)	+21

(1) Based on FY24/3 forecasts announced on May 12, 2023.
(2) Based on FY24/3 forecasts announced on March 18, 2024.
(3) Phase 1 is the R&D phase, Phase 2 is the demonstration development phase, Phase 3 is the actual equipment introduction (equipment sales) phase, and Phase 4 is the manufacturing support phase.

Quarterly Sales and Costs (FY22/3Q1-FY24/3Q4)



Balance Sheet Summary

- The decision to dissolve affiliated company T M T Co.,Ltd. resulted in a cash outflow of JPY500MM, leaving cash and deposits of JPY529MM, but there will be no immediate cash flow problems at current stage.

FY23/3 Balance Sheet

(JPYMM)

Cash and deposits	1,246	Accounts payable	65
Accounts receivable	336	Current portion of LTD	200
Work on process	34	Contract liability	407
Others	288	Others	172
Current assets	1,905	Current liabilities	845
Tangible fixed assets	650	Long-term debt	210
		Lease obligation	315
Intangible assets	10	Fixed liabilities	525
Shares of affiliates	319	Capital fund, etc.	3,303
Others	190	Earned surplus	(1,597)
Investments and other assets	510	Net worth	1,706
Total	**3,077**	**Total debt and net assets**	**3,077**

FY24/3 Balance Sheet

(JPYMM)

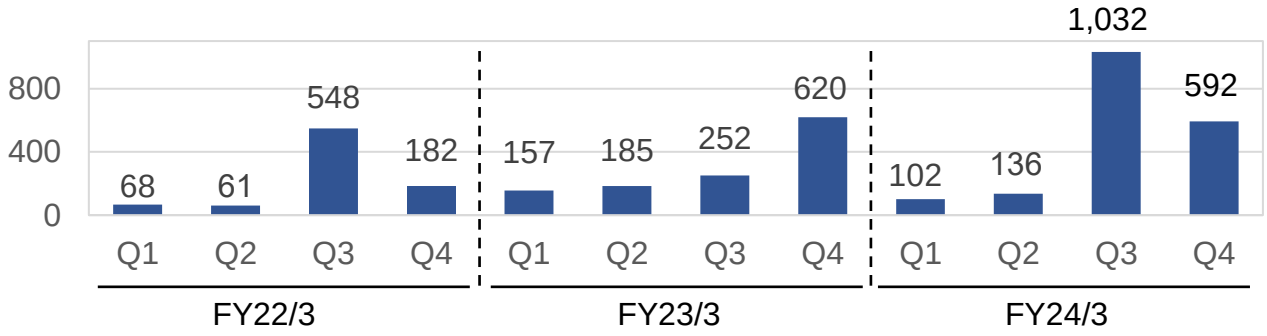
Cash and deposits	529	Accounts payable	4
Accounts receivable	304	Current portion of LTD	7
Work on process	12	Contract liability	287
Others	146	Others	241
Current assets	993	Current liabilities	541
Tangible fixed assets	816	Long-term debt	202
		Lease obligation	295
Intangible assets	6	Fixed liabilities	497
Shares of affiliates	0	Capital fund, etc.	3,398
Others	77	Earned surplus	(2,542)
Investments and other assets	77	Net worth	856
Total	**1,894**	**Total debt and net assets**	**1,894**

Seasonal Fluctuations / Revenue Recognition

Seasonal Fluctuations

- Our major clients, chemical companies, finalizes budgets by March, just before the start of the new fiscal year, so projects with MWCC often begin in the first or second quarter. As a result, the completion of the contracts, in which our company's revenues are recorded, tends to be biased toward the second half of the year. There is also an impact from the completion timing of large-scale projects.
- In addition, as the majority of SG&A expenses are fixed costs, the proportion of profits also tends to be weighted toward the second half of the year, which would affect investors' decisions.

Quarterly Net Sales (JPYMM)



Revenue Recognition

The following is a description of the main performance obligations in the Company's main business related to revenues arising from contracts with clients and the usual time at which such performance obligations are met. Payment is made generally within one month after obligation is fulfilled and dose not include financial component.

(1) Joint development agreement (JDA)

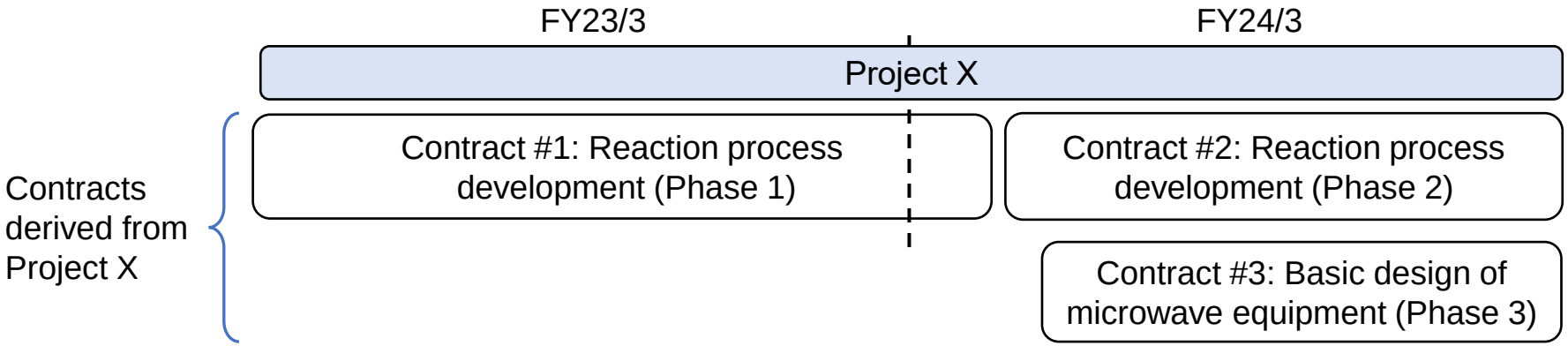
The Company submits reports, samples, etc. stipulated in the JDA and receives payment. Under such agreements, revenue is booked upon acceptance of the report, samples, etc. by the client.

(2) License agreement

Under license agreements, the Company licenses its intellectual property to clients and receives upfront payments and running royalties as compensation. The upfront payment is booked as revenue at the time the intellectual property is licensed. Running royalties are based on the sales revenue of the licensee company, and revenue is recognized when the product is sold by the licensee company.

KPI (Key Performance Indicator)

- Important KPIs for our business are **(1) number of new contracts**, **(2) total number of contracts**, and **(3) sales by phase.**
  - Contracts are executed with clients based on our solutions and service per phase.
  - Multiple contracts would be executed with one project as indicated below.
- (3) Sales by phase shows progress of the contracts by sales in each phase (1～4).
- Contracts are basis of our sales. We disclose number of contracts which are expected to be completed and book sales within this FY.



(Reference)

- **Number of projects**: Project consists of a team with tasks to provide “total solution” to clients. It is also referred as a pipeline and categorized in two types:
  - Revenue-related projects, where we provide solutions to clients
  - Revenue-unrelated projects, where we invest our own resources for internal R&D

(Ref) Grant Information

- Our development is accelerated by the following grant projects, focusing on green business, including chemical recycling.

Institution	Project	Theme	Grant/ Total Project Cost (JPY Thou)
Osaka Pref.	• Carbon Neutral Technology Development and Demonstration Project in FY23/3	• Development and demonstration of a small distributed chemical recycling system based on microwave heating technology	• 23,466/ 35,200
NEDO	• Program for Promotion of R&D and Social Implementation of Energy-saving Technologies toward Realization of a Decarbonized Society / Demonstration and Development	• Demonstration and development of a new chemical recycling method for plastics using a microwave process	• 30,145/ 60,290
NEDO	• Program for Promotion of R&D and Social Implementation of Energy-saving Technologies toward Realization of a Decarbonized Society/Priority Subjects Promotion Scheme (Phase I)	• Development of Innovative Naphtha Cracking Technology Using Microwave Heating	• 24,970/ 37,455
NEDO Commissioned Project	• Development of production technology for bio-based products that accelerates the realization of carbon recycling	• Development of biofoundry infrastructure technology for production processes	• 6,598/ 6,598
AMED	• Basic drug discovery technology development project for next-generation treatment and diagnosis (RNA-targeted drug discovery technology)	• Development of basic technologies for manufacturing raw materials and APIs for manufacturing, purification, and analysis of nucleic acid drugs	• 4,727/ 4,727
JST	• Research Results Deployment Program Industry-University Co-Creation Platform for Collaborative Research Promotion Program (OPERA)	• Creation of innovative oxidation reaction activation control technology using safe oxidants	• 4,500(1)/ 4,500

(1) Allocated to a joint research course at Osaka University

(Ref) Impact of deferred revenue & government grant on our sales and profit

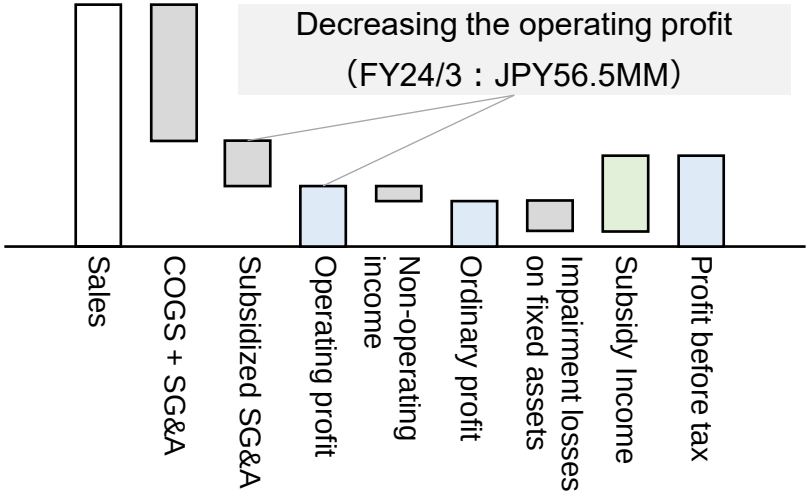
Impact of deferred revenue on our sales

- During the joint development period, it may be agreed with our partners to extend the period based on the development progress. If the revised end date of the period falls within the same fiscal year, there is no impact on sales and operating profit. However, if it falls into the next fiscal year, the recognition will be postponed accordingly, which will impact sales and operating profit.
  - EX) If a contract of JPY10MM was signed in Dec. 2022 with a development period from Jan to Mar, but the delivery date was revised to April, JPY10MM cannot be recognized as sales for FY23/3 and will be recognized along with the COGS in FY24/3.
  - In FY24/3, a sales of JPY3.0MM from one of our projects will be recognized as sales in FY25/3.

Impact of Grant on Operating Profit

- For costs related to grant programs, we recognize them as expenses under either SG&A or extraordinary losses (impairment losses on fixed assets), and then record the grant income as extraordinary profits. As the eligible expenses linked with the grant are included in the SG&A, it seemingly decreases the operating profit.
  - In FY24/3, JPY56.5MM was recorded in SG&A , resulting in a decrease of operating profit.

(Image)



(JPYMM)	(Actual) FY24/3	Subsidized SG&A expenses recorded as extraordinary profit
Sales	1,863	1,863
COGS + SG&A Eligible SG&A for grant	(1,672) (56)	(1,672) 0
Operating profit	134	190
Non-operating income	(3)	(3)
Ordinary profit	130	187
Loss on reduction of fixed assets Loss on disposal of fixed assets Eligible SG&A for grant Loss on liquidation of subsidiaries and affiliates Loss on valuation of investment securities	(53) (21) 0 (1,029) (4)	(53) (21) (56) (1,029) (4)
Grant income	80	80
Profit before tax	(897)	(897)

FY24/3 KPI Highlights

1 Number of New Contracts

- Acquired 27 new contracts compared with the target of 28 contracts.

2 Total Number of Contracts

- Executed 64 contracts compared with the target of 65 contracts.

3 Sales by Phase (contracted basis)

- Achieved sales targets in each phase almost as planned.
- In particular, sales in Phase 2 accounts for 68% of total sales (49% in FY23/3).

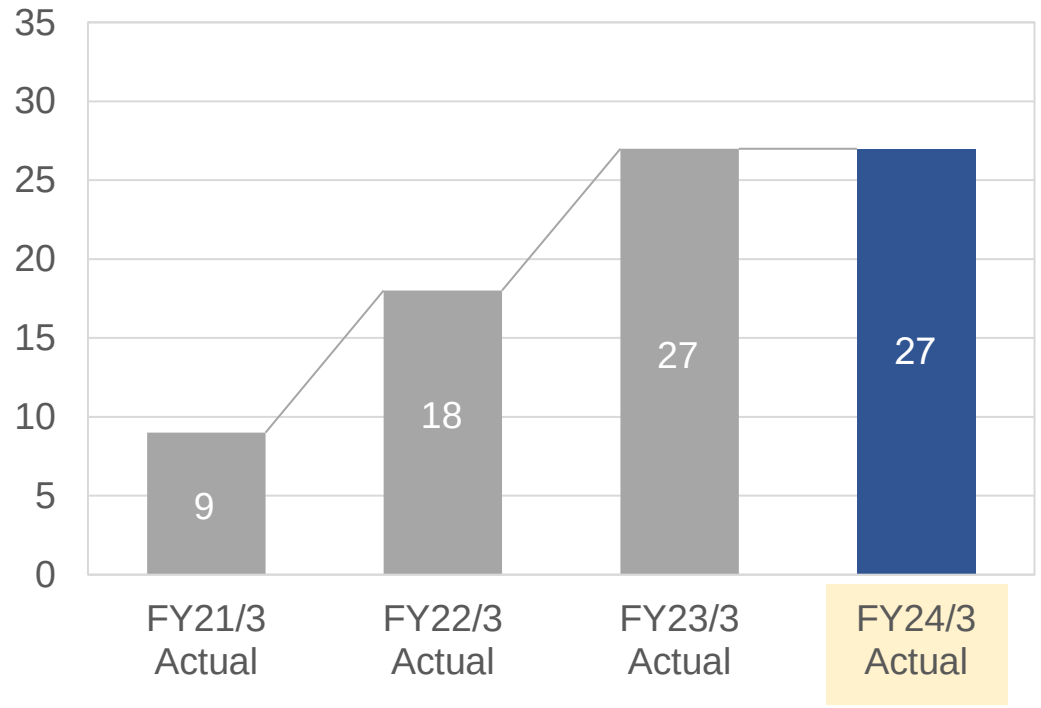
4 (Ref) Number of Projects

- Achieved 58 projects in FY24/3 (55 solution provide projects and 3 internal R&D projects), compared with the target of 49 projects (46 and 3, respectively).

