

Crasus Chemical Inc.

Business Briefing Material

June 13, 2025

Crasus Chemical Inc.

明日の暮らしを化学で支える



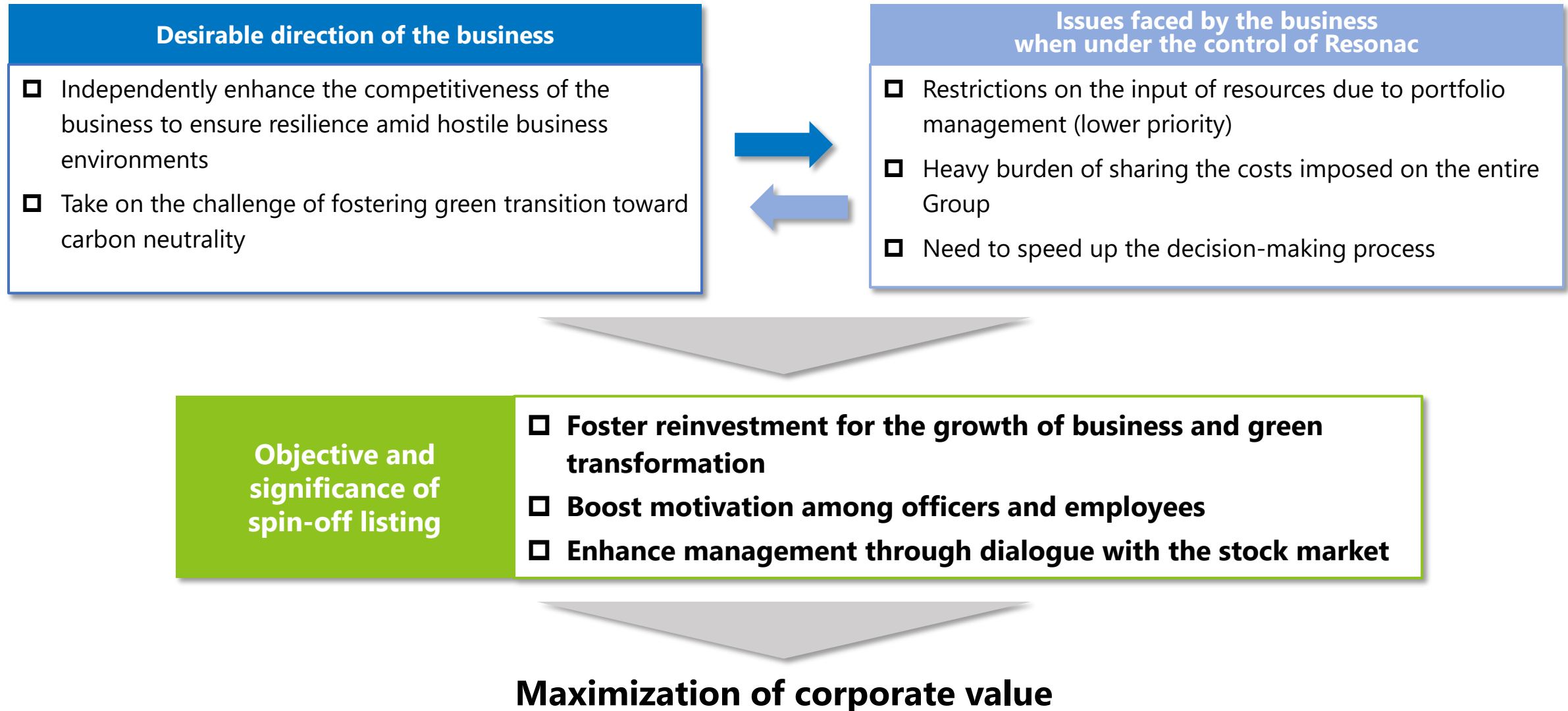
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Reference Materials



1. Objective and Significance of Spin-off Listing



2. Corporate Profile

Basic information

Company name	Crasus Chemical Inc.
Address	Head office: 2, Nakanosu, Oita City, Oita Prefecture Tokyo head office: 1-9-1, Higashi-Shimbashi, Minato-ku, Tokyo
Representative	Hirotsugu Fukuda Representative Director and President
Date of establishment	August 1, 2024
End of fiscal year	December 31
Main products	❑ Olefins (Ethylene, propylene, etc.) ❑ Organic chemicals (Vinyl acetate monomer, ethyl acetate, allyl alcohol, etc.) ❑ Synthetic resin (Polypropylene)
Net sales	333.7 billion yen (Result for the fiscal year ended December 2024)
Operating profit	8.6 billion yen (Result for the fiscal year ended December 2024)
Total assets	183.8 billion yen (as of the end of December 2024)
Number of employees	848 people (As of January 1, 2025, on a consolidated basis)



< Oita Complex >

Ideas behind the company's purpose and name

明日の暮らしを化学で支える

Support lives today and tomorrow with Chemistry



Cras ("Tomorrow" in Latin) + Sustainable

Business composition



Olefins



Organic chemicals



Synthetic resin

Note: Net sales, operating profit and total assets were calculated for Resonac's Petrochemical Business Unit on a management accounting basis.

2. Corporate Profile: Management Team

The management team is composed of managers who have abundant experience in the petrochemical industry and capital markets.



Hirotugu Fukuda
Representative Director and President
Has more than 18 years' experience in the petrochemical industry at the former Showa Denko and at Resonac



Yuichi Hashida
Member of the Board, General Manager of the Business Administration Headquarters
Has more than 23 years' experience in the petrochemical business at the former Showa Denko and at Resonac