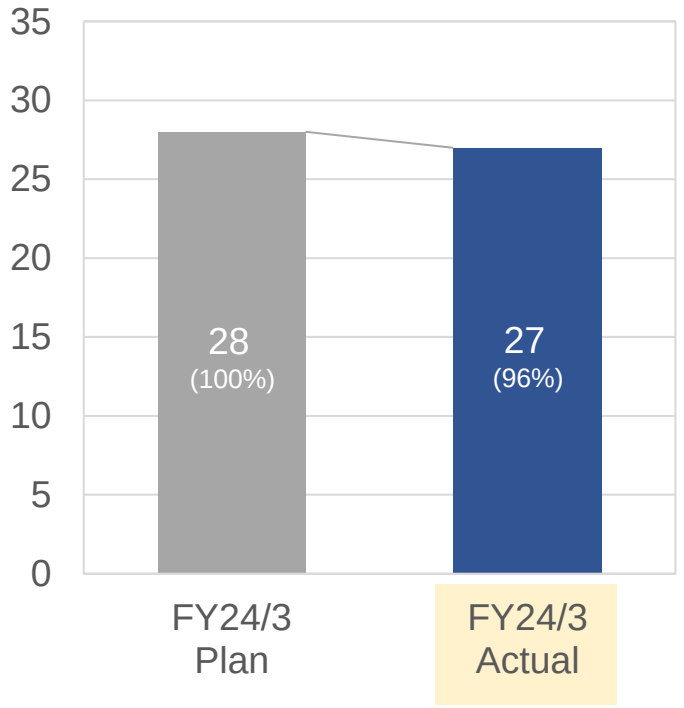
KPI (1) Number of New Contracts

- Acquired 27 new contracts compared with the target of 28 contracts.

of New Contracts



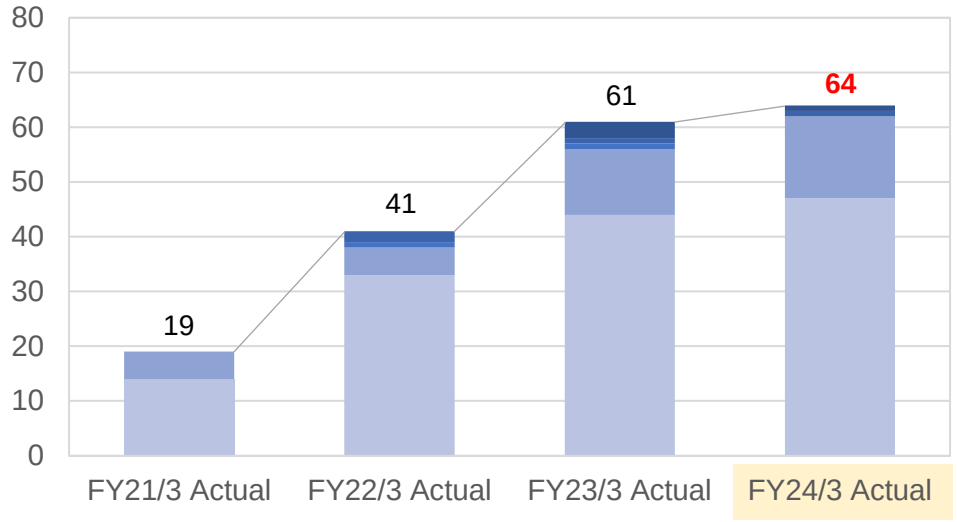
vs. Forecast



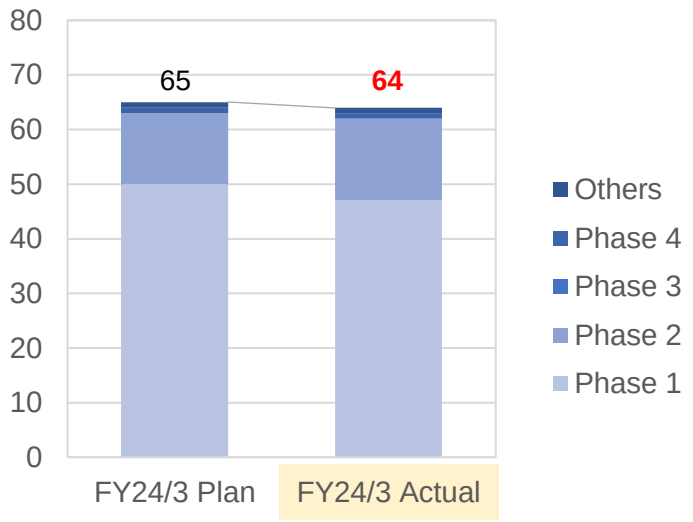
KPI (2) Total Number of Contracts

- Executed 64 contracts compared with the target of 65 contracts.

Total Number of Contracts



vs. Forecasts



Phase 1	14	33	44	47
Phase 2	5	5	12	15
Phase 3	0	1	1	0
Phase 4	0	2	1	1
Other	0	0	3	1
Total	**19**	**41**	**61**	**64**

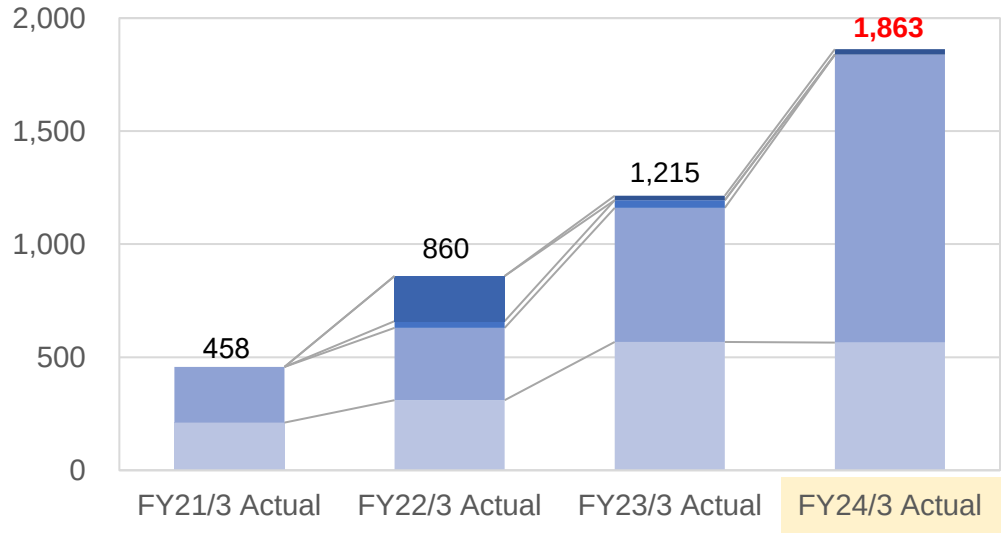
		(Difference)
50	47	(3)
13	15	+2
0	0	0
1	1	0
1	1	0
65	**64**	**(1)**

KPI (3) Sales by Phase

- Recorded steady revenues from Phase 2 projects, including the carbon fiber production project with Mitsui Chemicals, Inc. (68% of total revenues).

Sales by Phase

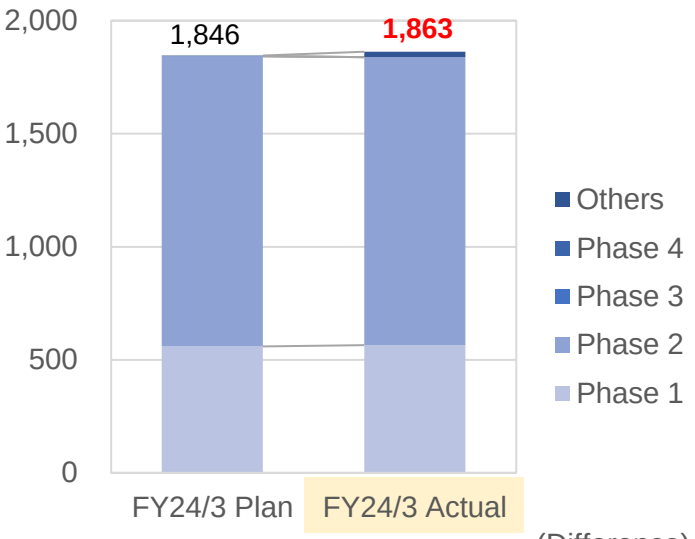
(JPYMM)



Phase 1	211	309	567	565
Phase 2	246	320	593	1,274
Phase 3	-	30	35	-
Phase 4	-	200	-	-
Other	-	-	19	24
Total	**458**	**860**	**1,215**	**1,863**

vs. Forecasts

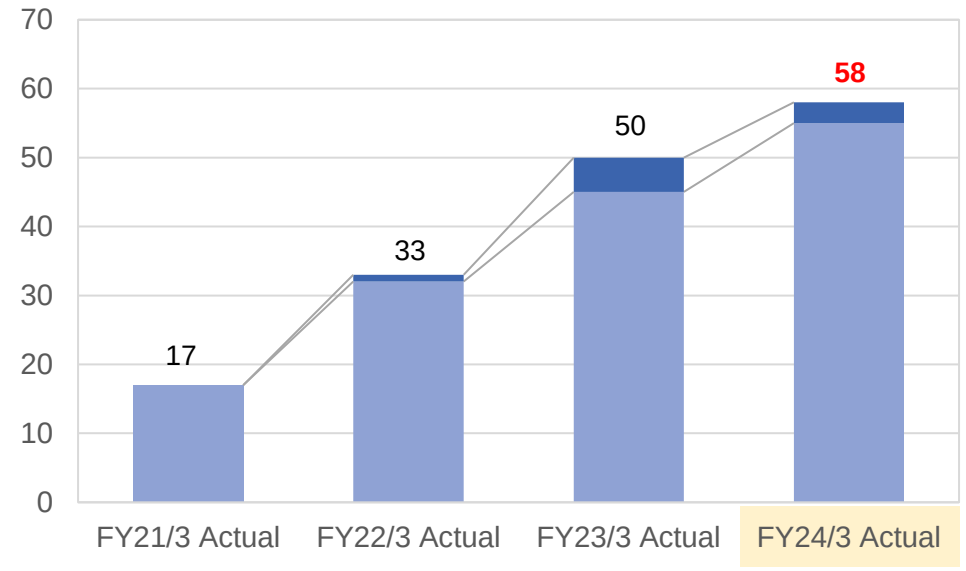
(JPYMM)



		(Difference)
559	565	+6
1,284	1,274	(10)
-	-	-
-	-	-
3	24	+21
1,846	**1,863**	**+16**

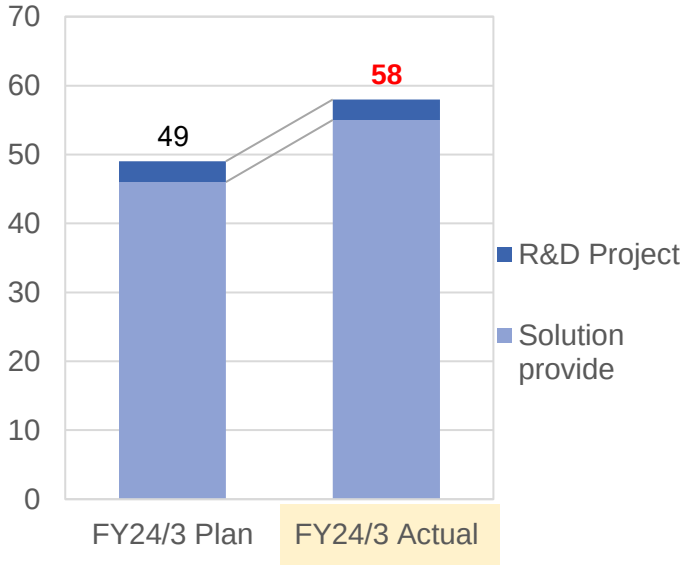
(Ref) Number of Projects

Number of Projects



Solution Provide	17	32	45	55
R&D Project	-	1	5	3
Total	**17**	**33**	**50**	**58**

vs. Forecast



		(Difference)
46	55	+9
3	3	0
49	**58**	**+9**

Progress of Growth Strategy

Updates in red

- Steady progress in acquiring high-quality projects leading to large-scale revenue in the carbon neutral field.

Business Model × Business Areas

# of Contracts × **Unit Price** × **Project Phase Development** × **Packaged Solution**

1 Acquisition of high-quality contracts

- Rather than simply pursuing quantity, will **focus on high-quality inquiries that lead to large-scale projects.**

✓ Progressed almost as planned (P.14-15)

2 Enhance certainty of project phase development by strengthening technology platform

- **Improvement of profitability** by strengthening our technology platforms.

✓ Progressed almost as planned, with steady revenues from Phase 2 projects (P.16)

3 Standardization

- Acceleration of existing standardization projects and launch of new standardized business.

✓ Acquired multiple important projects in chemical recycling and metal smelting business (P.19)

4 Focus on growth areas

- Accelerate growth by structuring projects in the **green business** and by making **upfront investments in carbon neutral fields.**

✓ Invested in development, mainly in the chemical recycling and metal smelting business, utilizing grant programs (P.11 and 19)

- **Green business**
- **Electronics (electronic materials)**
- **Healthcare (drug, food, etc.)**

R&D Capacity (Personnel & Infrastructure)

To accommodate the expected increase of contracts after FY25/3, we will gradually strengthen (1) personnel and (2) R&D infrastructure (laboratory & pilot facilities).

(1) Success in hiring core professional members while missing the initial plan due to a certain number of retirements resulting from changes in company stage (P.39-40)

(2) Completed expansion of the Laboratory and Osaka Facility (P.42)

FY24/3 Business Highlight

- Acquired / Progressed important projects which would lead to large-scale revenue, mainly in the green business area.

		Theme	Partner	Date of publication
Focus on Green business	Carbon Fiber	• Construction of a demonstration facility for innovative carbon fiber production technology at Mitsui Chemicals' Nagoya Works	• Mitsui Chemicals, Inc.	• February 8, 2024
	Chemicals Recycling	• Joint development of chemical recycling technology for scrap / waste materials generated in manufacturing process of polyamide 66 used for automobile parts, etc.	• Asahi Kasei Corporation	• April 27, 2023
		• Joint development of small-scale distributed chemical recycling system using microwave heating	• Yokogawa Solution Service Corporation	• October 31, 2023
	Metal Smelting Process	• Joint development of low-carbon lithium ore smelting technology using microwaves	• MITSUI & CO., LTD.	• June 27, 2023
		• Completed standard bench equipment using microwaves in metal smelting processes	• (Internal project)	• April 24, 2024
		• Successful calcination and reduction of nickel ore using the standard bench equipment	• Pacific Metals Co., Ltd.	• May 10, 2024

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FY25/3 Growth Strategy

- As implemented in FY24/3, we continue to make up-front investments in focusing business areas, and proceed with hypothesis verification of new standardization business for further growth.

Business Model × Business Areas

# of Contracts × Unit Price × Project Phase Development × Packaged Solution

1 Acquisition of high-quality contracts

- Rather than simply pursuing quantity, will **focus on high-quality inquiries that lead to large-scale projects.**

2 Enhance certainty of project phase development by strengthening technology platform

- **Improvement of efficiency and profitability** by strengthening our technology platforms focusing on areas with technological superiority and market demand.

3 Expansion and business scale through standardization

- Acceleration of existing standardization business (chemical recycling and metal smelting process) and launch of new standardized business

4 Focus on growth areas

- Accelerate growth by **active investments in the carbon-neutral field.**

- Green business
- Electronics
- Healthcare

Infrastructure Development

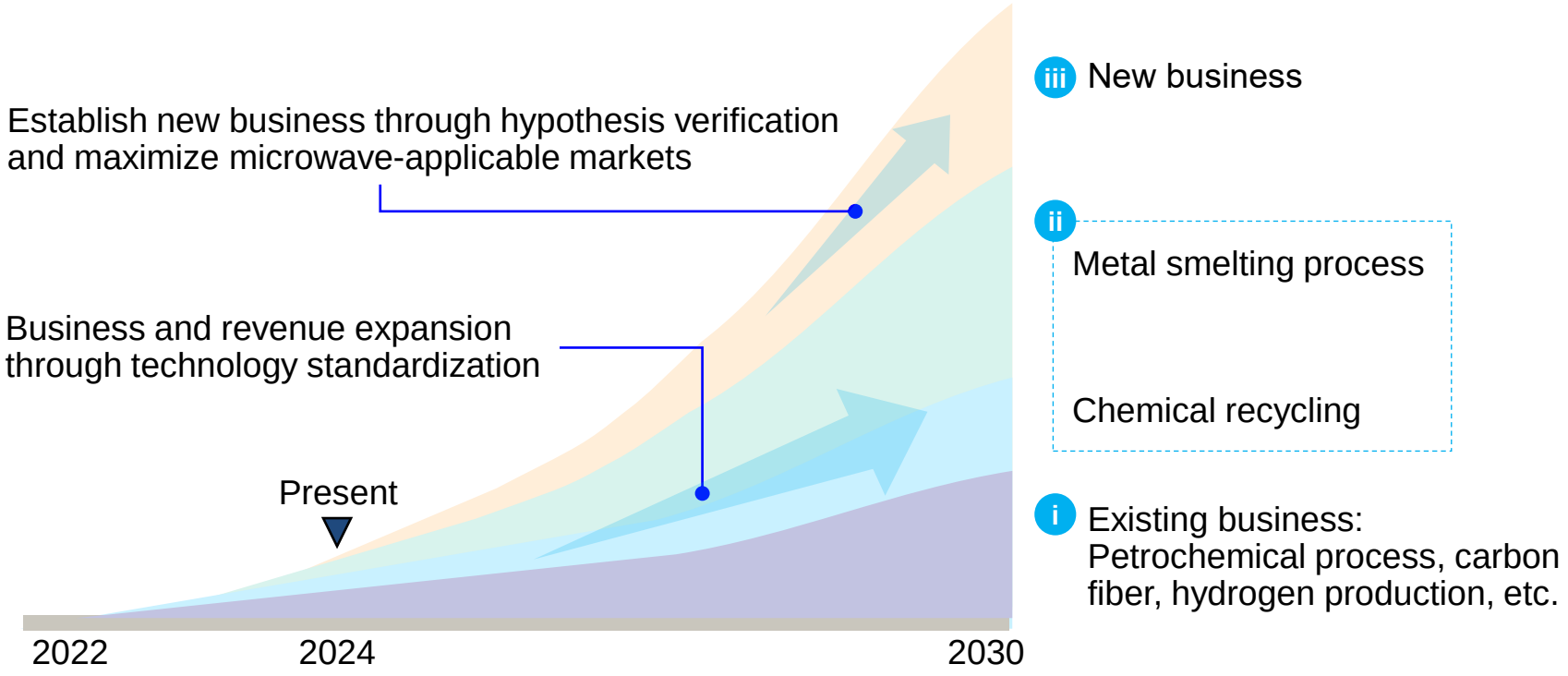
To accommodate the increase in stage-up contracts, we will gradually strengthen (1) personnel and (2) R&D infrastructure (laboratory & pilot facilities).

4 Growth Image in Green Business Areas

i Steadily develop existing projects in petrochemical process, carbon fiber production, and hydrogen production, etc. toward Phase 3 (actual equipment installation) with our partners to achieve profit.

ii We have conducted hypothesis verification in various business areas and progressed standardization of technologies and accumulation of business track records especially in the chemical recycling and the metal smelting process. In these areas, we aim to expand business and maximize earnings by promoting horizontal development.

iii In addition to the above businesses, we will simultaneously proceed with hypothesis verification to establish multiple new business areas.



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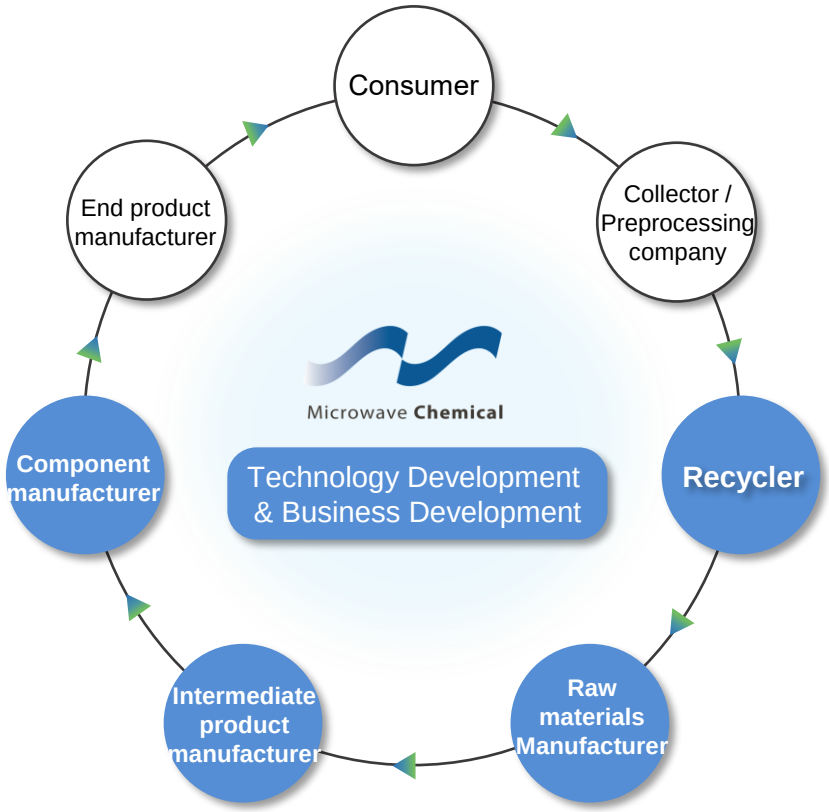
Chemical Recycling (CR) Business Overview

Current Progress	• Started CR projects using microwave technology in FY21/3. • We have worked on over 30 projects with more than 20 companies in total, and steadily accumulated microwave element technologies in this area.
Business Strategy(1): Technology Standardization	• Installed various demonstration facilities at our Osaka Facility. Plan to standardize technologies obtained through various projects. – e.g. we plan to develop small-scale distributed CR system taking advantage of the superiority of microwaves
Business Strategy(2): Social Implementation	• Aiming for early commercialization and social implementation of joint development projects with partners. • In CR business covering arterial and venous industries, we plan to quickly launch business with our partners supporting technology / business development.



Business Strategy (1): Technology Standardization

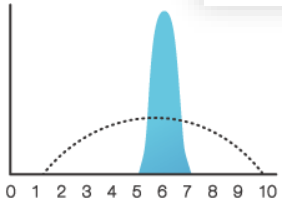
- In Dec. 2020, our microwave-based CR technology for plastics was selected by NEDO (the Strategic Innovation Program for Energy Conservation Technologies Program).
- We installed various microwave-based CR equipment at our Osaka Facility. Through demonstration tests, we are working on standardization of technology and development of microwave superiority.

September 2021:
Small demonstration equipment (120 kg/day)

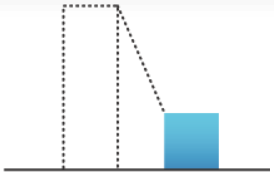
November 2022:
Large demonstration equipment (1t/day)

February 2024:
Continuous demonstration equipment (24 kg/day)

Advantages of our MW technology



High selectivity


High efficiency


Space-saving

CO_2 reduction

Business Strategy (2): Social Implementation and Commercialization

- Proceeding with joint development projects with partners for social implementation.
- Followings are the status of the announced projects and other undisclosed projects are also ongoing.

Partner	Target Plastic	Decomposition	Product	Status
Mitsui Chemicals, Inc.	• PMMA (acrylic resin)	• Thermal decomposition	• Monomer	• Demonstration started in FY22/3. Pilot facilities have been completed and demonstrated. • Ongoing toward commercialization.
Resonac Holdings Corporation	• Containers / packaging plastic	• Thermal decomposition	• Monomer	• Basic verification from FY22/3. • Plan to start demonstration using small equipment from FY25/3.
Asahi Kasei Corporation	• Polyamide 66(Nylon 66)	• Solvolysis	• Monomer	• Basic verification from FY22/3. • Small-scale demonstration from FY24/3. • Plan to conduct demonstration small equipment from FY25/3. • Aiming to commercialize from 2027.
Yokogawa Solution Service Corporation	• General waste plastic	• Thermal decomposition	• Oil	• Launched in FY23/3. • Plan to start the development phase using small demonstration equipment from 2025.

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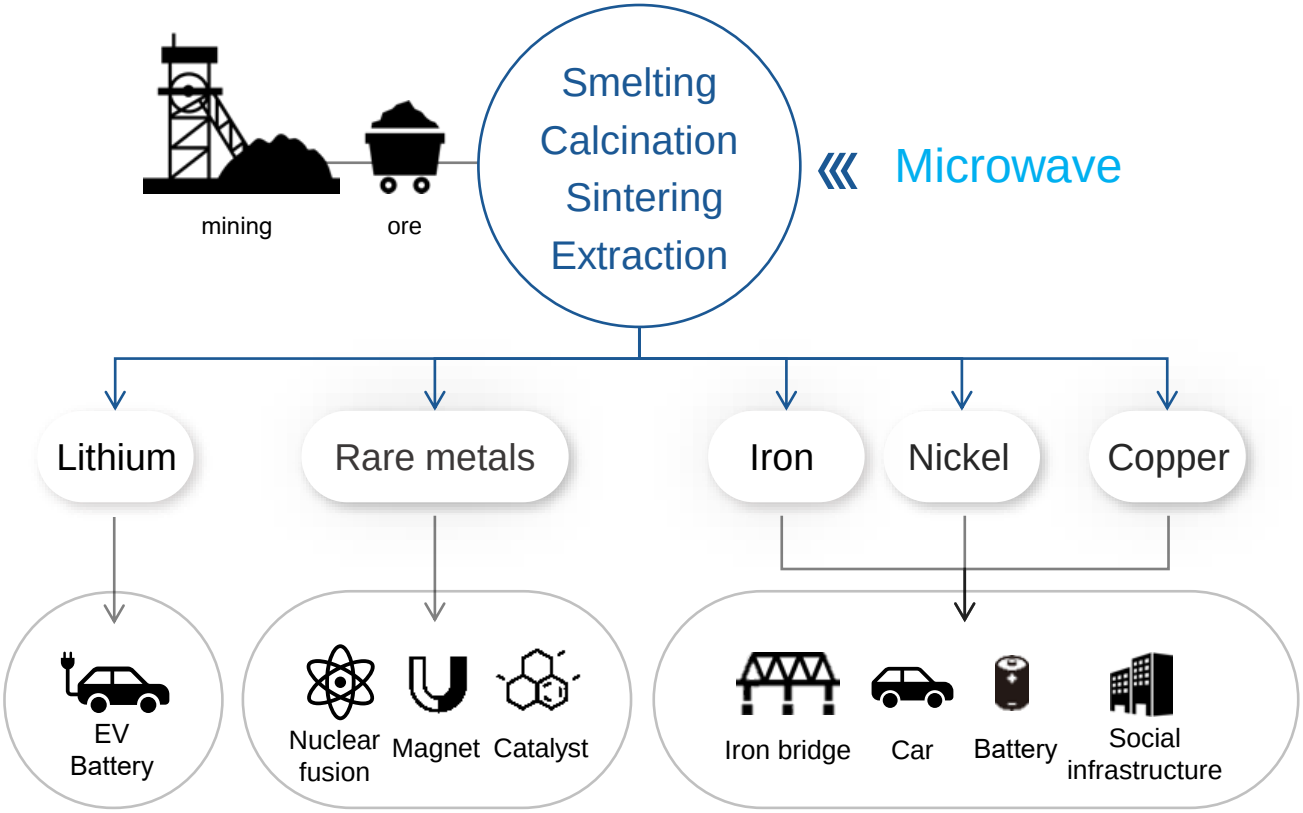
Metal Smelting Process Business Overview

- The business goal is to replace conventional processes in metal smelting, such as calcination, sintering, and reduction, which burn fossil fuels and emit large amounts of CO_2, with microwave processes based on electricity.

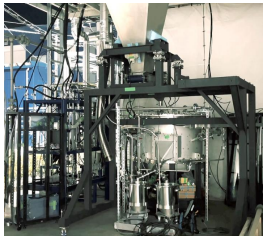


Business Strategy

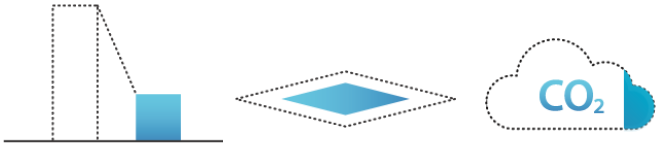
- Based on our growth strategy ❸ “Expansion and business scale through standardization“, we invest in standardized equipment development and use it for each joint development project commonly, which would reduce project costs and increase development speed as well as certainty.
- We provide processes / equipment / licenses to various mining and smelting companies widely in cooperation with marketing partners (e.g., trading companies) and equipment manufacturers.

Advantages of our MW technology

Own standard equipment



Technology development by ore and application



Energy High Efficiency | Equipment Compact | CO_2 Reduction

+

Marketing partners (e.g.trading companies) /

Equipment manufacturers

▶

Mining company

Smelting company

Battery Manufacturer / Energy companies, etc.

Completion of metal smelting process standard bench equipment

- We completed standard bench equipment capable of high-temperature reaction (e.g. calcination) of ores using microwaves at our Osaka Facility in March 2024.
- It is an electrified heating equipment which replaces the traditional process burning fossil fuels and emitting large amounts of CO_2 with microwaves, and can be applied to in any projects as we developed independently.
- Technical features are as follows:

1. A variety of ores can be processed.
2. Applicable to a wide range of processes including reduction, calcination, roasting, and drying.
3. Continuous operation under high temperature conditions of 1,000°C.
4. Significant reduction in CO_2 emissions and energy savings through improved thermal efficiency

Standard bench equipment

Development Projects (in Public)

- In addition to the table below, other projects are ongoing privately.

Partner / In-house	Target ore	Process	Status
National Institutes for Quantum Science and Technology (QST)	• Lithium	• Melting	• Started small-scale demonstration in FY23/3.
QST	• Beryllium	• Melting	• Same as above.
Mitsui & Co., Ltd.	• Lithium	• Calcination	• Started demonstration in FY24/3.
Pacific Metals Co., Ltd.	• Nickel	• Calcination/ Reduction	• Small size verification from FY24/3. • Plan to install actual equipment targeting FY31/3.
In-house development	• Iron ore	• Reduction	• Small size verification succeeded. • Plan to start demonstration tests using standard bench equipment going forward.

Agenda

1. Executive Summary
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FY25/3 Forecasts

- In FY24/3, we achieved revenue growth mainly driven by the carbon fiber production project with Mitsui Chemicals, Inc., and in FY25/3, we plan to realize revenue mainly from other projects; continue focusing on Phase 2 development. (JPY15MM in Phase 3 below is revenue related to actual equipment design)
- While revenue is expected to decrease compared to FY24/3, we plan to achieve operating surplus by controlling SG&A expenses.

(JPYMM)	FY24/3 Actual	FY25/3 Forecasts	YoY comparison	
Net sales	1,863	1,710	(153)	(8.2)%
Phase 1	565	490	(74)	(13.2)%
Phase 2	1,274	1,201	(73)	(5.7)%
Phase 3	-	15	+15	-
Phase 4	-	-	-	-
Other	24	3	(20)	(85.5)%
Operating profit	134	48	(86)	(64.2)%
Ordinary profit	130	40	(90)	(69.4)%
Profit before tax	(897)	40	+937	-
Profit after tax	(944)	37	+982	-

*Adjustment for income taxes is expected to be zero.

FY25/3 KPI Highlights

1 Number of New Contracts

- Target 29 contracts, compared to 27 contracts in FY24/3.

2 Total Number of Contracts

- Target 61 contracts, compared to 64 contracts in FY24/3.