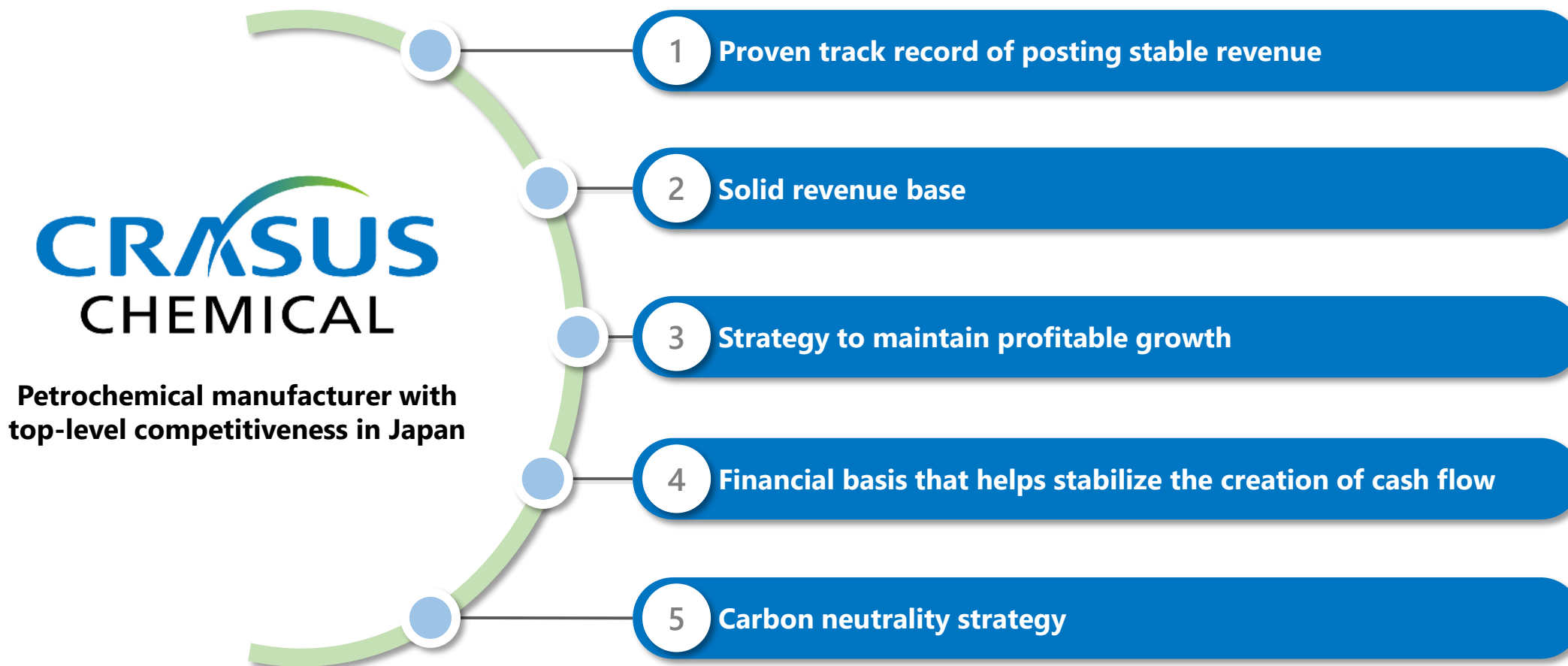


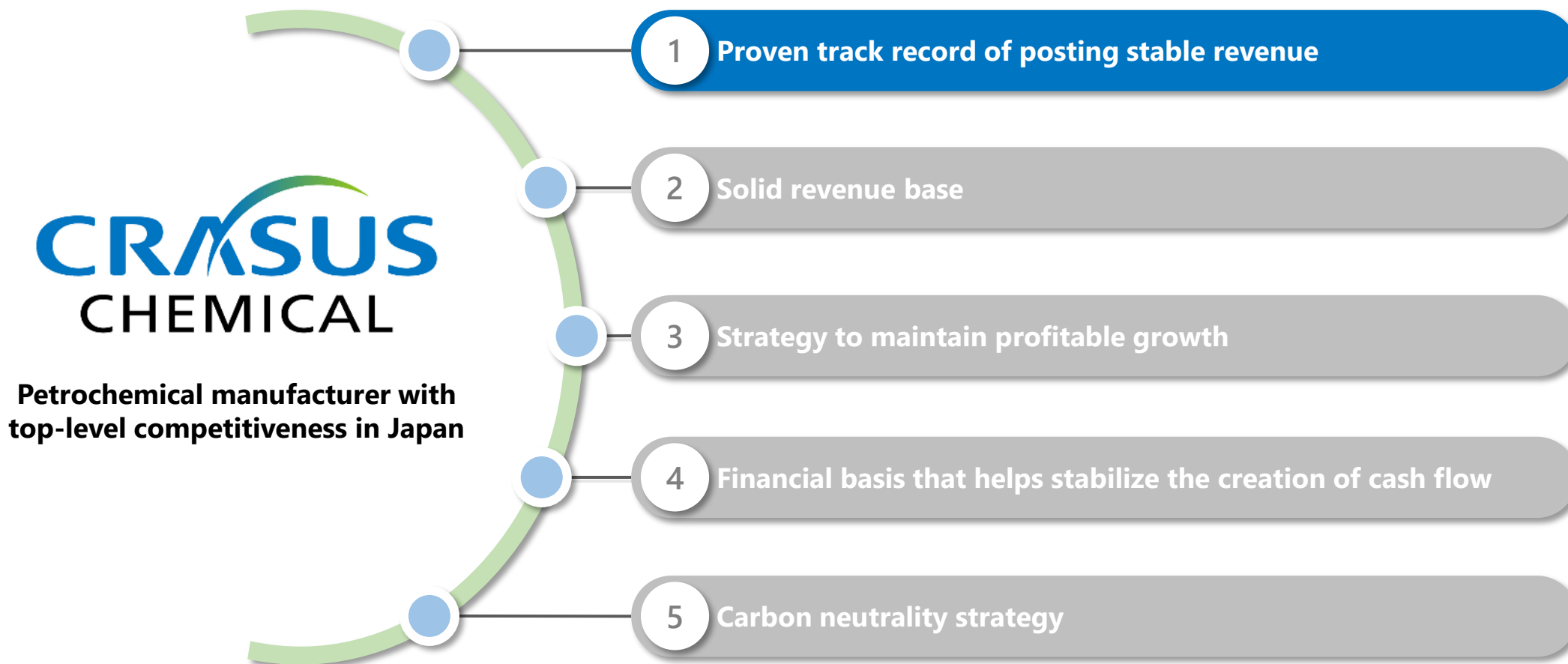
Nobuyoshi Yamada
Member of the Board, Representative of the Oita Complex
Has more than 27 years' experience in the petrochemical industry at the former Showa Denko and at Resonac



Kazuo Yokoyama
Corporate Officer, General Manager of the Finance and Accounting Headquarters
Has more than 36 years' experience in capital markets working at securities companies

3. Company Highlights



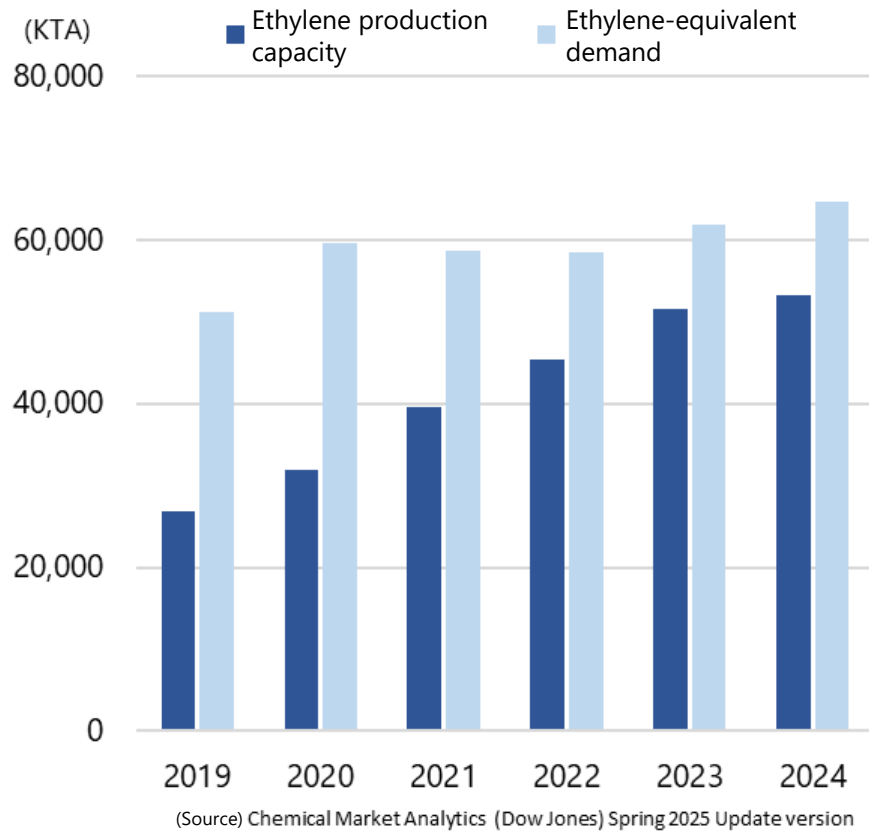


4. Market Environment and Business Performance: Situation in China and Ethylene-Naphtha Spread

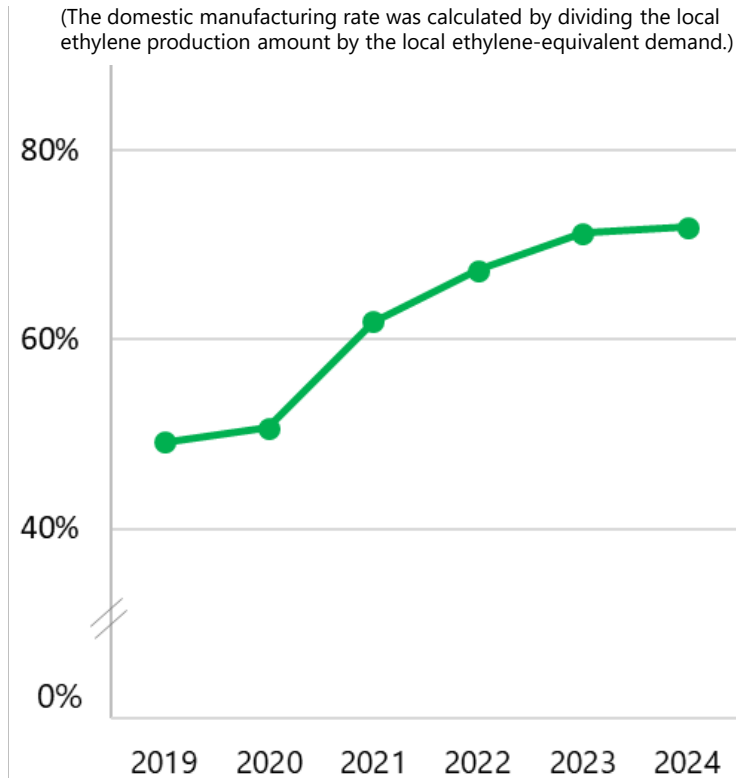
In China, in line with the construction and expansion of ethylene plants, local production capacity has expanded to almost meet local demand. The domestic manufacturing rate has accordingly risen to around 70%.

In Northeast Asia, the market price difference between ethylene and naphtha ("ethylene-naphtha spread") has continued to post negative values since around 2022.

Ethylene supply and demand in China

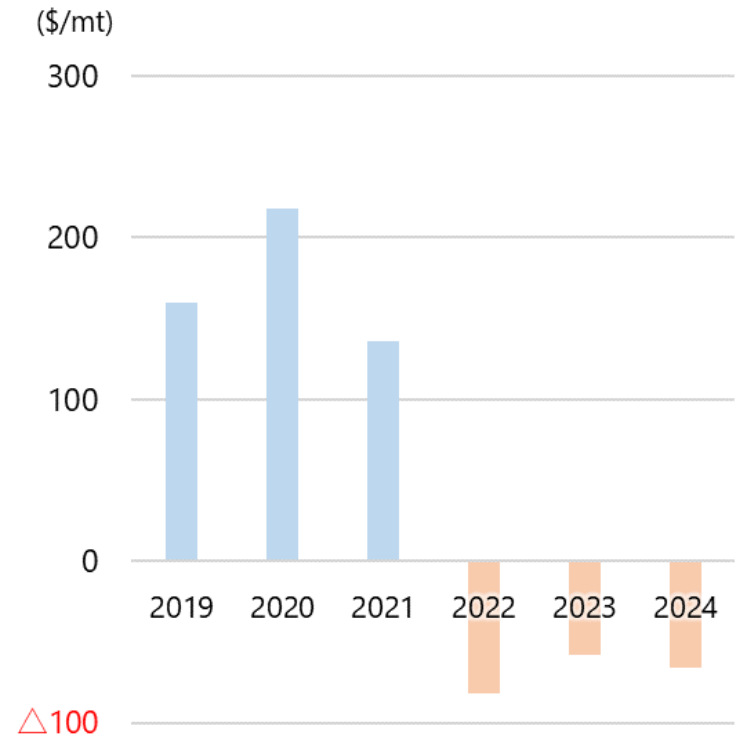


Domestic manufacturing rate for ethylene in China



Source: Created by Crasus Chemical based on Chemical Market Analytics (Dow Jones) Spring 2025 Update version