3 Sales by Phase

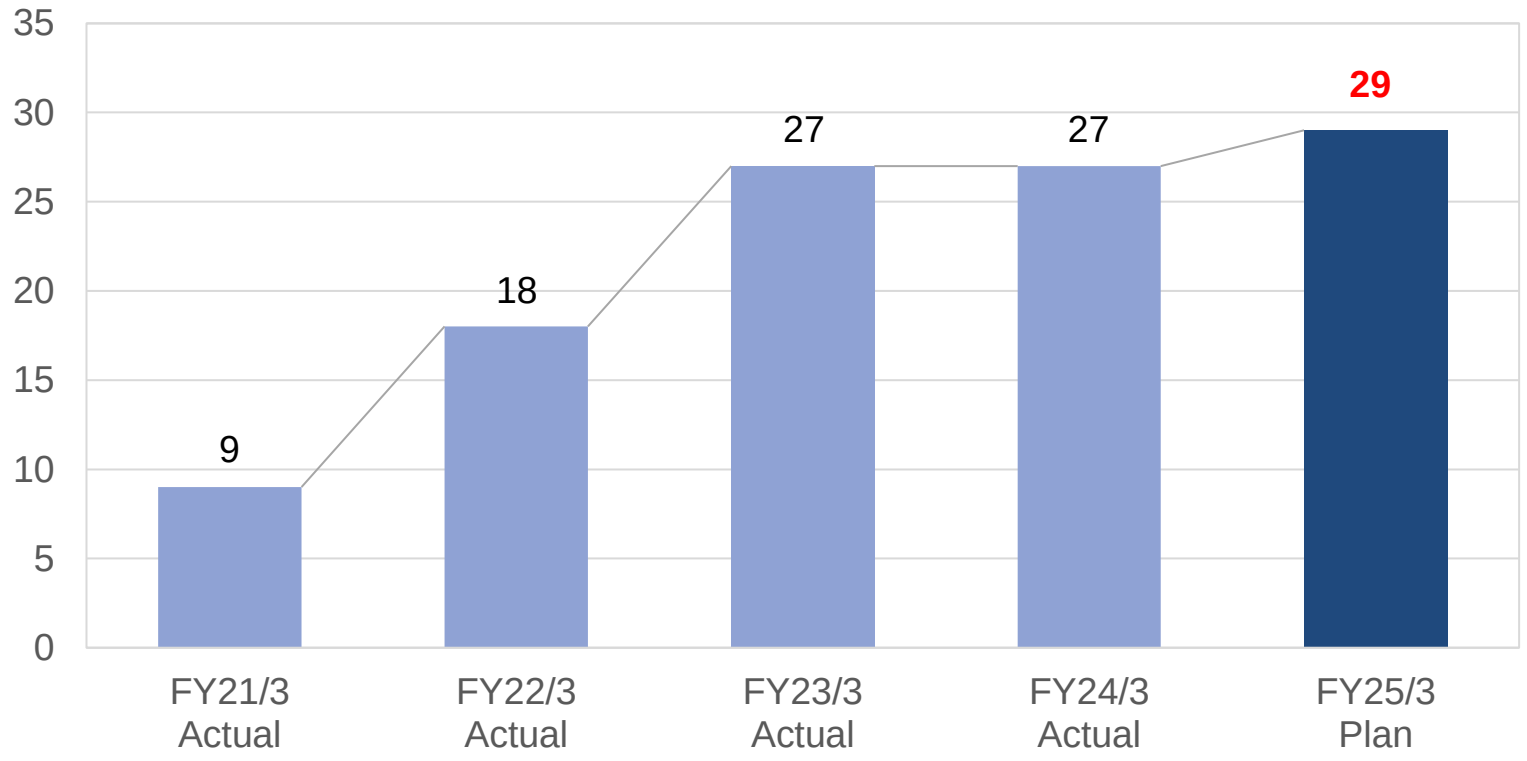
- Phase 1: JPY490MM, Phase 2: JPY1,201MM, Phase 3: JPY15MM (related to actual equipment design)
  - Sales from Phase 2 will account for 70% of total sales.

*"Number of projects", shown as reference information, will not be disclosed from FY25/3 to simplify KPI information.

KPI (1) Number of New Contracts

- Continue to focus on high quality new contracts which would lead to large-scale projects.
- Plan to conduct horizontal expansion in similar themes and existing clients utilizing standardized technology platform and accumulated reaction system know-hows.

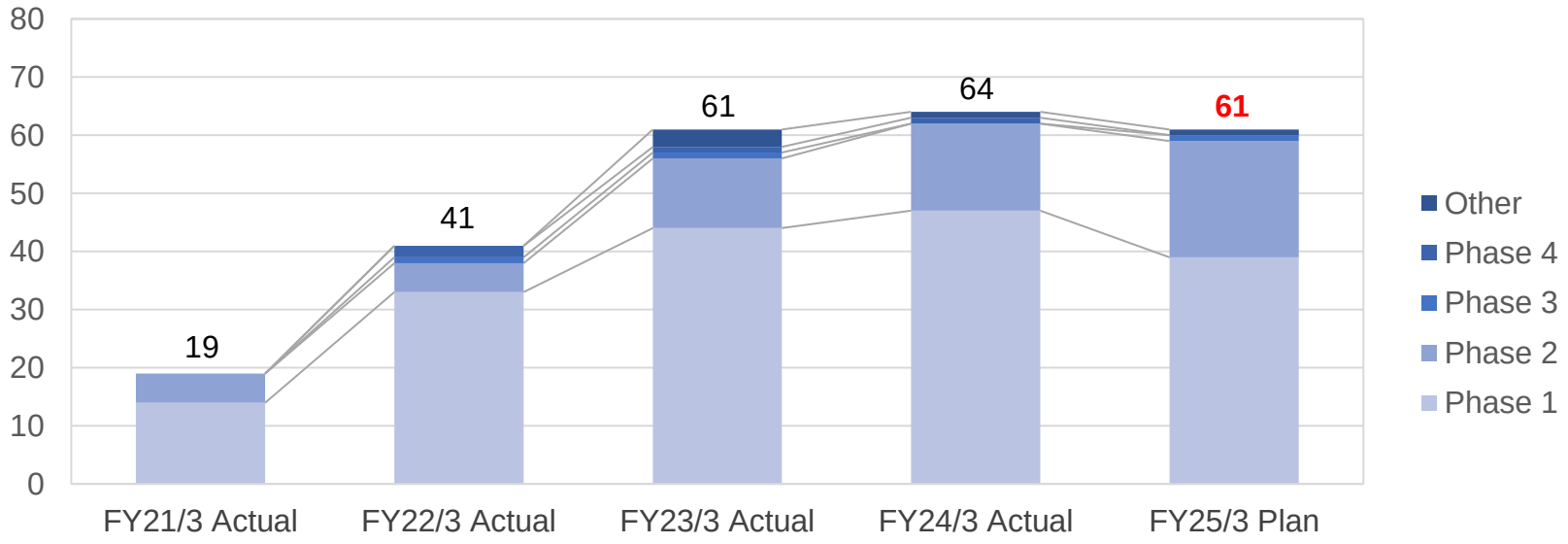
(Unit:#)



KPI (2) Total Number of Contracts

- Although the total number of contracts in FY25/3 is expected to be lower than that in FY24/3, the number of Phase 2 contracts is expected to reach a record high (20 contracts).

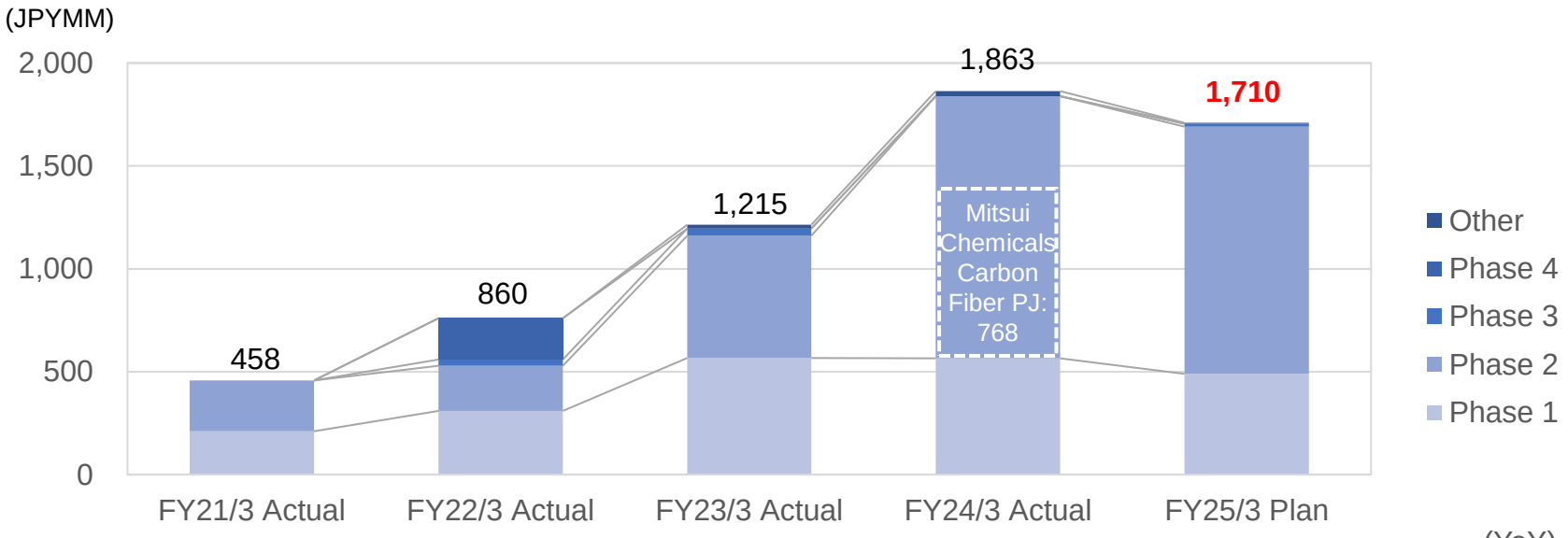
(Unit: #)



						(YoY)
Phase 1	14	33	44	47	39	(8)
Phase 2	5	5	12	15	20	+5
Phase 3	0	1	1	0	1	+1
Phase 4	0	2	1	1	0	(1)
Other	0	0	3	1	1	0
Total	**19**	**41**	**61**	**64**	**61**	**(3)**

KPI (3) Sales by Phase

- Although revenue of JPY768MM from the carbon fiber production project with Mitsui Chemicals, Inc. in FY24/3 will not be continuously recorded in FY25/3 (the project itself is ongoing), we expect progress in the other Phase 2 projects.
  - Sales from Phase 2 will account for 70% of total sales (record high).
  - Unit price per contract in Phase 2 is also expected to increase significantly, if excluded the Mitsui Chemicals carbon fiber project. (FY24/3: c.JPY36MM (excl. the carbon fiber project) / FY25/3: c.JPY60MM)

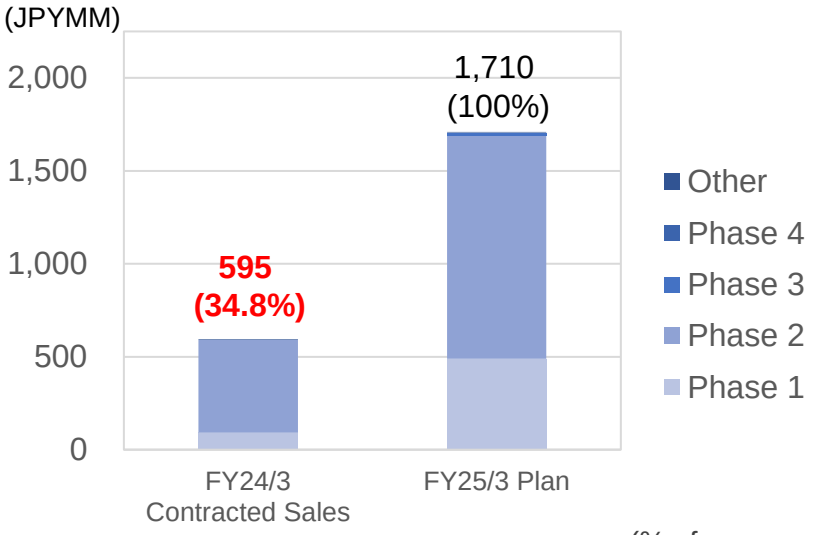


						(YoY)
Phase 1	211	309	567	565	490	(74)
Phase 2	246	320	593	1,274	1,201	(73)
Phase 3	-	30	35	-	15	+15
Phase 4	-	200	-	-	-	-
Other	-	-	19	24	3	(20)
Total	**458**	**860**	**1,215**	**1,863**	**1,710**	**(153)**

(Ref) Contracted Sales

- As of the end of FY24/3, the progress of contracted sales compared with FY25/3 sales target is c.35%, while there are many potential projects which have not yet been executed but are in the discussion stage, and we aim to steadily execute and complete these contracts.
  - As of the end of FY23/3, the progress of contracted sales for FY24/3 sales target was 58%, of which c.70% was contributed by the contract of the carbon fiber production project with Mitsui Chemicals, Inc.

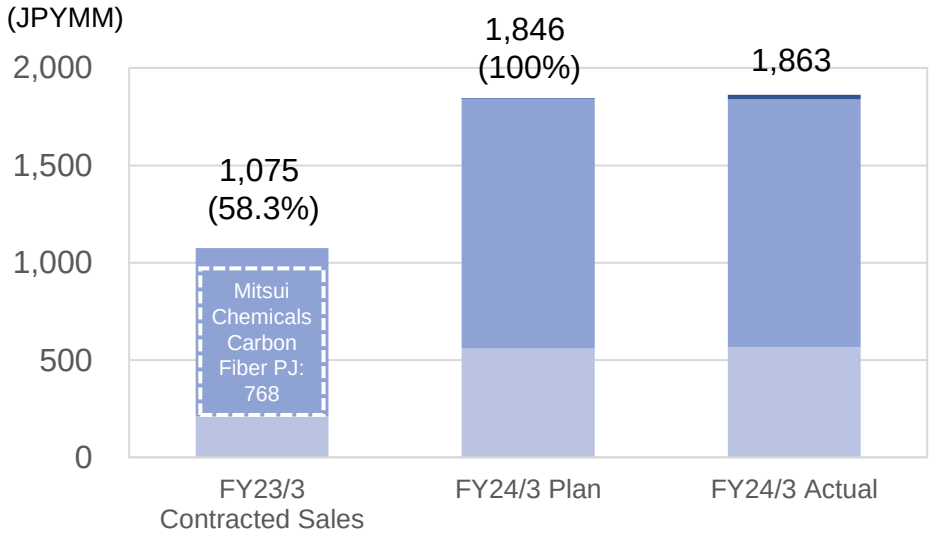
Contracted sales for FY25/3 as of the end of March 2024



(% of progress)

Phase 1	93	490	19.1%
Phase 2	498	1,201	41.5%
Phase 3	-	15	0.0%
Phase 4	-	-	-
Other	3	3	100%
Total	**595**	**1,710**	**34.8%**

(Ref) Contracted sales for FY24/3 as of the end of March 2023



Phase 1	213	559	565
Phase 2	862	1,284	1,274
Phase 3	-	-	-
Phase 4	-	-	-
Other	-	3	24
Total	**1,075**	**1,846**	**1,863**

Capacity Expansion (1) Personnel

- The target of personnel plan was not achieved due to a certain number of employees retirement as a result of a change in the company's stage. Although there are various individual factors for employees retirement, we implemented following measures to reduce the turnover rate and strengthen the organization:
  1. Increased salary level in FY25/3 (average +11% compared to FY24/3)
  2. Enhanced personnel evaluation and training systems
  3. Amassed and standardized experimental / development know-how and streamlined operations
  4. Formulated new corporate values and implemented measures to disseminate it
  5. Launched dialogues between management and employees
- The personnel plan for FY25/3 is basically unchanged from FY24/3, focusing on developing and strengthening the current workforce, but we would acquire excellent personnel as needed.

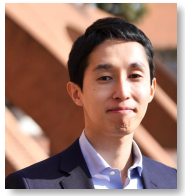
Number of Employees and Plan for FY25/3

(# of enrolled employees as of the end of March. Excluding directors and temporary employees)

(Unit: persons)	FY22/3 End Actual	FY23/3 End Actual	FY24/3 End Plan	FY24/3 End Actual	FY25/3 End Plan
Business Development and Administration	14	18	20	16	16
R&D and Engineering	46	46	53	43	43
Total	**60**	**64**	**73**	**59**	**59**

Capacity Expansion (1) Successful Recruitment of Core Professionals

- We were succeeded in recruiting core professional members to accelerate management operations and the technology platform development.

Business	 **Director of Finance & Investor Relations** • From M&A Advisory Team, Investment Banking Division, Morgan Stanley	 **Director of Business Development** • From Sojitz Corporation • Involved in various resource circulation businesses.	 **Director of Business Promotion** • From KEYENCE CORPORATION • Involved in product planning and organization development.
R&D / Engineering	 **Magnetron Development (R&D).** • Involved in basic design of electrostatic accelerator at accelerator manufacturer. • Research experience at Brookhaven National Laboratory (U.S.)	 **Mechanical Engineer** • 23 years of experience in mechanical design at an industrial machinery manufacturer, including 3 years working in the U.S.	

(Ref) Measures to Strengthen the Organization

Formulate New Corporate Values

Objective

Aligning all employees mindset toward the corporate mission and vision as the company stage changes.

Contents

As an all-company project, we spent about a year organizing what we value in our work. Reflected in HR evaluations and hiring.