Ethylene-naphtha spread in Northeast Asia

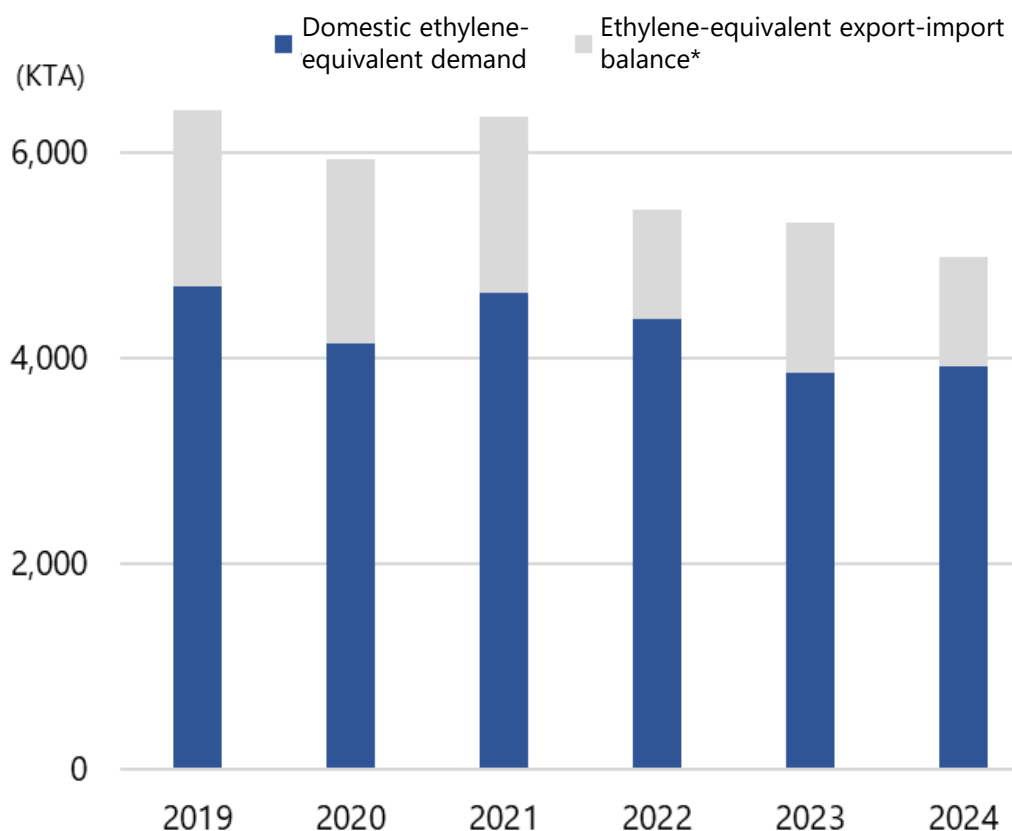


Note: Calculated based on the ethylene market trends in Northeast Asia and on MOPJ (Mean of Platts Japan) by Crasus Chemical

4. Market Environment and Business Performance: Domestic Market

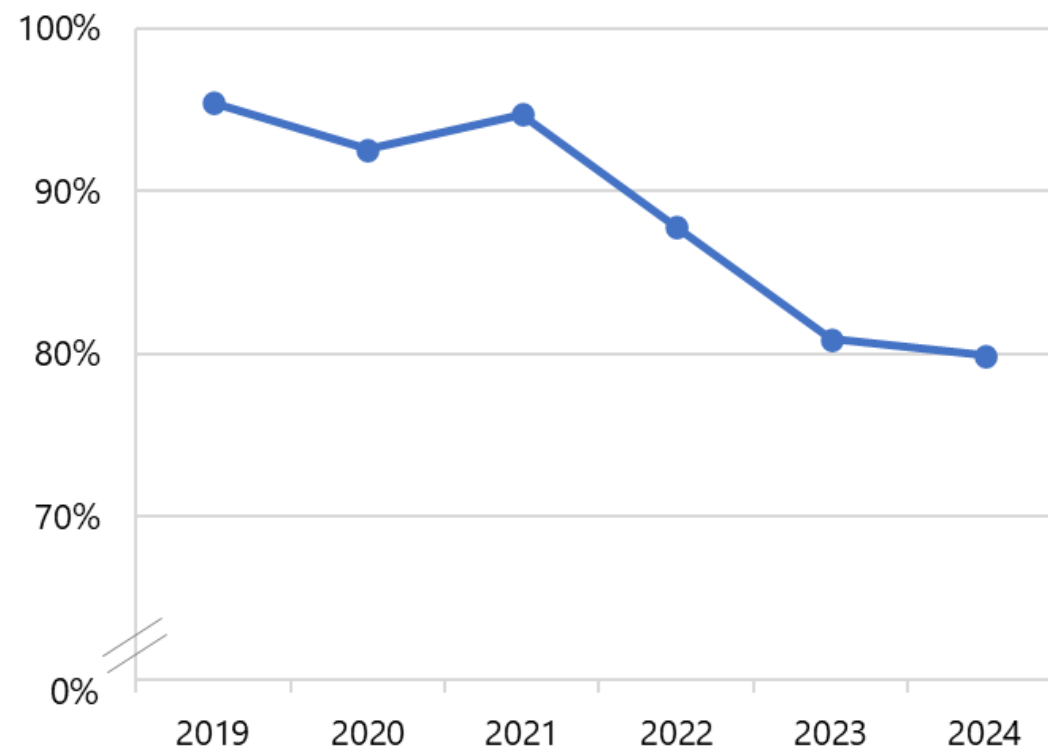
Demand for ethylene has remained below 4 million tons in Japan since 2023. The export amount also decreased. Due to the shrinkage of domestic demand and the decrease of exports, the average cracker operation rate in Japan dropped to around 80%.

Ethylene production amount in Japan



* The ethylene-equivalent export-import balance is calculated by deducting Japan's ethylene-equivalent import amount from its ethylene-equivalent export amount. If the balance is positive, it means that the export amount exceeds the import amount.

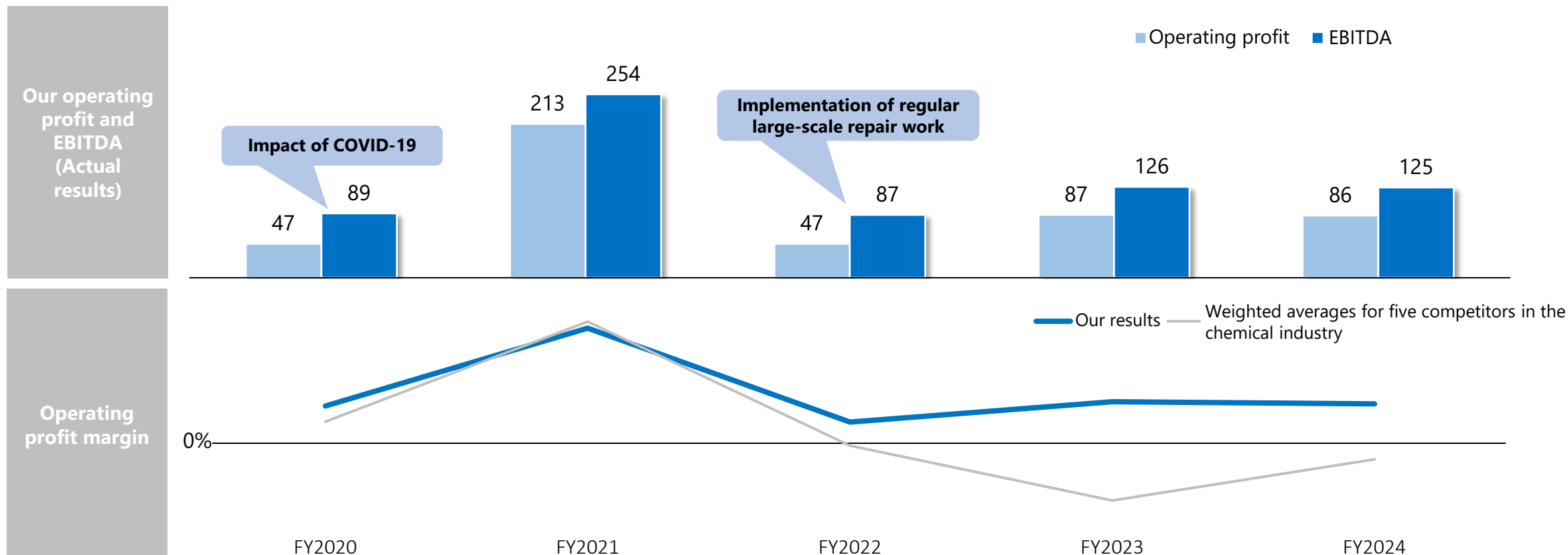
Average cracker operation rate in Japan



(Source) Data publicly announced by the Japan Petrochemical Industry Association

4. Market Environment and Business Performance

We achieved stable operating profit and EBITDA at a time when the petrochemical businesses of other Japanese companies were facing stagnant results, mainly due to a tough market environment.



Note 1: Our actual results were calculated for Resonac's Petrochemical Business Unit on a management accounting basis.