Values - 01
いどむ
たたかう相手は世の中の常識。
波に乗るんじゃない、波を創るんだ。
大胆に、緻密に。

Values - 04
つなげる
ありとあらゆるナレッジを掛け算して
世界が驚く化学反応を起こすんだ。

Values - 02
きわめる
全員がプロフェッショナル。
速く、しなやかに、
やりきった先に道が続く。

Values - 05
たのしむ
わたしたちが変えるのは世界の未来。
簡単じゃない毎日にワクワクしよう。

Values - 03
たたえる
多様な個性が協働するチームプレー。
実現するのは感謝と共感と、
そしてリスペクト。

Microwave **Chemical**

Setting up a Dialogue

Objective

Create a corporate culture where everyone thinks about MWCC as a whole and proceeds with a sense of unity.

Contents

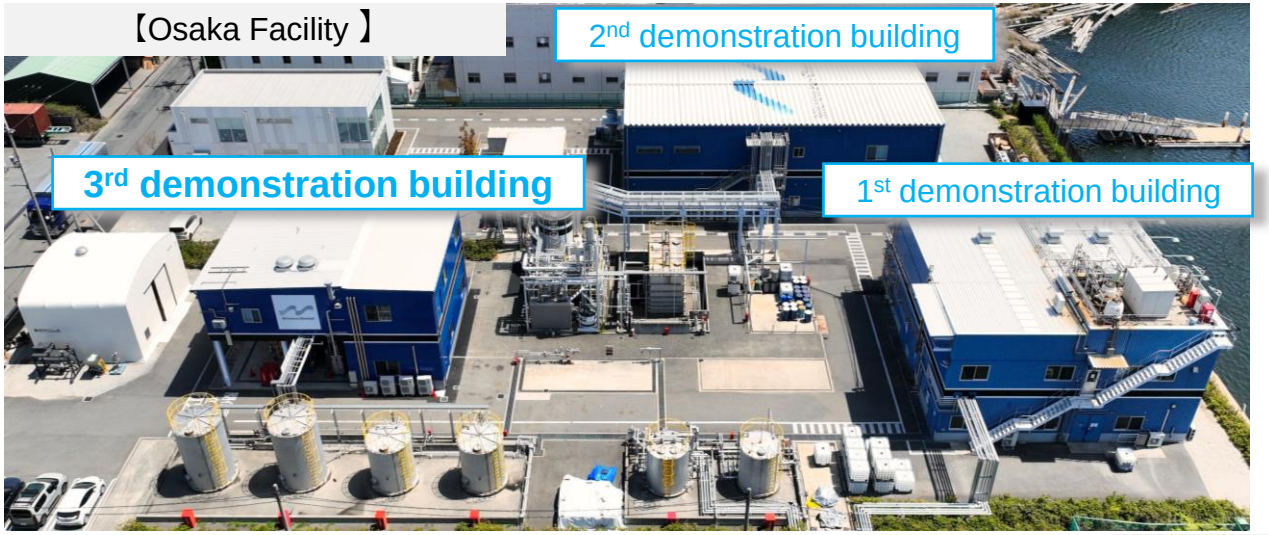
Side-by-side discussion between management and employees on the current state and future of the company and the ideal organization.

Capacity Expansion (2) Laboratory / Pilot Facility

1 Expansion of Osaka Facility (demonstration and development site)

- Expanded demonstration test area by removing completed test facilities and constructing a new demonstration building.
  - Expanded 3rd demonstration building(1): Completed in March 2024 (c.JPY70MM).
- Floor space of the demonstration test area increased by c.+30% compared to FY23/3.
- With the completion of 3rd demonstration building, we are now able to conduct demonstrations more efficiently than expected, and therefore postponed the construction of the 4th demonstration building(2), which was scheduled for completion at the end of FY24/3.

【Osaka Facility】



2 Reinforcement of Research Laboratory

- Expanded laboratory rooms and floor space by c.+40% compared to FY23/3.

【Laboratory】

(1) In FY23/3 annual earning presentation materials, it was referred to as "Non-Hazardous substance demonstration facility," but in this document it is referred to as “3rd Demonstration Facility”.
(2) In FY23/3 annual earning presentation materials, it was referred to as “3rd demonstration building”, but in this document it is referred to as “4th demonstration building.

R&D Costs (1) Total Amount and Percentage to SG&A

- Considering the cash outflow associated with the extraordinary loss in FY24/3, we select and focus on R&D expenses in FY25/3.
- For research areas which are still considered to have a low probability of monetization and social implementation, we prioritize business hypothesis verification in advance over the investment.

SG&A and R&D costs: Actual and Plan

(JPYMM)	FY23/3	FY24/3		FY25/3
	Actual	Plan	Actual	Plan
Total SG&A	**803**	**995**	**985**	**973**
R&D costs	**444**	**551**	**504**	**432**
% SG&A	*55%*	*55%*	*51%*	*44%*
Labor costs	187	222	253	203
% Total R&D costs	*42%*	*40%*	*50%*	*47%*
Raw material, equipment costs, etc.	121	146	113	88
% Total R&D costs	*27%*	*26%*	*22%*	*21%*
Equipment costs, etc.	135	183	137	140
% Total R&D costs	*30%*	*33%*	*27%*	*32%*
Other	**359**	**443**	**481**	**540**

R&D Costs (2) Development Policy

- Focus on development in the following three areas that will lead to technology standardization and social implementation.

Area	Summary	Timeline	R&D and Engineering Manpower Ratio	R&D Expenditure Target (excl. labor costs)	FY24/3A R&D costs[1] (excl. labor costs)
Drive Standardization	• Investment to accelerate standardization projects or to create new standardization projects, focusing on **chemical recycling**	Short-term and Mid-term	c.15-20%	JPY100-150MM	JPY91MM
Establish Technology in Carbon Neutral area	• Investment to establish technologies that can be deployed independently focusing on **metal smelting process**	Mid-term	c.5-10%	JPY Tens of MM	JPY29MM
Strengthen Technology Platform	• Investment to strengthen the **technology platform**[2]	Continuous	c.15%	JPY10-20MM	JPY14MM

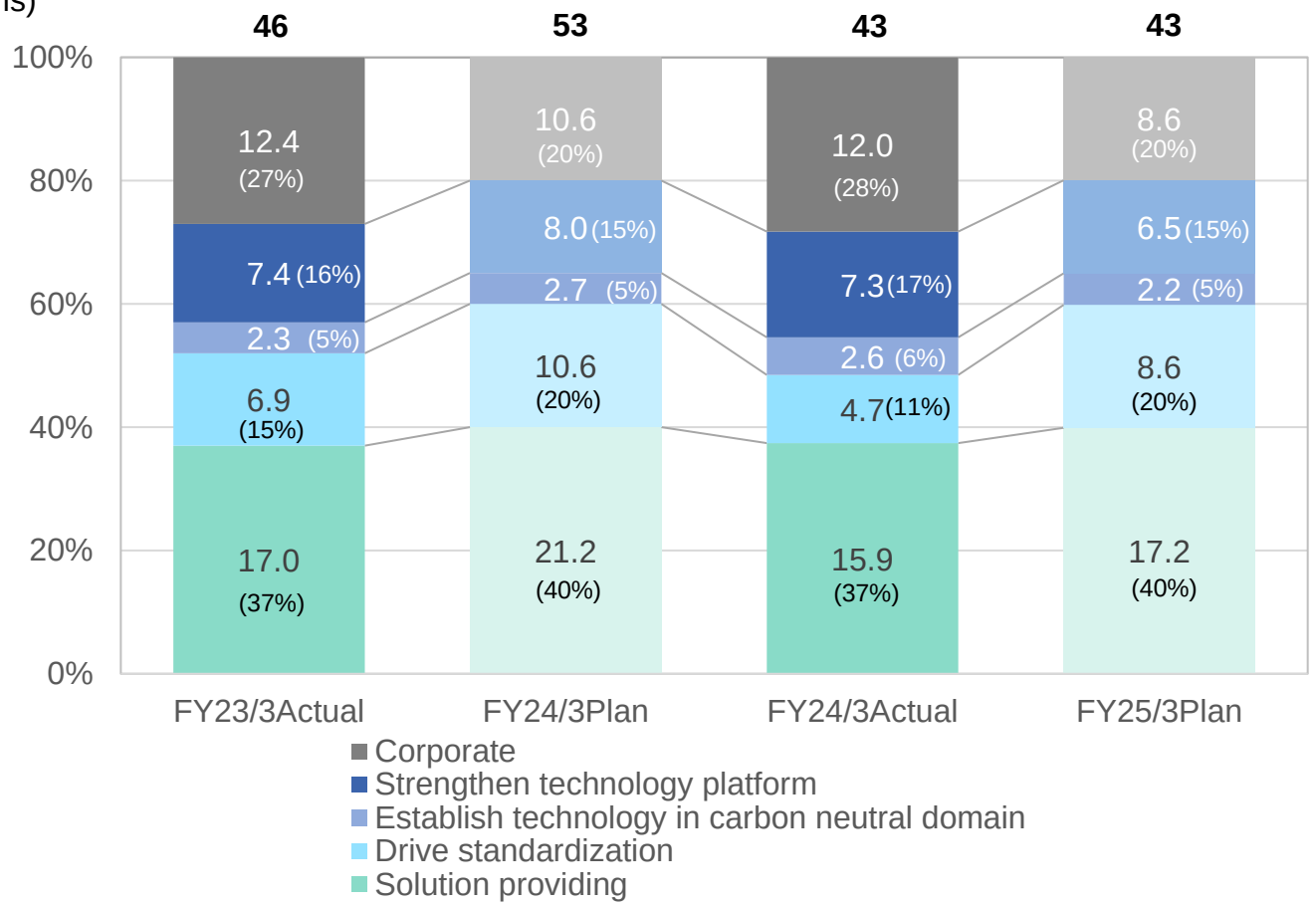
(1) Including grant-eligible research expenses. The purchase of machinery and equipment eligible for the grant is recorded as fixed asset reduction loss (extraordinary loss) in accounting.
(2) In our business model, we can basically strengthen our technology platform by providing solutions to our customers, but we can also build a more flexible and profitable technology platform by investing our own resources in proactive development.

R&D Costs (3) Manpower Policy

- The ratio of R&D/engineering staff resources allocated to corporate operations in FY24/3 exceeded the initial plan due to an increase of meeting with new potential clients, etc.
- In FY25/3, we plan to realize operational efficiency and standardization through digital transformation of project management.

R&D and engineering staff resource allocation results and plans (based on our original calculations)

(Unit: persons)



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【Mission】

Make Wave, Make World

【Vision】

Innovate chemical industry, which has been left unchanged for more than a century, and revolutionize the world of manufacturing

-Making the microwave process a global standard-

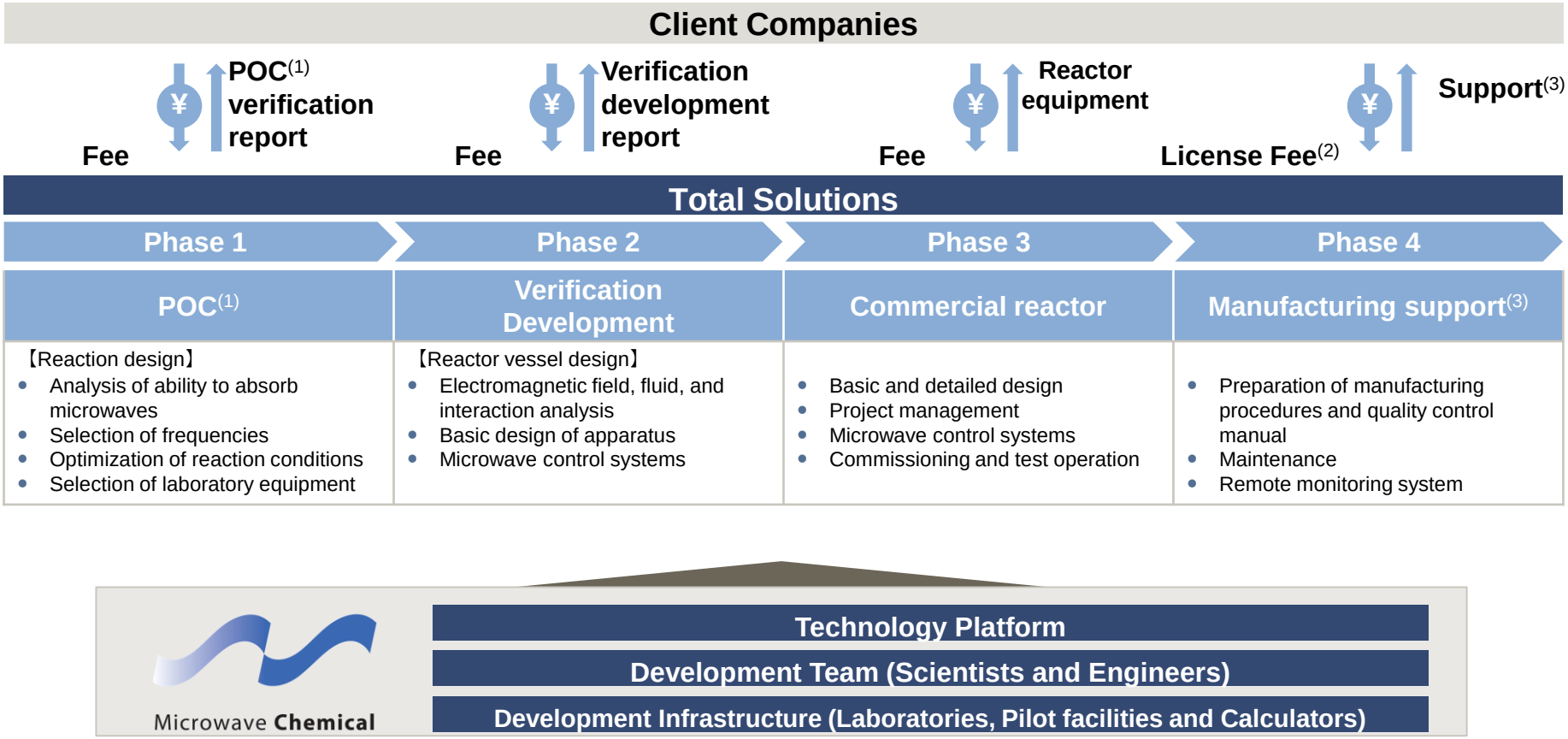
Company Overview

Name	Microwave Chemical Co., Ltd.
Founded	August 15, 2007
Representative	Iwao Yoshino, CEO
# of Employees	59 (including 8 Ph.D.)(1)
Head Office	Photonics Center 5F, 2-1 Yamadaoka, Suita, 565-0871 Osaka
Business	Provide R&D and engineering solutions for clients based on our microwave technology platform

(1) Number of enrolled employees as of the end of FY24/3. Excluding directors and temporary employees.