Note 2: EBITDA = Operating profit + Depreciation cost

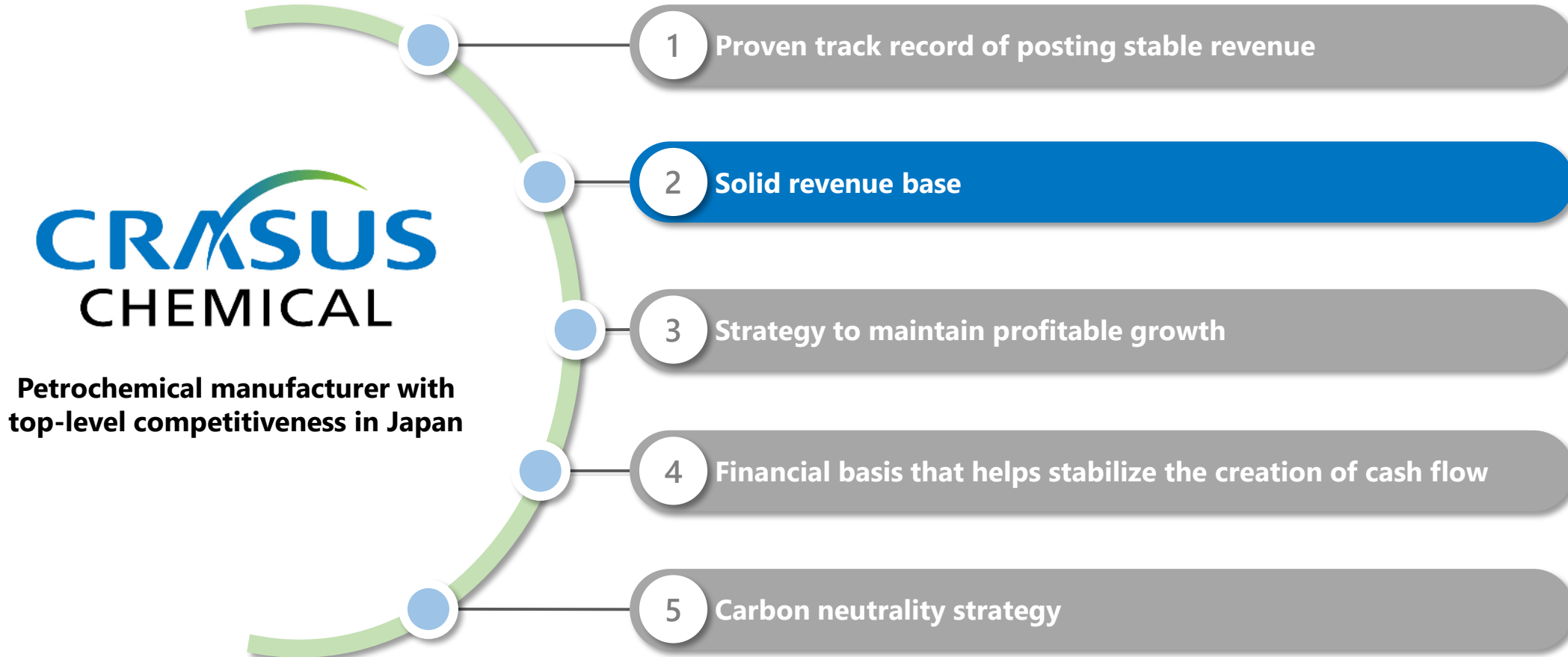
Note 3: "Other companies" means the following five companies: Mitsubishi Chemical Group Corporation, Sumitomo Chemical Company, Limited, Mitsui Chemicals, Inc., Asahi Kasei Corp. and Tosoh Corporation. Our fiscal year ends in December, while that of the aforementioned five companies ends in March.

For Mitsubishi Chemical Group Corporation, Sumitomo Chemical Company, Limited and Mitsui Chemicals, Inc., core operating profit margin was calculated based on international accounting standards, by excluding non-recurring items from operating profit (or loss), while for Asahi Kasei Corp. and Tosoh Corporation, operating profit margin was calculated based on Japanese accounting standards.

The weighted average for the five manufacturers was calculated based on their individual operating profit margin, calculated on a net sales basis.

For the operating profit margin of each of the companies, calculations were made by referring to the actual results of the segments or subsegments that were thought to own naphtha crackers. The details are as follows:

- Mitsubishi Chemical Group Corporation: "Petrochemicals" for FY2020 to FY2023 and "Materials and polymers" for FY2024
- Sumitomo Chemical Company, Limited: "Petrochemicals" for FY2020, "Essential chemicals" for FY2021 to FY2023 and "Essential & green materials" for FY2024
- Mitsui Chemicals, Inc.: "Basic materials" for FY2020 and FY2021 and "Basic & green materials" for FY2022 to FY2024
- Asahi Kasei Corp.: "Base materials" for FY2020 to FY2024
- Tosoh Corporation: "Petrochemicals" for FY2020 to FY2024



Our revenue base is built on the achievements made through past business structure reforms and is supported by the following three pillars: Competitiveness of the cracker, competitiveness of derivative products, and operational excellence.

Achievements made through past business structure reforms



Three pillars that support Crasus Chemical's business

Competitiveness of the cracker and revenue structure

- ❑ High energy efficiency
- ❑ Procurement of raw materials at reasonable prices
- ❑ Revenue structure that helps ensure stable profit

Competitiveness of derivative products

- ❑ Differentiation of functions and quality through co-creation with customers
- ❑ Large market share in Japan
- ❑ Unique manufacturing process

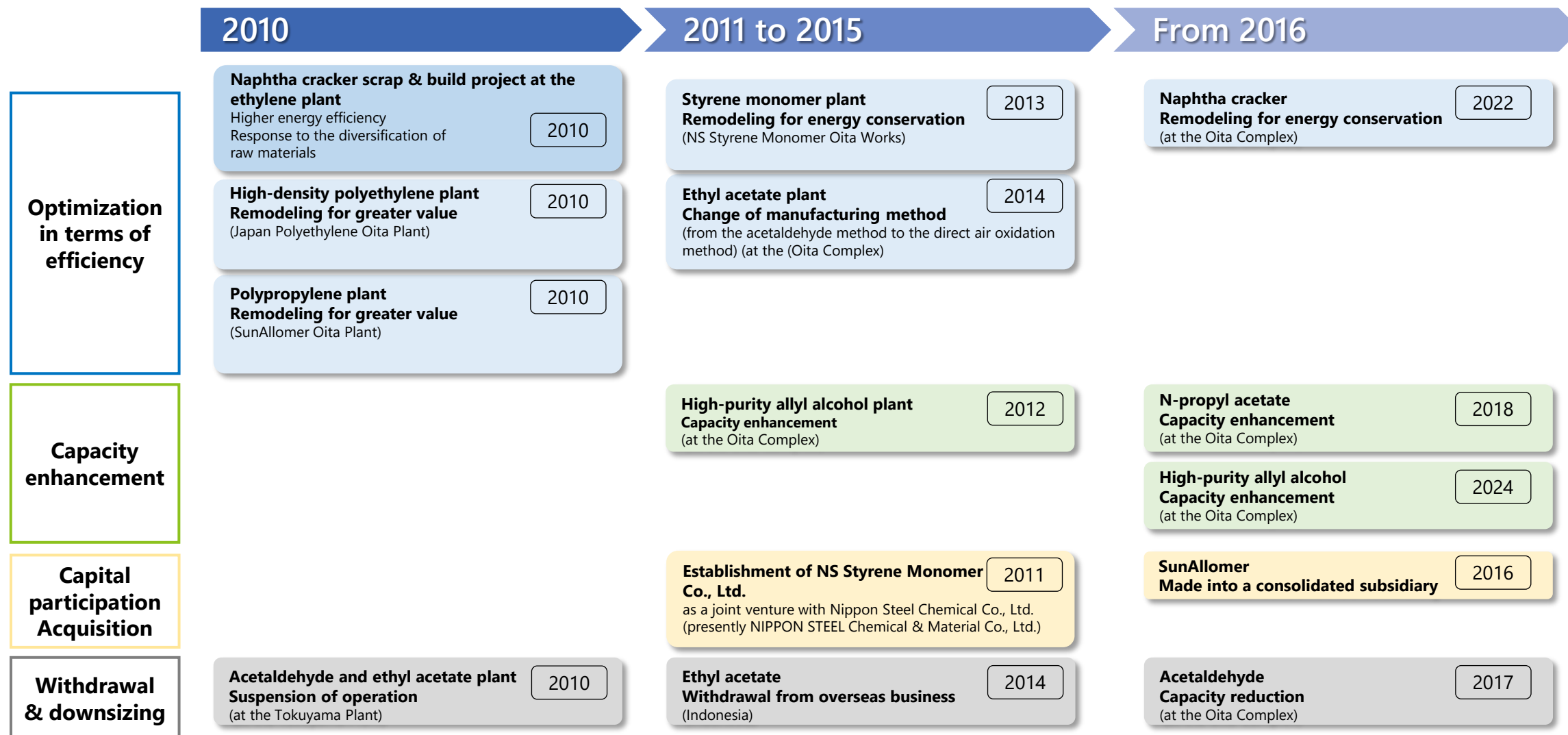
Operational excellence

- ❑ High on-site capability
- ❑ Few occupational accidents and equipment incidents
- ❑ Creation of a smart plant through digital transformation (DX)

Revenue base established for Crasus Chemical

5. Revenue Base: Past Business Structure Reforms

In the wake of the Lehman Brothers collapse, we have carried out a range of structural reforms since the 2010s, starting with the implementation of a naphtha cracker scrap & build project at the ethylene plant.



5. Revenue Base: Competitiveness of the Cracker

Our cracker boasts top-level competitiveness in Japan.

- **Achieved zero-accident operation for four consecutive years twice, based on recognition that ensuring equipment reliability and stable operation is a major premise**
- **Has achieved revenue stability by maintaining the competitiveness of the cracker, which is built on energy efficiency and raw materials procurement ability**

High equipment reliability

- Has had no problems concerning the cracker since 2014

*Except for suspension for safety reasons at time of earthquake in 2022

- Achieved zero-accident operation for four consecutive years twice

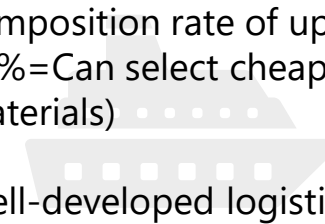
High energy efficiency

- Energy intensity within top 25% in the world (Survey by an external research organization)



Ability to procure raw materials at reasonable costs

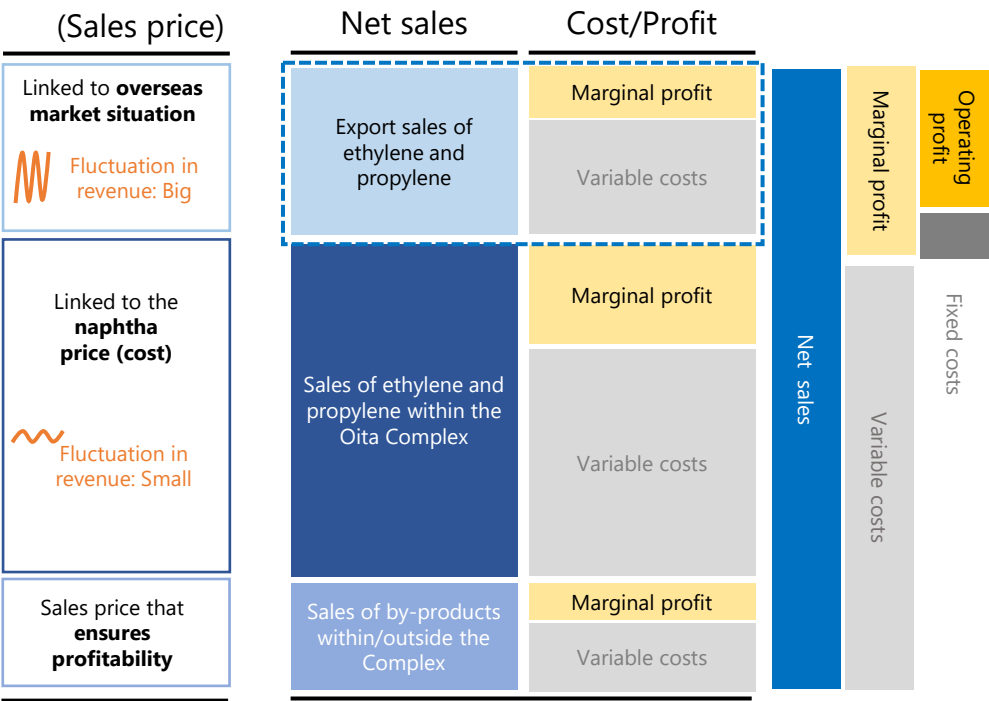
- Top-level material diversification ability in Japan (Can use non-naphtha materials at the composition rate of up to 65%=Can select cheaper materials)
- Well-developed logistics infrastructure, including a berth for exclusive use that can be used by large 100,000-ton-class ships



5. Revenue Base: Revenue Structure for the Cracker

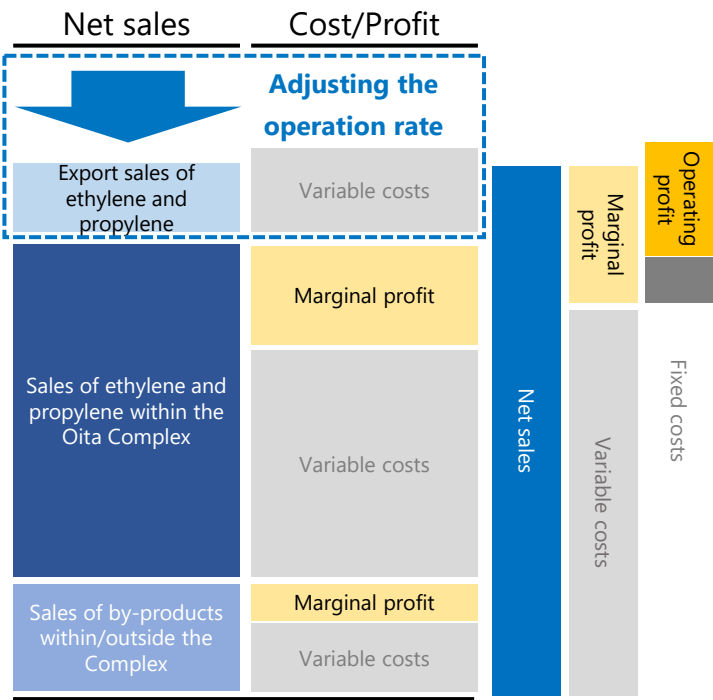
When the spread is positive for the export of ethylene and propylene

Will operate the equipment on a full scale for export sales of ethylene and propylene, thereby increasing profit



When the spread is negative for the export of ethylene and propylene

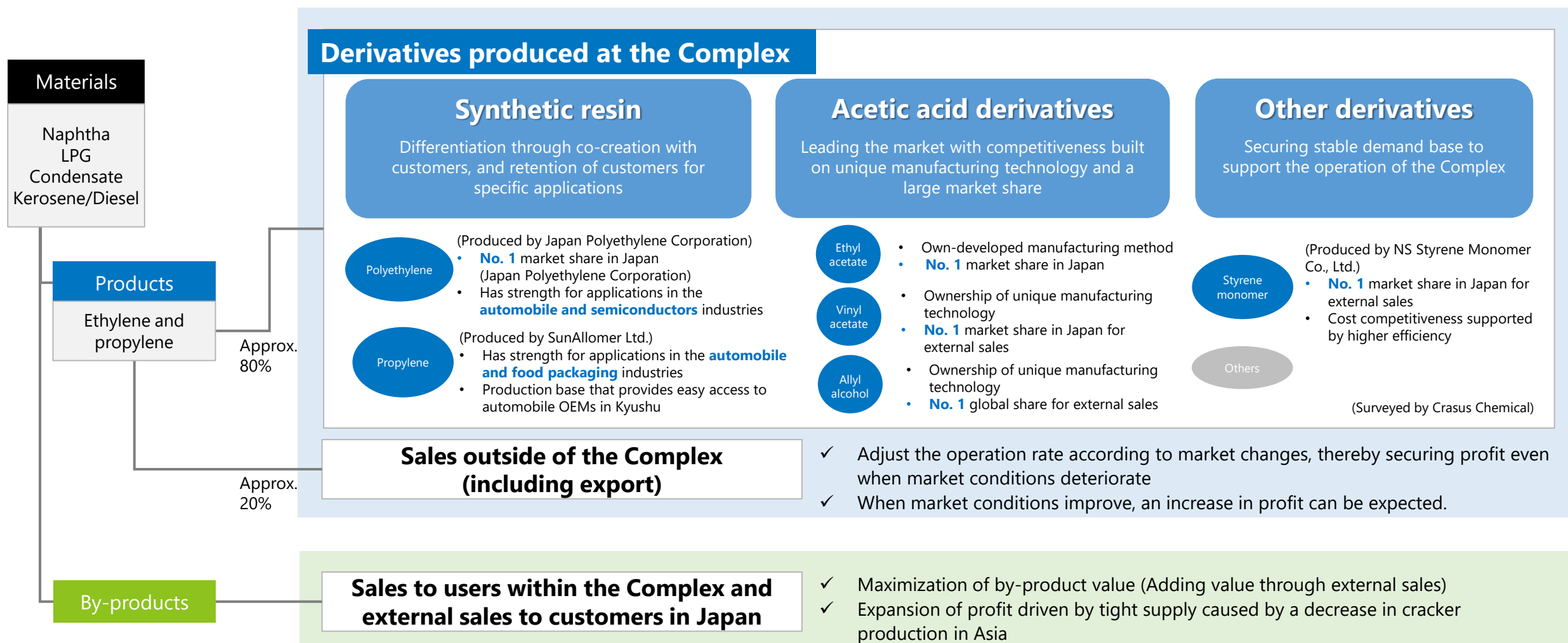
Will optimize profit by adjusting the operation rate
Even if export sales of ethylene and propylene decrease, we can sell the products to inside and outside the Complex to secure marginal profit and cover the total fixed costs.



(Note) The figures show a conceptual image of profit structures and do not represent actual data.

5. Revenue Base: Competitiveness of Derivative Products

Derivatives produced at the Oita Petrochemical Complex by a unique manufacturing process are highly competitive, being differentiated in functions and quality through co-creation with customers, have large market shares, and support the stable and high-level operation of the cracker.

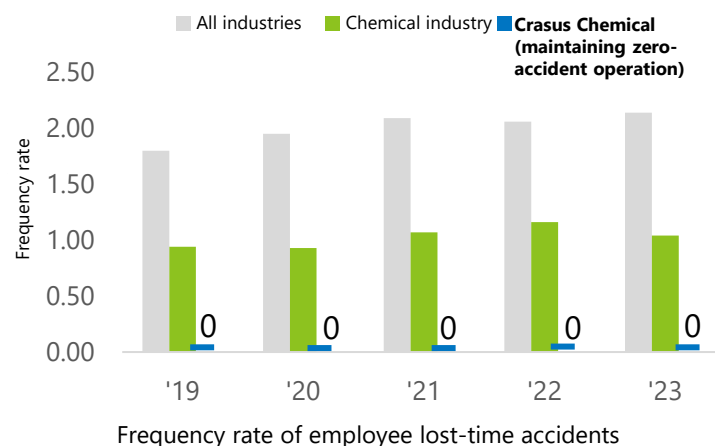


5. Revenue Base: Operational Excellence

Achieving operational excellence based on high-level on-site capabilities and by leveraging advanced and efficient systems as well as plant operation know-how

Corporate culture that gives first priority to safety

- ◆ Maintaining zero lost-time accidents
- ◆ Received the Grand Prize at the Safety Awards held by the Japan Chemical Industry Association (in 2010 and 2020)



Source: Survey on Industrial Accidents by the Ministry of Health, Labour and Welfare

Continuation of stable operation with few equipment problems

- ◆ No problems resulting in the suspension of cracker operation since 2014
(Except for suspension for safety reasons at time of earthquake in 2022)
- ◆ Continuous operation for four consecutive years: Twice
➔ Further extension of the regular repair cycle (from four to six years) planned
(Based on the premise of acquiring "accreditation A" for high-pressure gas)