Business Model

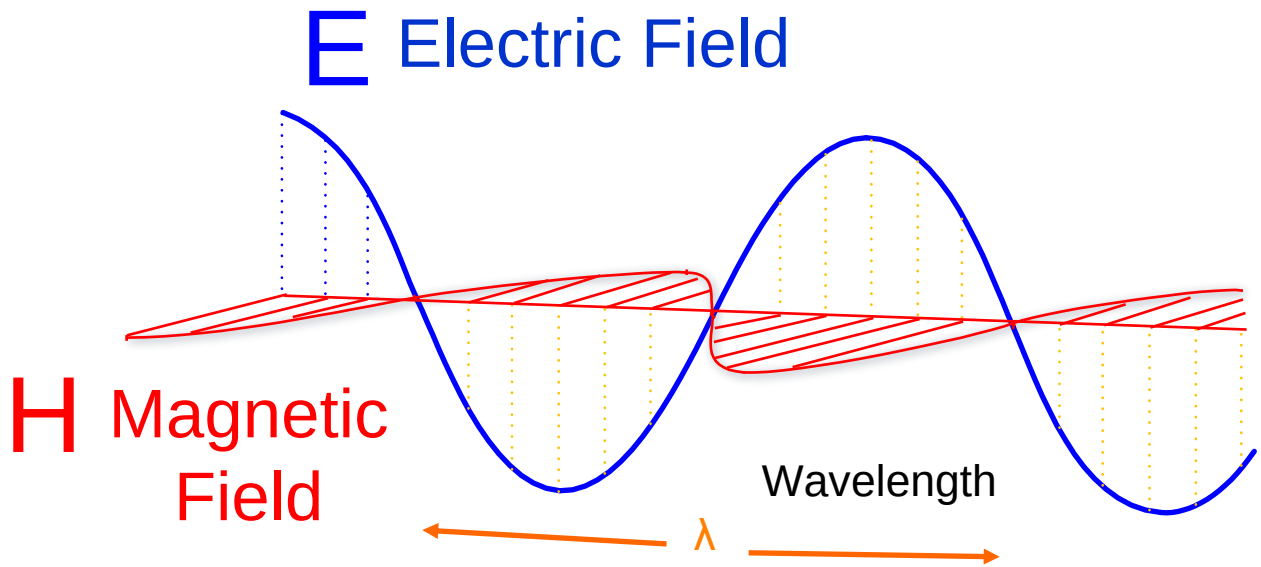
(1) Provide total solutions from R&D to engineering
(2) Realize profit on each phase and license fee when commercialized by our clients



Notes:
(1) POC: Proof of Concept. The process of testing the feasibility and effectiveness of new concept or idea before actual development
(2) License: Share the client value earned by introduction of microwave process as license fees. Specifically, receive as upfront payment and recurring royalties
(3) Manufacturing support and maintenance: Support clients who have installed microwave reactors in their manufacturing process. In addition, provide maintenance of microwave reactors and other facilities

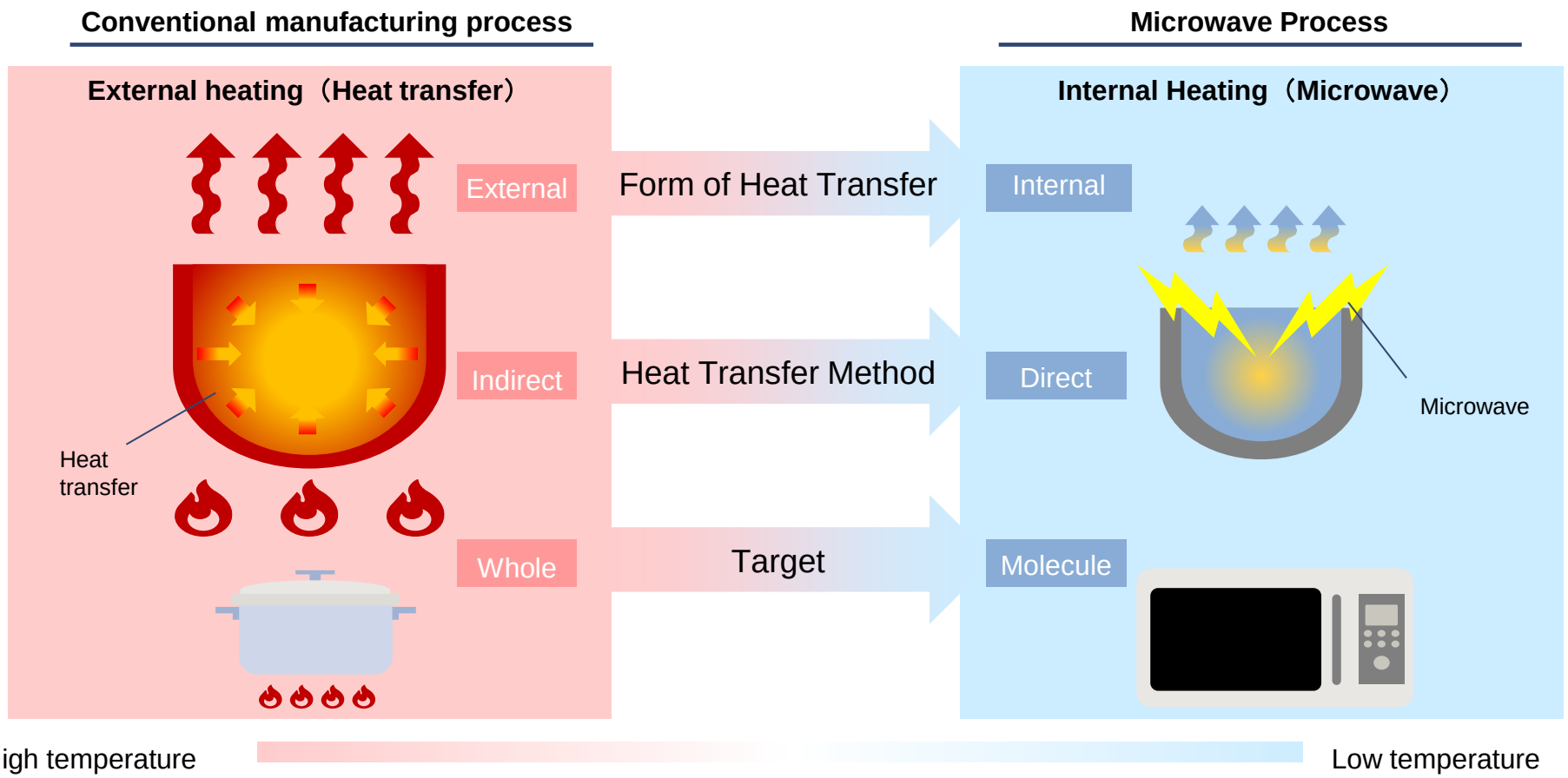
What is Microwave ?

- Microwave is an electromagnetic wave used in applications such as wireless base stations, radar-communication systems, and microwave ovens.



Feature of Microwave Process

- We will dramatically change the manufacturing process utilizing microwave technology.

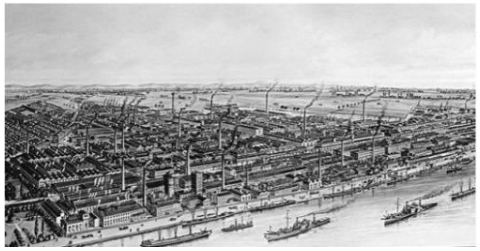


*In the Conventional heat transfer process, energy is transferred to the whole object indirectly through external material. On the other hand, microwaves process transfers energy to the target molecule directly from inside. **Totally opposite approach**.

Benefit of Microwave Process (1/2)

- The chemical industry has relied on heat and pressure-based manufacturing methods for more than 100 years, and the introduction of microwave technology, which is completely different from conventional methods, offers various benefits **such as improved manufacturing processes**, **new materials development**, and **decarbonization.**

Legacy System



Source：BASF Corporate History

1900

Current

Innovation

Microwave **Chemical**

Benefits

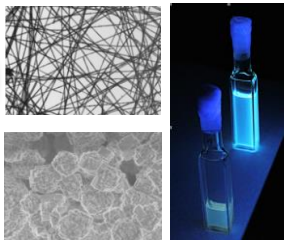
Process

Reduce Energy consumption by 1/3[*1]

Highly efficient and reduces tact timey by 1/10[*1]

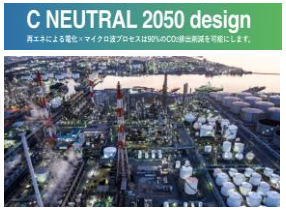
Small Footprint 1/5[*1]

Product



Development of new materials and high- quality materials

Decarbonation

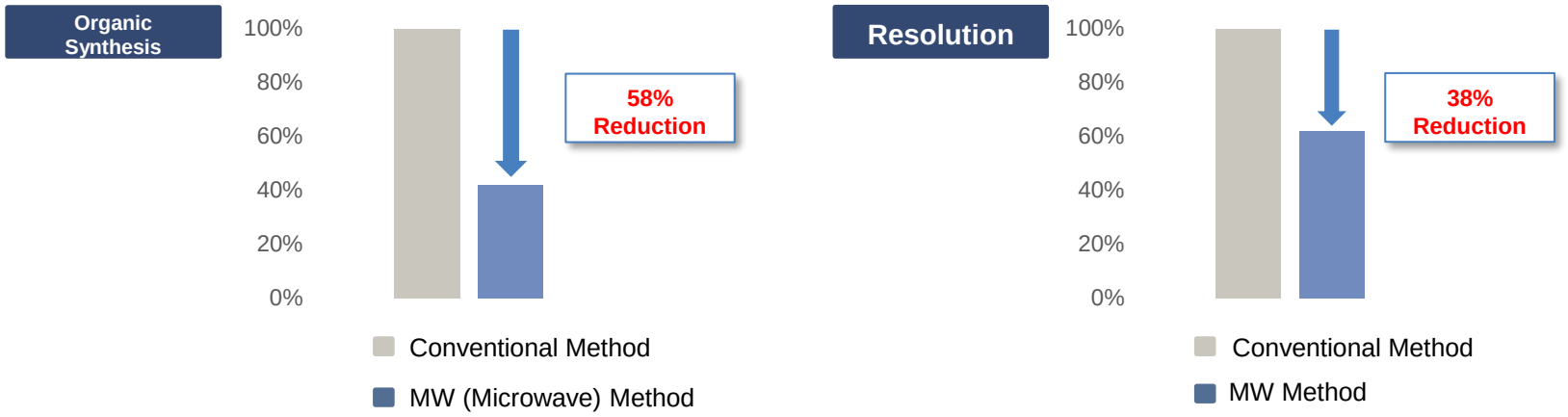


90%(1) **reduction of CO_2 emissions** with electrification using renewable energy

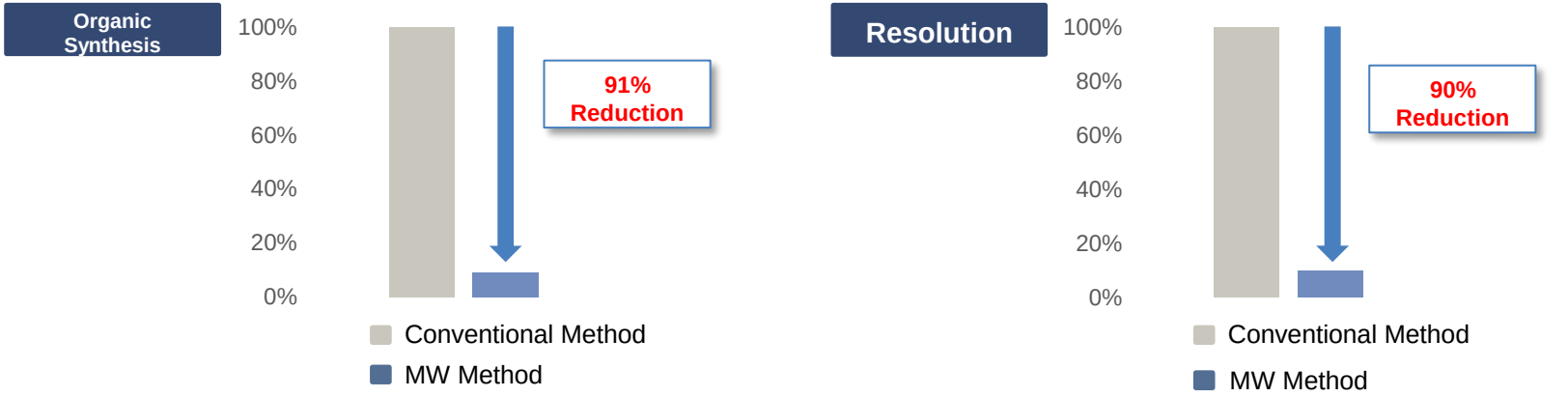
Note:
(1) The figures are estimated from our plant of fatty acid esters operated in Osaka

Benefit of Microwave Process (2/2)

Energy consumption: (1) Energy saving with microwave systems



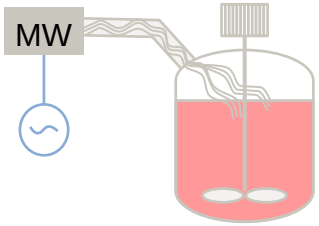
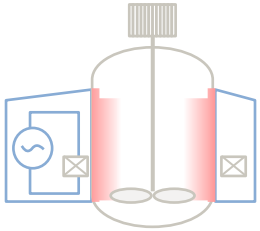
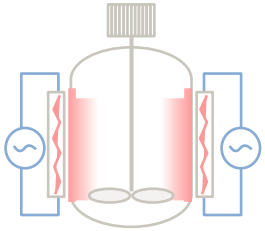
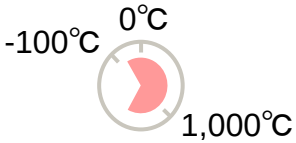
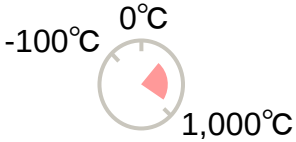
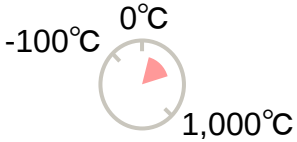
CO_2 Emissions Cuts: (1) Microwave-assisted energy efficiency × (2) CO_2 emission intensity by energy source



- CO_2 emission cuts are calculated by multiplying (1) energy consumption by (2) energy sources used. Use of microwaves reduces energy consumption in many chemical reaction processes. There is a trend that chemical manufactures across the world are laying out their roadmaps, assuming that they significantly reduce the use of conventional fossil fuels to shift to natural energies, which will diminish the intensity of CO_2 emission from energy sources.
- MW Method assumes the use of photovoltaic electricity, CO_2 emission reductions and energy equivalent reductions are our estimates. Conventional method data is our trial calculation, and MW method data is based on our demonstration machine at commercial level

Comparison – Electrification Technology

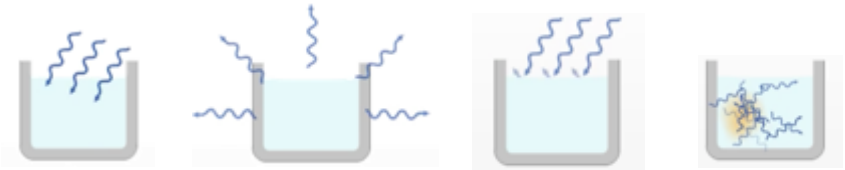
- Microwave process is the only process that transfers energy directly, which provides advantage, such as scaling up, energy efficiency, and temperature range.

	Microwave Heating	Induction Heating	Electric heater Heating
			
Energy Transfer	Direct	Indirect	Indirect
Scaling Up	 Easy	 Restricted	 Restricted
Energy Efficiency	 High	 Medium	 Low
Temperature Range			

Success in Scaling Microwave Process to Industrial Level

Challenges for Industrial Applications of Microwaves

In the chemical industry, many useful experimental results using microwaves have been reported in papers since the 1980s. However, because microwaves are "waves," it is extremely difficult to control. Therefore, industry norm was that the microwave technology cannot be used in industrial setting and only in the lab.

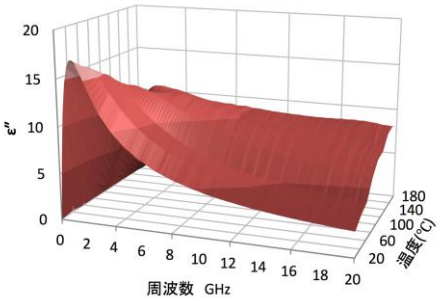


Depth of penetration | Leakage | Reflection | Distribution

Solved by Our Unique Approach

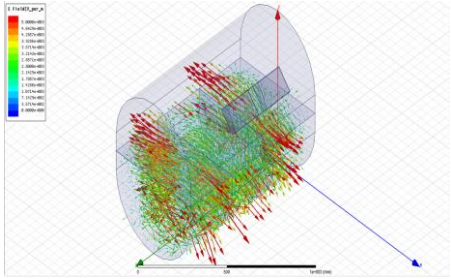
【Reaction System Design】

Developed data base of absorption rate of each molecule through our proprietary measurement technology. Design reaction utilizing the database by recognizing the pattern.