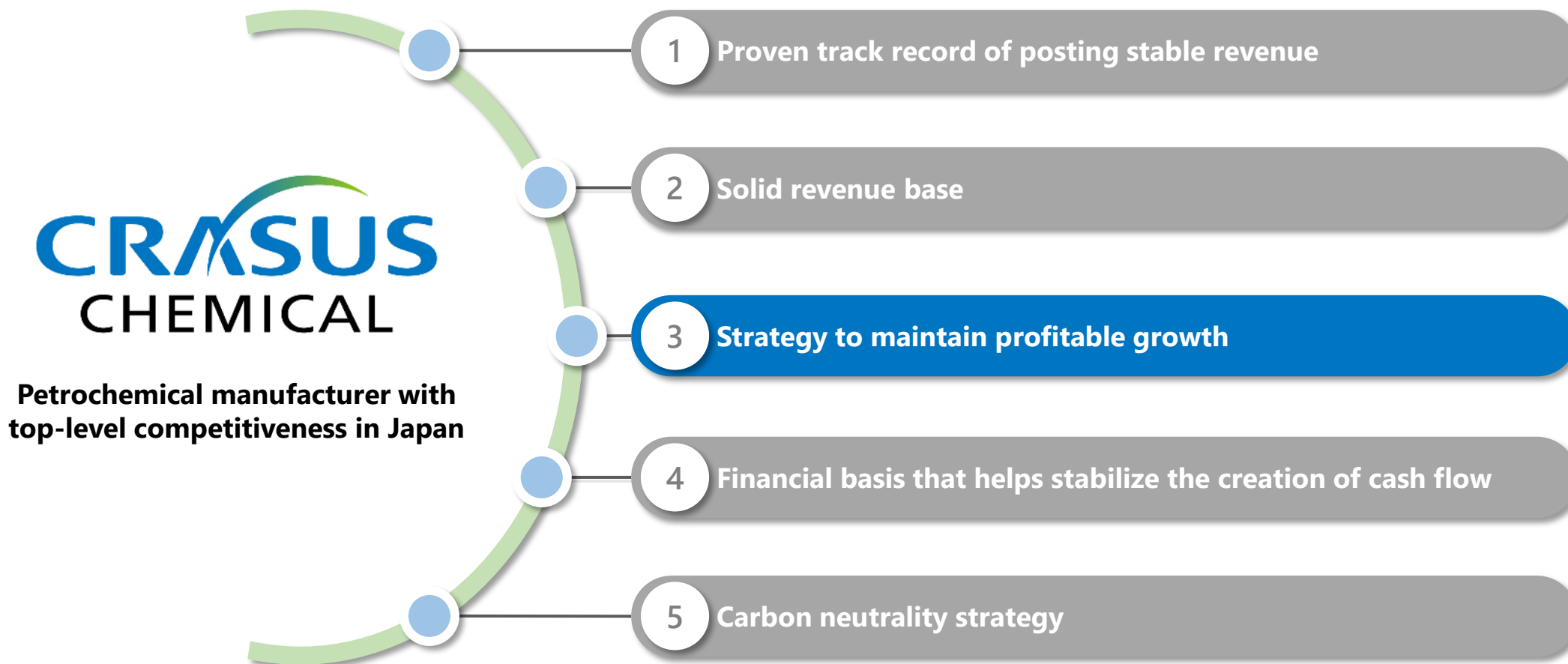


Proactive introduction and use of ICT to make the plant a smart factory

- ◆ AI-based predictive diagnosis of plant problems
- ◆ Equipment inspection using a drone



Left: Result of temperature detection by a drone
Right: Aerial image captured by a drone



Steadily implement the following three growth strategies toward 2030 or thereabouts, thereby achieving continuous growth

1

Increase profit through the enhancement of operational excellence

- Further extension of the cracker's regular repair cycle (from four to six years)
- Improvement of energy efficiency through investment in energy conservation
- Cost reduction by the improvement of catalysts for organic chemicals

2

Add value to products for sales promotion

- [Sales promotion for applications as specialty chemicals](#)
- [Development and sales promotion of high value-added polypropylene](#)
- Sales promotion of solvent products

3

Create new revenue sources

- [Enhancement of the knowledge business by the expansion of the technology licensing business](#)
- Development of new, highly profitable derivative products
- Further cooperation with other companies

6. Growth Strategy: Add value to products for sales promotion

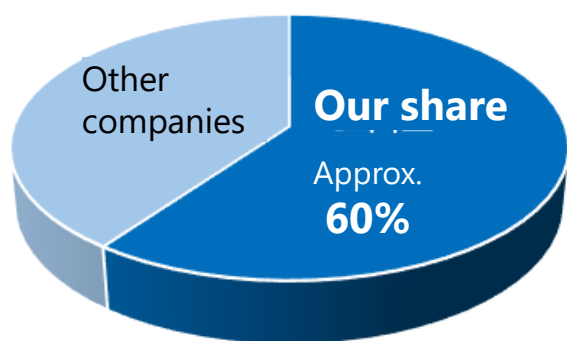
Further enhance the high value-added derivatives business, for which we have strength, to offer the value needed by the market

- [Sales promotion for applications as specialty chemicals](#)

Sales promotion of high-purity allyl alcohol

- ✓ The market is growing at an **annual rate of 5%**
- ✓ Crasus Chemical is taking the top spot in the **external sales market with a share of 60%**
- ✓ Enhanced production capacity in Aug. 2024
- ✓ Will secure supply capacity in line with the future expansion of the market to **build a solid presence in the market**

Market share in the global external sales market (2024)



(Surveyed by Crasus Chemical)

Applications as materials for silane coupling agent, urethane foam stabilizer and fragrance, monomer for eyeglass lenses, etc.



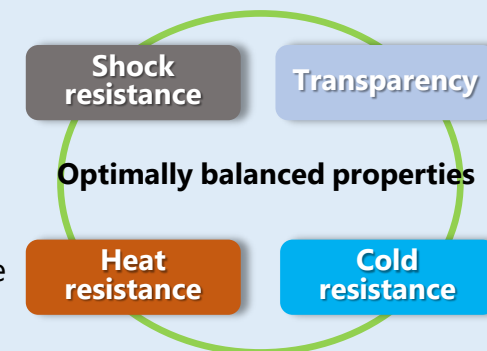
Second high-purity allyl alcohol plant

- [Development and sales promotion of high value-added polypropylene](#)

Focus on high-functionality products in the food packaging and automobile industries

Polypropylene sheets

- ✓ Targeted for application **as food containers**
 - ➔ Sales of products excellent in rigidity even at low temperatures to the frozen food container market
- ✓ **Aiming for industrial applications** in the future



Automobiles

- ✓ **Expanded needs for lighter automobile components and materials** for EVs and higher fuel efficiency
 - ➔ For products that do not need to be mixed with auxiliary materials and have high shock resistance, **achieve both weight and cost reduction to substitute other materials**

6. Growth Strategy: Creation of New Revenue Sources

Expand the acetic acid derivatives manufacturing technology licensing business and develop it into a highly profitable entity, for which investment or cost sharing is not required

Growth of overseas petrochemical markets

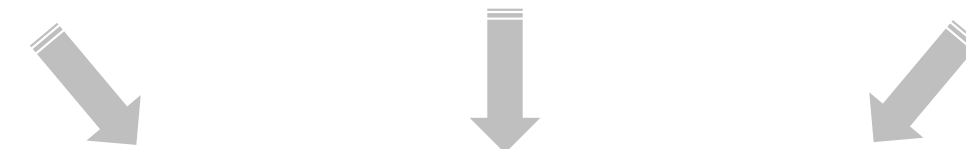
- Expanded demand for the construction of plants to produce vinyl acetate and other derivatives within the ethylene complexes newly built in emerging economies

Our business strategy

- Create a highly profitable and low-risk revenue source that does not require investment
- Collaborate with KBR, a leading engineering company in the U.S.

Accumulated technological assets

- Technology developed through the manufacture of acetic acid derivatives, and the world's highest-standard catalyst technology



**Expansion of the technology licensing business
(Receiving licensing fees while continuing catalyst sales)**

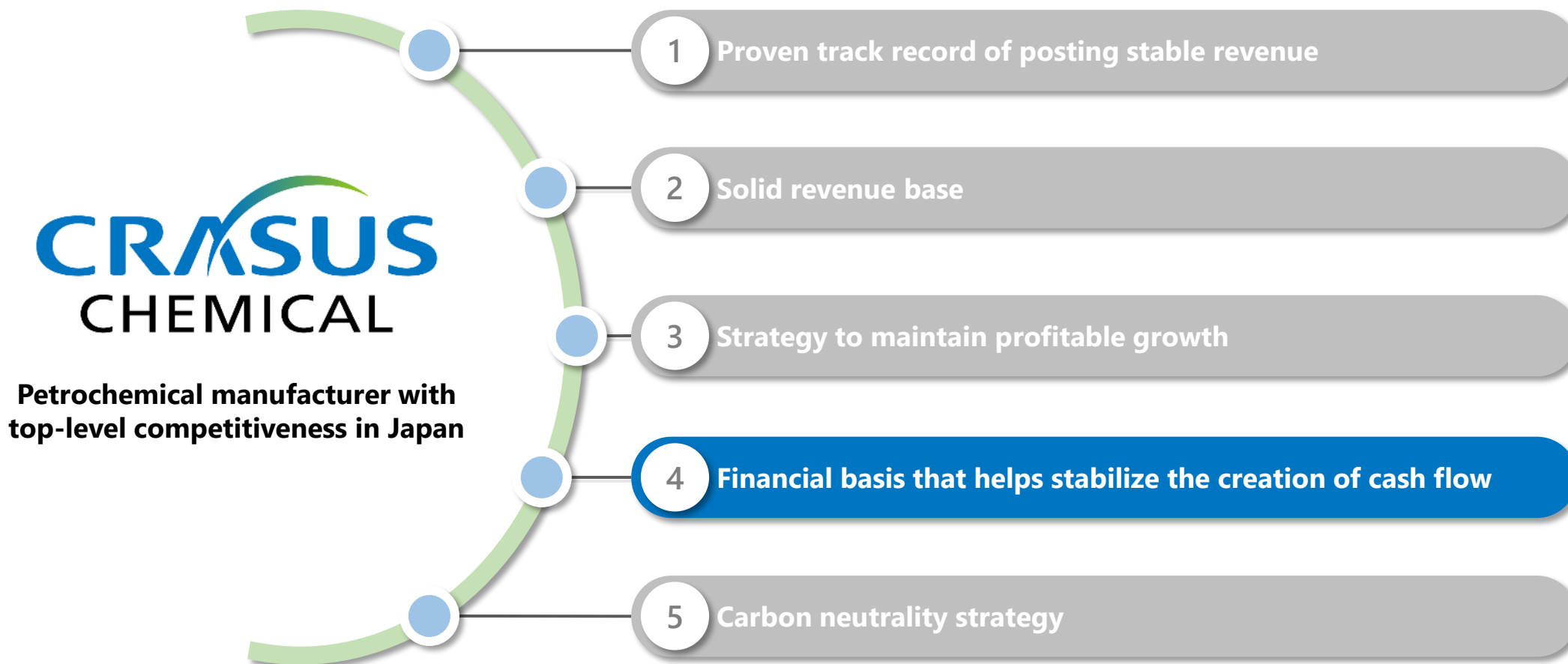
(Conclusion of licensing agreements)

2009: With JANA (Saudi Arabia) for its allyl alcohol plant (presently in operation)

2019: With Shenghong Refining Petrochemical Co., Ltd. (China) for its 300,000-ton vinyl acetate plant (presently in operation)

2022: With Asian Paints (India) for its 100,000-ton vinyl acetate plant

2025: With Yulin Chemical Co., Ltd. (China) for its 200,000-ton vinyl acetate plant



7. Financial Basis: Ability to Create Cash Flow; and Capital Discipline

Ensure stable CCC and low depreciation assets for the creation of free cash flow, and make appropriate use of debt to optimize the capital structure

Stable CCC

- ❑ The cash conversion cycle (CCC) has remained generally stable regardless of the market situation.
- ❑ Maintaining stable revenue and improving working capital helps stabilize operating cash flow (OCF) in the face of a drop in net sales.

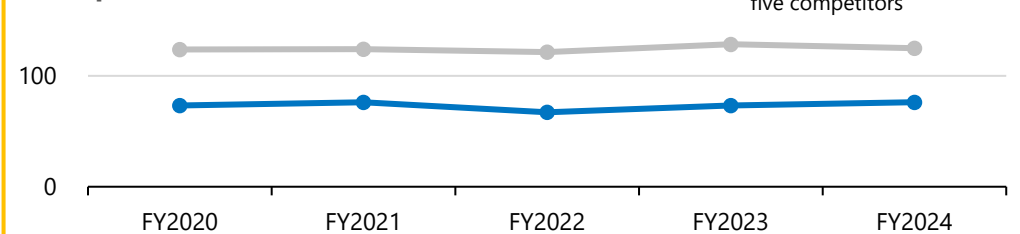
Low depreciation assets

- ❑ Following the past structural reforms, a round of investment activities to ensure competitiveness has been completed.
- ❑ The book value of depreciation assets has remained stable at a relatively small amount, in line with the progress of depreciation.

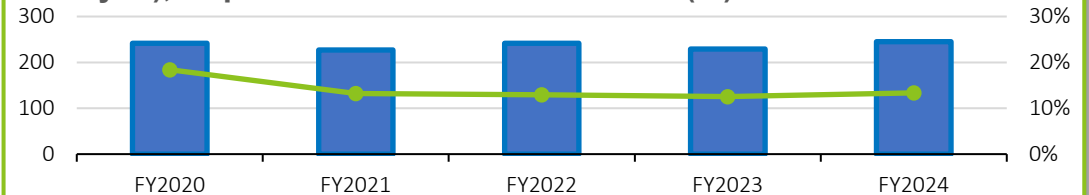
Optimal capital structure

- ❑ With stable CCC and low depreciation assets as a result of rigorous investment decisions, can make appropriate use of debt to establish a disciplined capital structure

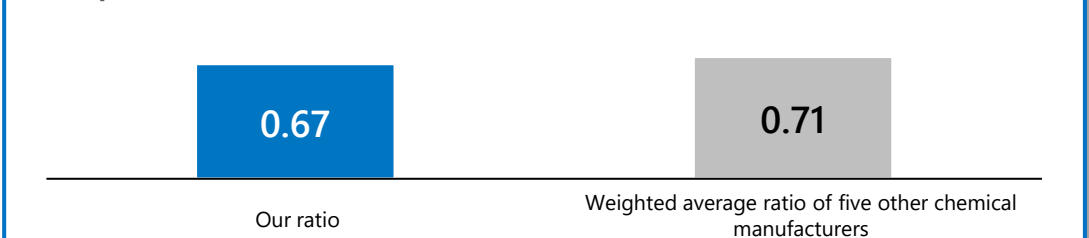
Competitors' CCC



Book value of depreciation assets (Unit: 100 million yen), Depreciation assets/Total assets (%)



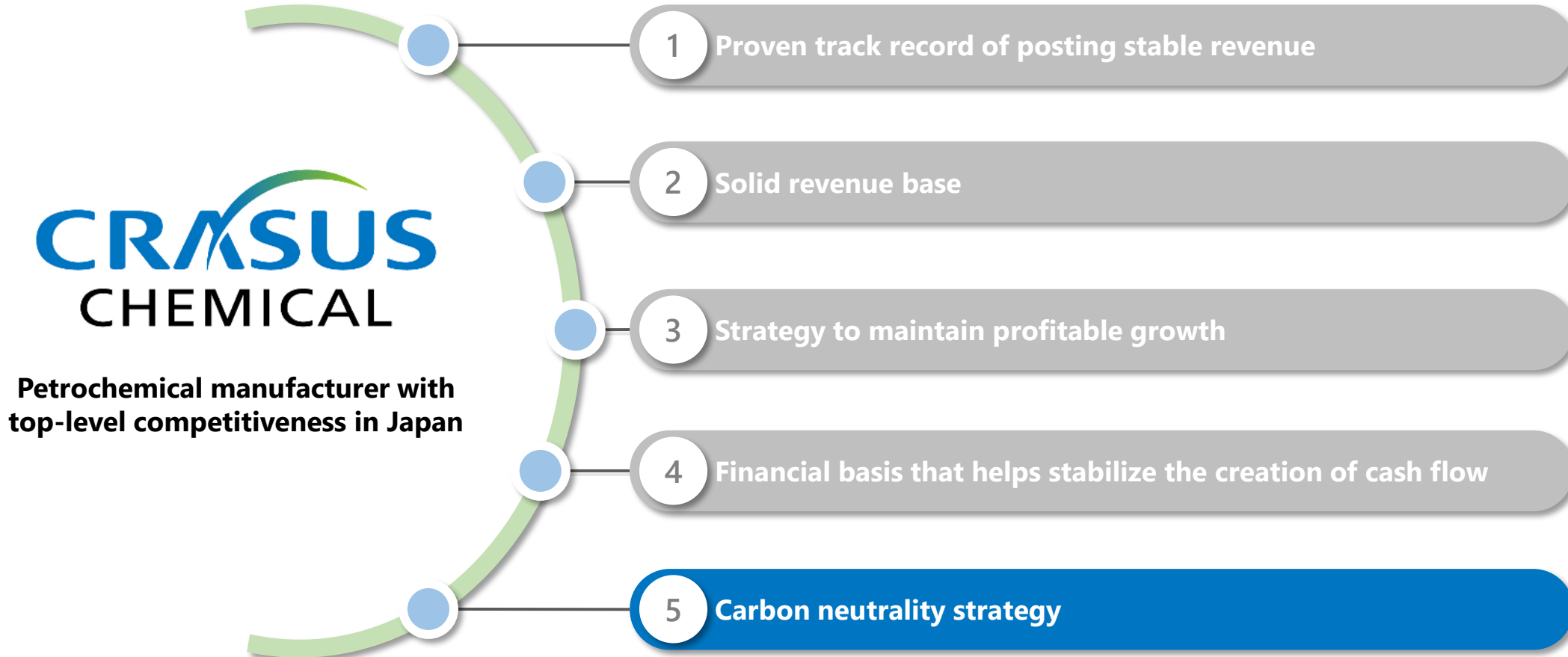
Net D/E ratio



Note 1: The book value of depreciation assets and the actual cash conversion cycles are shown for Resonac's Petrochemical Business Unit on a management accounting basis.

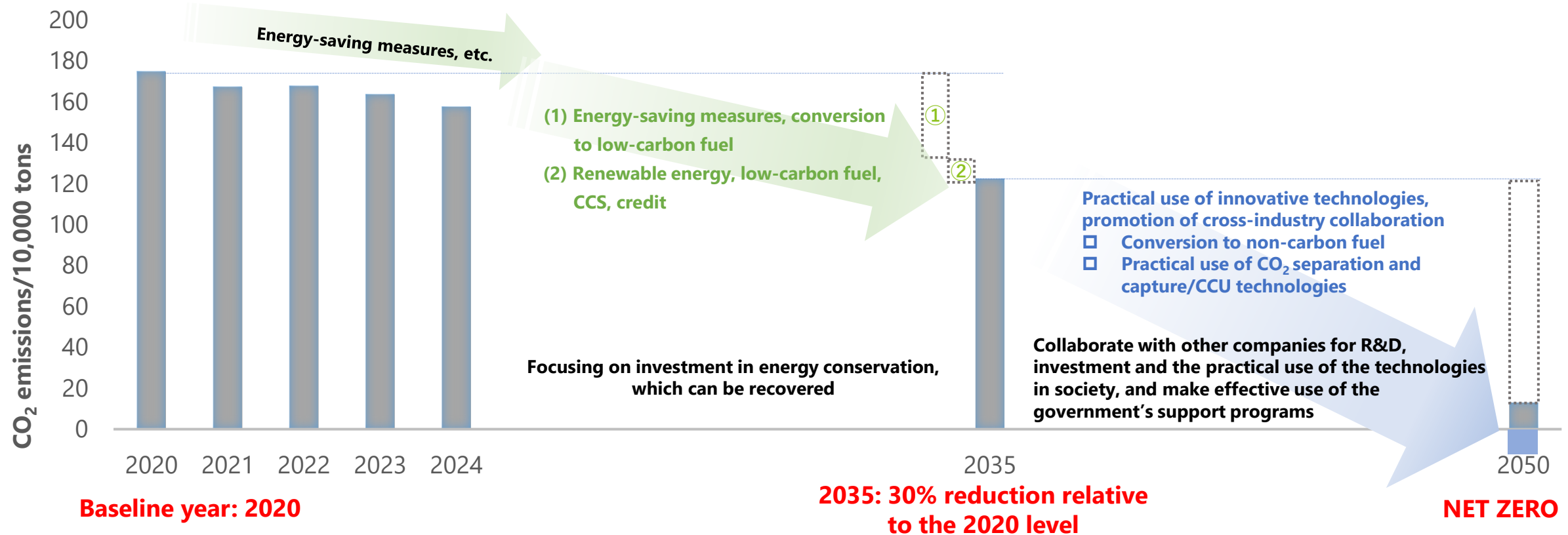
Note 2: The five other chemical manufacturers are Mitsubishi Chemical Group Corporation, Sumitomo Chemical Company, Limited, Mitsui Chemicals, Inc., Asahi Kasei Corp. and Tosoh Corporation. CCC was calculated as follows: (1) Accounts receivable turnover period + (2) Inventory turnover period - (3) Accounts payable turnover period.