【Reactor Vessel Design】

Develop simulation technologies, couple electromagnetic field and thermic fluid analyses to increase the granularity in simulating the state, and introduce supercomputers, so as to apply to large-sized and complex reactor vessels



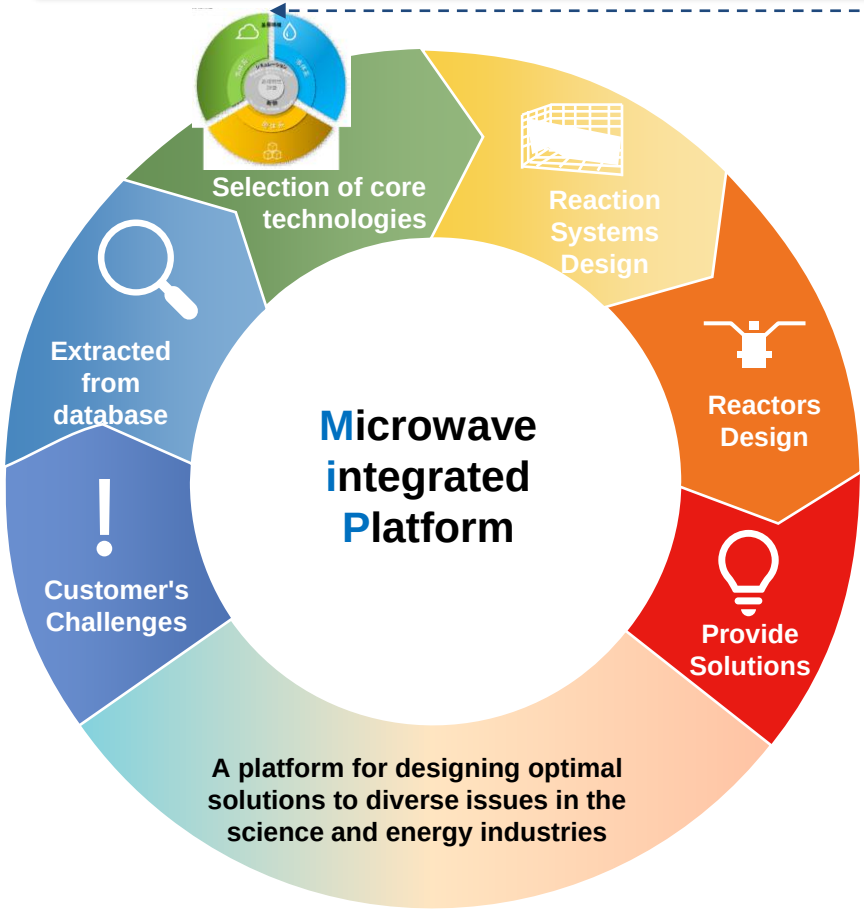
Realizing Industrial Applications of Microwaves

Completed large-scale chemical plant using microwave chemical process in Osaka in 2014 and started commercial operation complying with various laws and regulations such as the Fire Service Act.

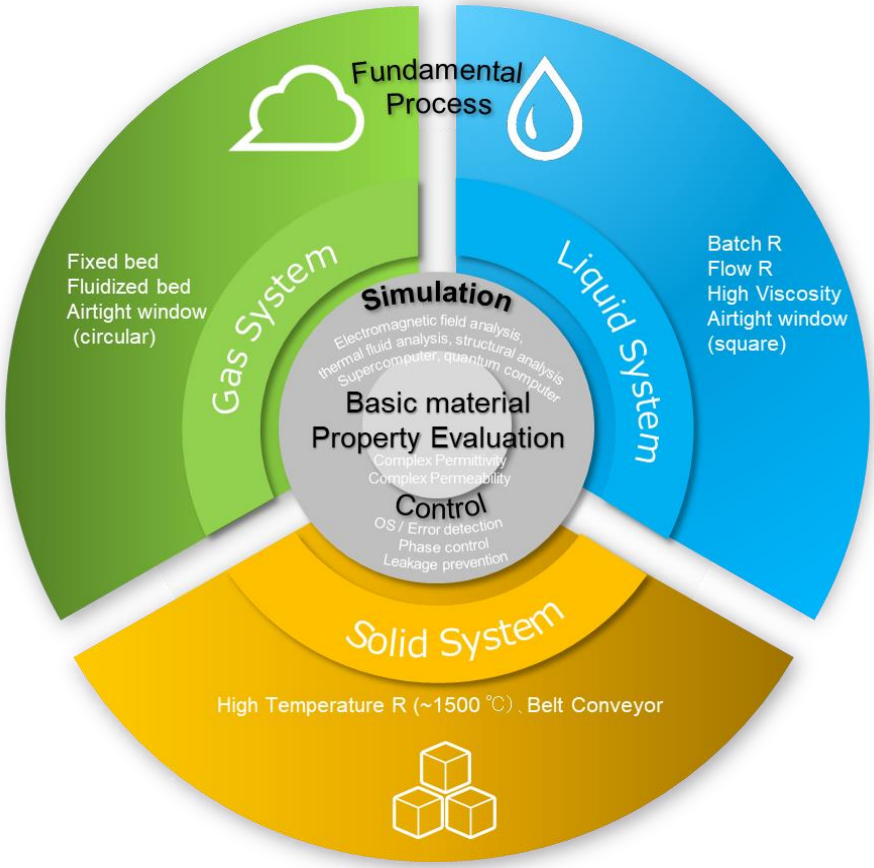
Technology Platform and Core Technologies

- After extracting hypotheses from the database for the customer's problem, we select the technology to be used from a group of elemental technologies, design the reaction system and reactor, and finally provide a solution.

Our Technology Platform

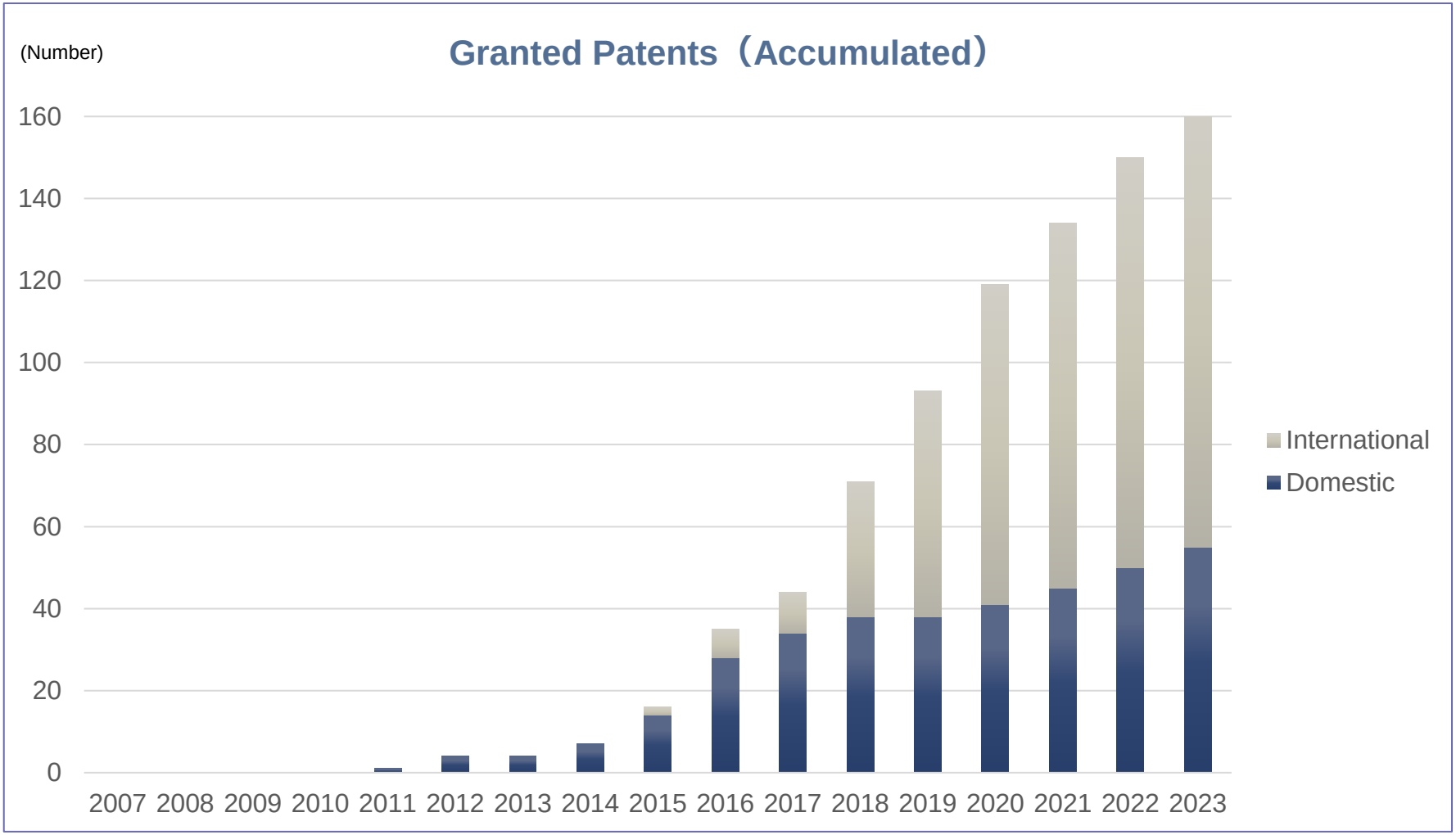


Our Core Technologies



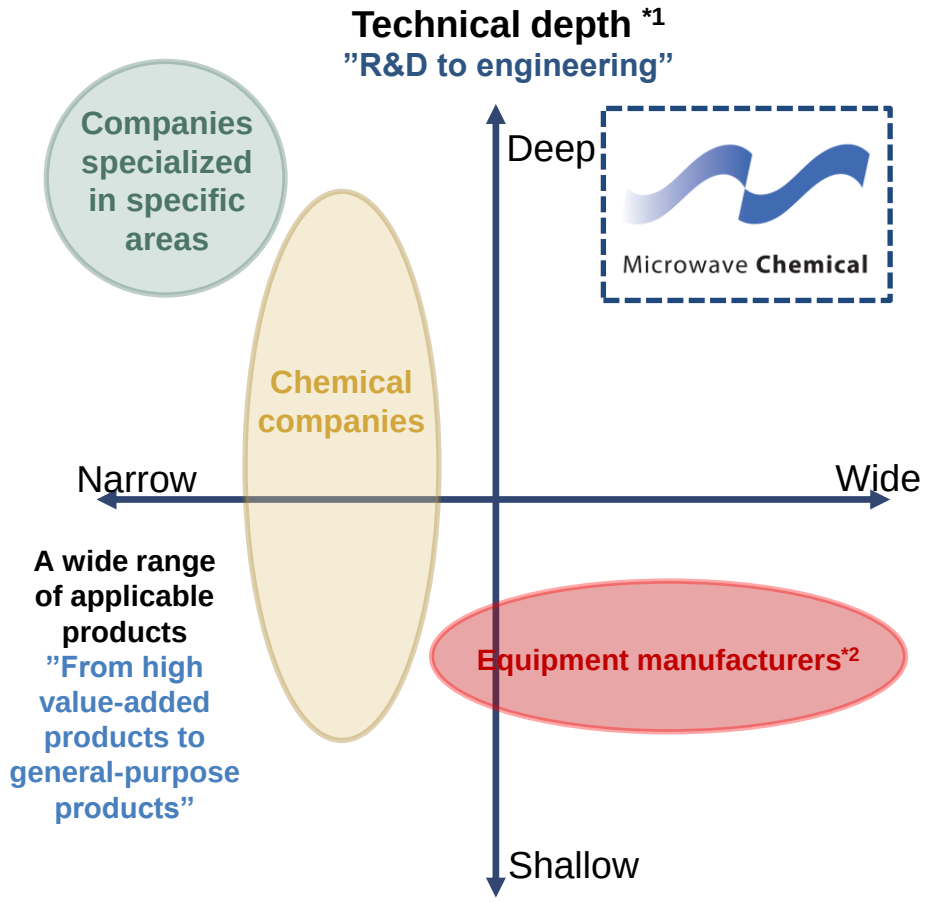
Patent Strategy

- We keep secrecy about (build the know-how of) designs of reaction systems and vessels we have developed and obtain patents on the knowledge mainly of hardware development to secure our competitive advantage.



Competitive Landscape

Current Competitive Environment



Multi-layered Entry Barrier

- **Technology platform**
  - ✓ Design capabilities and core technology groups for reaction systems and reactors
  - ✓ Patents and know-how supporting the platform
- **Development team and infrastructure**
  - ✓ Cross-sectorial team, such as physics, chemistry, engineering, and simulation
  - ✓ The large microwave-focused labs and demonstration development infrastructure
- **Customer base accumulation**
  - ✓ Deeply understanding issues and requests identified through constant relationships including horizontal connection
  - ✓ Production technology and compliance with laws and regulations accumulated through experience in the start-up and operation of large-scale commercial plants

*1 Depth of solutions we provide for customers' R&D and engineering challenges, which are backed by our scientific capabilities. Generally, either only R&D or only equipment is provided
*2 Mostly machine manufacturers

Note: This graph is an image of our own analysis of the positioning of each company in the industry

Earnings Structure

Revenue image by Phase

Estimated sales*1

Large-scale projects	JPY10MM or more	JPY100-1,000MM	JPY500-1,000MM	Upfront payment + Recurring royalties
Mid- to small-scale projects	JPY10MM or more	JPY10-100MM	JPY200-300MM	

Total Solutions

	Phase 1	Phase 2	Phase 3	Phase 4
	POC	Verification Development	Commercial reactor	Manufacturing support
Cost	• Development at laboratories • Major cost is labor one • Selection of Laboratory equipment	• Development at office or customers' site • Major cost is labor and equipment ones	• Delivery of microwave reactors to customers' plants • Major cost is equipment one	• Support for manufacturing at customers' plants • Major cost is labor one

Microwave **Chemical**

Technology Platform

Development Team (Scientists and Engineers)

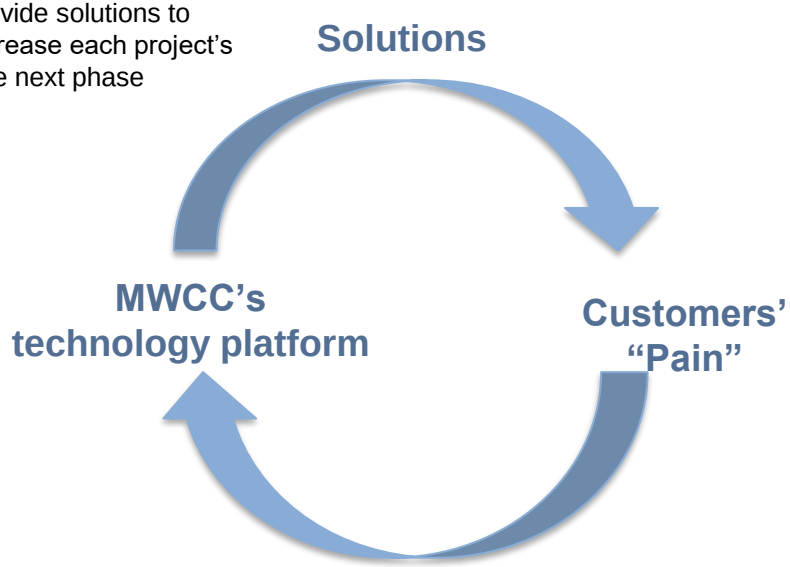
Development Infrastructure (Laboratories, Pilot facilities, and Calculator)

Note : Currently, no recurring royalties have been recorded

*1: Assumed sales size classification based on past performance for each Phase, amounts are our estimates based on past results

Virtuous Cycle Drives Growth

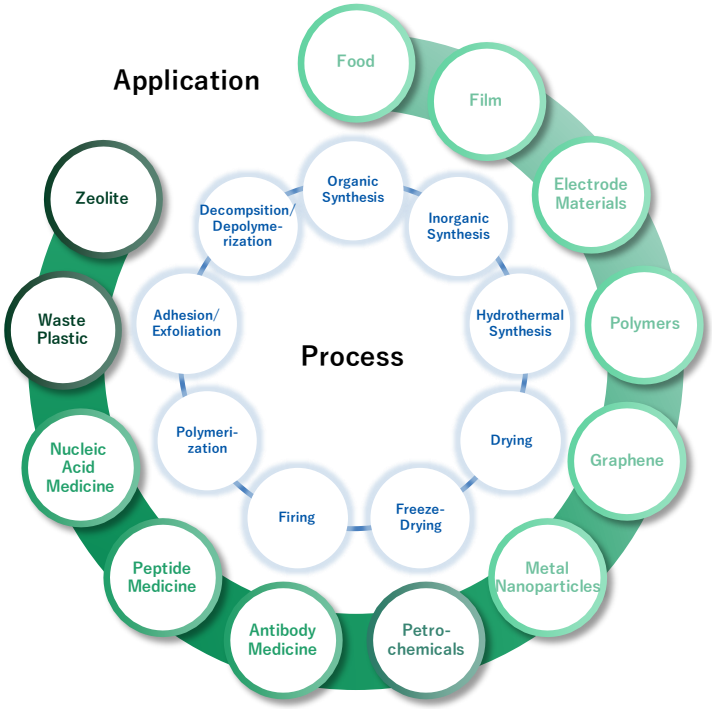
Strengthening of our technology platform will improve the ability to provide solutions to customer issues and increase each project's probability to move to the next phase



Stage Up

Strengthen
Enhance core technology

Strengthen technology platform

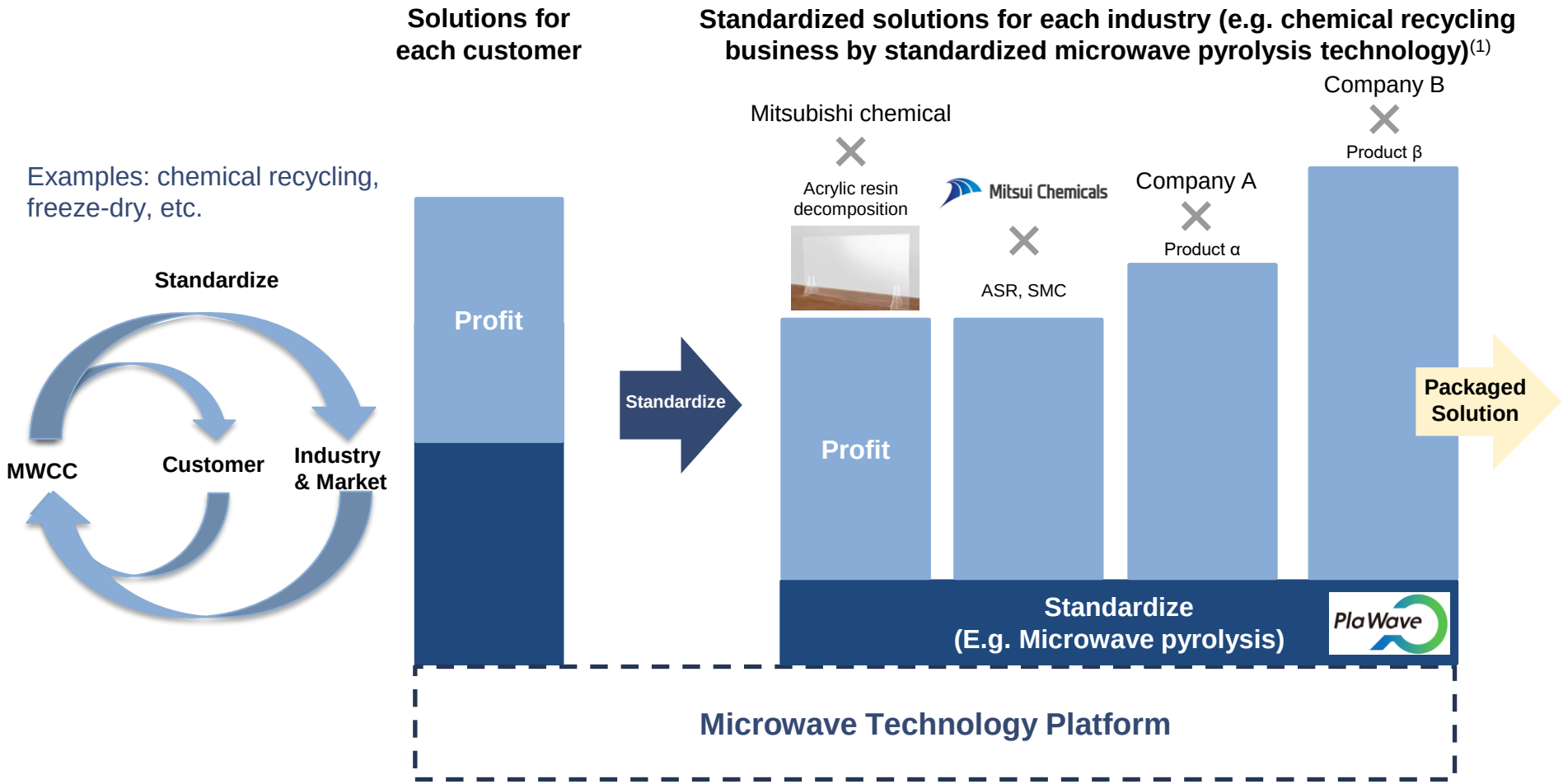


Enhanced core technology will increase the number of processes (manufacturing methods) and applications (products) for which microwave technology platform can be used

Expand Target Business Areas (process × application)

Standardization Drives Growth

- We scale our business by “standardizing” our technology platform and providing solutions to “pains” which is common to industries and markets.
- For example, we have conducted chemical recycling business using microwave pyrolysis technology, pharmaceutical-rerated and food-related business using microwave freeze-drying technology.



Note:
(1) The graph is an illustration of our own analysis of the scale of the business

Potential Market

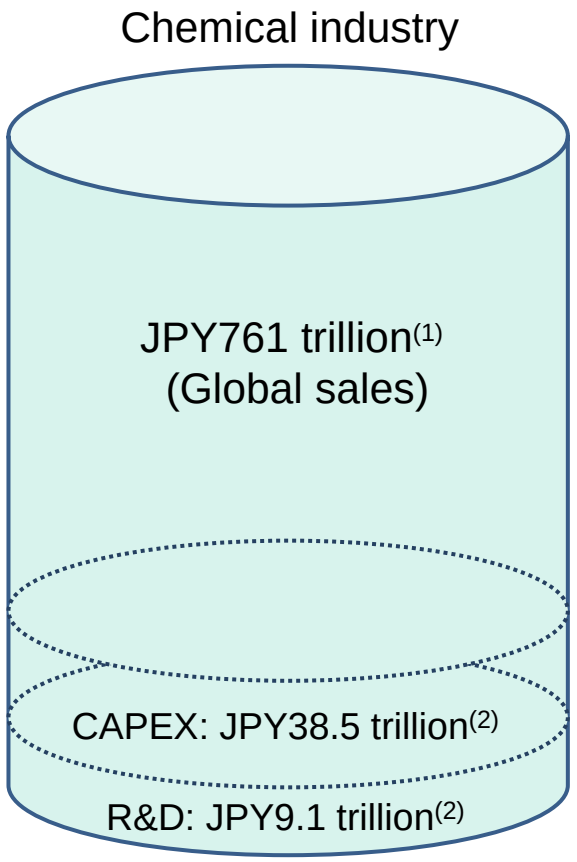
- Clients pay fees for our solutions mainly from R&D and capital investment costs.
- Therefore, we consider the potential market size to be a portion of the total R&D and capital investment expenditures of the manufacturing industry in general.

Chemical industry

- The global chemical industry market size reached JPY761 trillion in 2022(1). Sales, capital expenditures, and R&D expenditures grew at 6.0%, 6.0%, and 6.3% per year, respectively, from 2012-2022, and it will continuously require technology development to address climate change(2).

Steel industry

- The global steel market size was JPY121 trillion in 2022 and is expected to reach JPY143 trillion by 2028 (CAGR c.3%)(3).



Calculated based on the following:
1$ = 133 yen (end of 2022)
1€ = 141 yen (end of 2022)

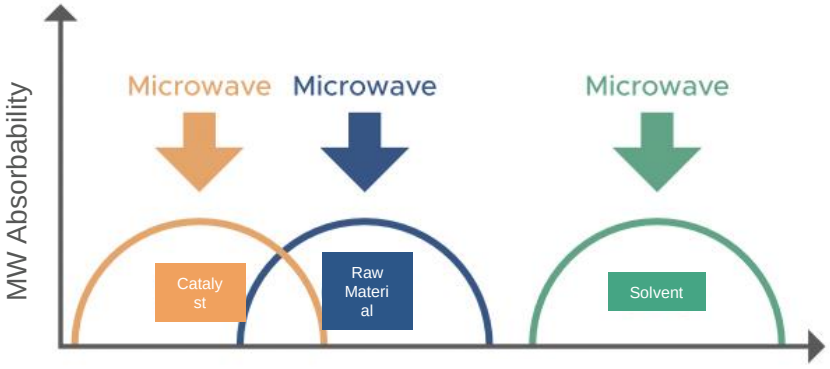
(1) 2023 Guide to the Business of Chemistry
https://www.americanchemistry.com/chemistry-in-America/data-industry-statistics/resources/2023-guide-to-the-business-of-chemistry
(2) 2023 Facts and Figures of the European Chemical Industry
(3) Steel Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

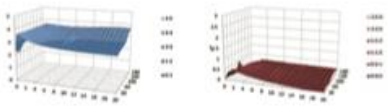
Reaction design

- Microwave absorption rate varies by material with frequency and temperature dependency. We design the reaction utilizing this characteristics.

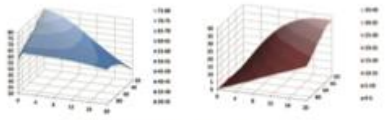
Reaction system design

Design Microwave transmission: Which target material at what frequency and temperature.



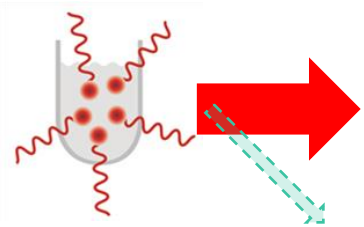


ε' of 2-Ethylhexyl ester

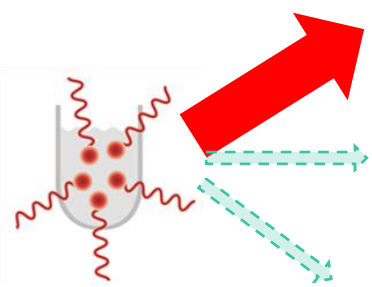


ε' of water

Use case: Plastic decomposition



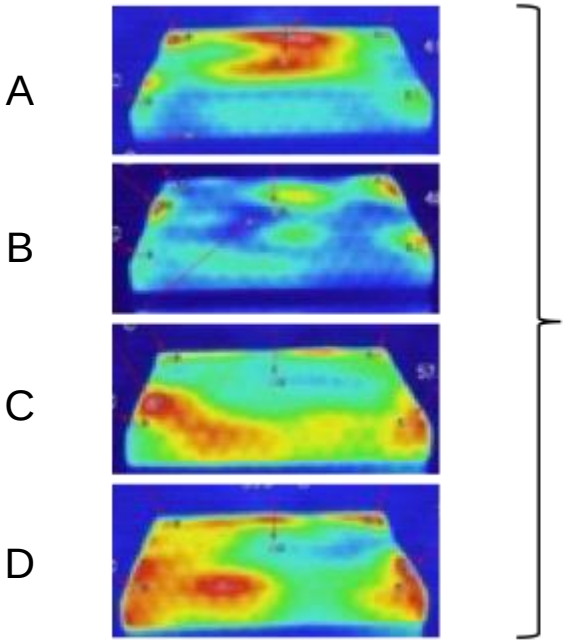
Select considering material dependence of Microwave absorbability



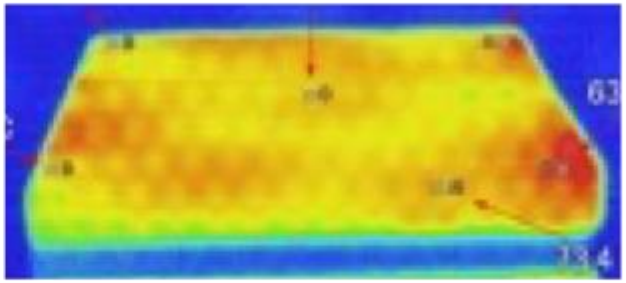
Microwave phase control

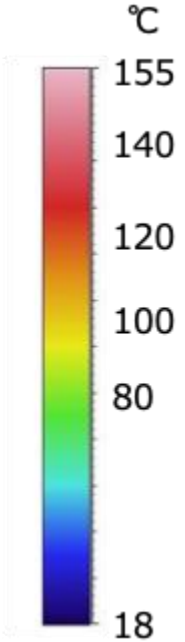
- Microwave is an electromagnetic wave, we realized precise control of the wave utilizing microwave absorption data and novel simulation technology.
- This allowed us to control the temperature distribution of the target material.

ex) By precise control of microwave irradiation condition from A through D, we achieved uniform heating that was difficult with conventional methods.



Combination of conditions A-D





Main Business Risks and Mitigation Measures

Items	Main Business Risks	Possibility/ Timing of Occurrence	Mitigation Measures
Expansion of Technological Application Fields	We have successfully achieved the scale-up of the previously challenging microwave process and launched the large-scale microwave chemical plant called 'M3K.' Following this success, we have expanded the application areas to various fields such as food additives, pharmaceuticals, carbon materials, and electronic components. We believe that microwave processes can be applied in diverse domains including commodity chemicals, functional products, and fuels. However, due to being a new technological field with high uncertainty, if the penetration of our technology into the market does not proceed as planned, it may potentially impact our business strategy and performance.	Med/ Medium to Long Term	We adopt a strategy to mitigate such uncertainties by engaging in partnerships through joint development agreements and joint venture contracts with chemical companies and other entities that possess expertise in the relevant fields.
New market entry and technological innovation	We have established proprietary platform technologies as the foundation of our business, and we believe that we have secured a strong competitive advantage in the field of microwave chemistry. However, it is also possible for new entrants with research and development capabilities surpassing ours to emerge, or for technologies that do not infringe upon our patented technologies to be developed, surpassing our own capabilities.	Low/ Medium to Long Term	We believe that by advancing the construction of plants utilizing microwave processes in numerous domains and accumulating knowledge in microwave chemistry, we can strengthen this competitive advantage.
Intellectual property	To date, there have been no known facts of litigation or claims related to intellectual property rights, including patents, associated with our business. At present, we consider the likelihood of significant hindrance to our business due to infringement on patents held by others to be low. We continue to conduct technology investigations and strive to avoid infringement incidents. However, for research and development-oriented companies like ours, it is difficult to completely avoid the occurrence of intellectual property infringement issues. In the event that our company becomes involved in legal disputes with third parties, we will consult with lawyers and patent attorneys to consider specific countermeasures based on the nature of the case. However, regardless of the validity of the claims made by the third parties, it is possible that such disputes could require significant time and expenses to resolve. While we diligently manage our technology, there is a possibility of time-consuming and costly resolution even in cases where third parties infringe upon our technology. In such cases, it could have a significant impact on our business strategy and performance.	Low/ Medium to Long Term	Currently, in the domain of component technologies, we have adopted a strategy of keeping fundamental property evaluation, simulation, and control, which are common element technologies centered around reaction system design, confidential. On the other hand, we patent and make publicly known the underlying mechanisms, which are individual element technologies primarily focused on reactor design. Through this approach, the intellectual property we have accumulated has become a strength for our company.

∗ For other risks, please refer to the 'Business Risks' section of the Annual securities report.

Disclaimer

- This document is prepared solely for informational purposes. It is not intended to solicit the sale or purchase of securities in Japan, the United States, or any other region.
- This document contains forward-looking statements. These statements regarding future prospects are based on information available at the time of the preparation. However, such statements do not guarantee future results or performance. These forward-looking statements inherently involve known and unknown risks and uncertainties, and as a result, actual future performance and financial condition may significantly differ from the explicitly or implicitly predicted future performance and results stated in the forward-looking statements.
- The factors that may influence the actual results mentioned above include changes in domestic and international economic conditions, as well as industry trends in which we operate, among others. However, these factors are not limited to the ones stated.
- Furthermore, information regarding matters and organizations other than our company is based on generally available information. We have not verified the accuracy or appropriateness of such publicly available information and does not provide any warranties regarding it.

- The updates of "Business Plan and Growth Potential" will be disclosed around the time of the announcement of the annual financial results. The next update is expected to be made after the announcement of financial results around May 2025.

End of Document

Make Wave,
Make World.

世界が知らない世界をつくれ