(1), (2) and (3) were calculated as follows: (1) Term-end balance of accounts receivable / (Net sales / 365 days); (2) Term-end balance of inventory assets / (Cost of goods sold / 365 days); and (3) Term-end balance of accounts payable / (Cost of goods sold / 365 days). The weighted average CCC of the five competitors was calculated by using each of the companies' net sales for (1); and cost of sales for (2) and (3). For net D/E ratio, our ratio and the weighted average ratio of the five companies were calculated by using interest-bearing debt, cash and deposits, and equity capital as of the end of December 2024 and as of the end of March 2025, respectively.



8. Carbon Neutrality Strategy: Reduction of Our Own CO₂ Emissions and Monetization of Environmental Value

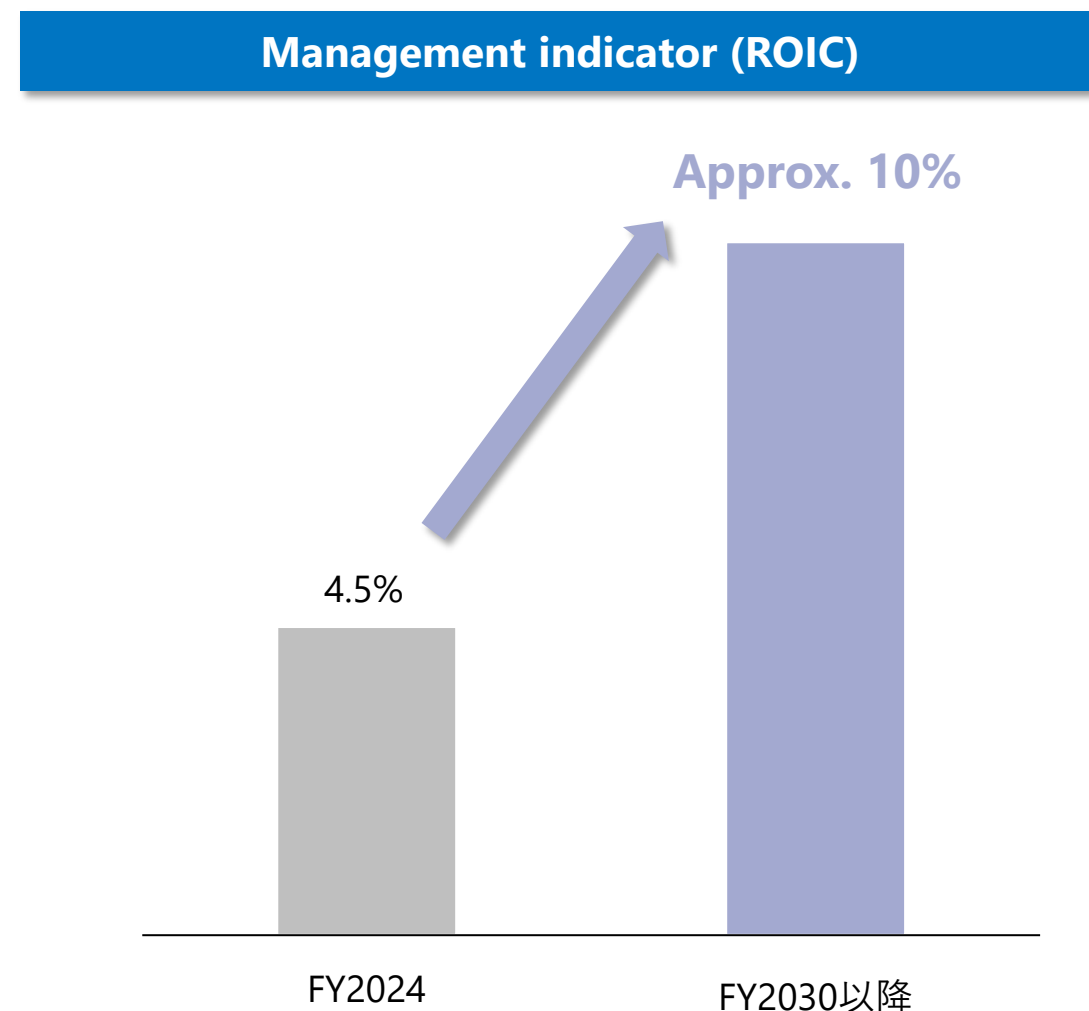
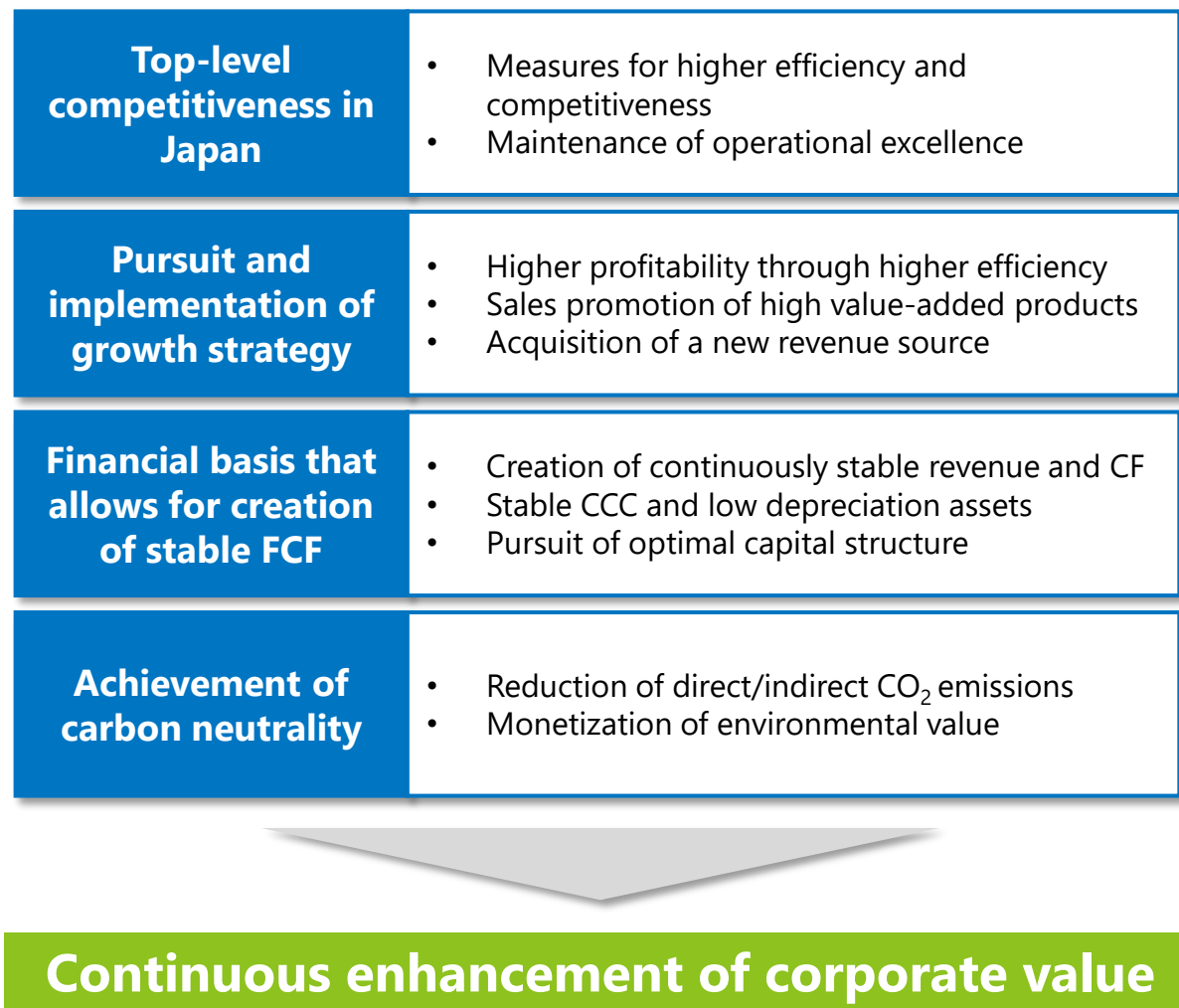
Reduction targets for direct/indirect CO₂ emissions (Scope 1+2)



Measures for the monetization of environmental value (Scope 3, environment-friendly products)

- Creation and expansion of low-CO₂ products (Expanded use of bio-/recycled materials, CO₂ separation & capture and use of the CO₂ for the manufacture of chemical products)
- Creation and expansion of environment-friendly products (Smaller and lighter plastic products, non-fossil plastic and other substitutes, and products that offer functions/value that contribute to environmental impact reduction)

9. Crasus Chemical's Vision



Note: Our ROIC for FY2024 was calculated for Resonac's Petrochemical Business Unit on a management accounting basis as follows: Operating profit × (1 – Corporate tax rate) / (Operating capital + Fixed assets)

Reference Materials

Companies Comprising the Oita Petrochemical Complex

The Petrochemical Complex is composed of 12 companies, including Crasus Chemical

Company	Products	Capital relationship with Crasus Chemical	
SunAllomer Ltd.	Polypropylene	65.0% Crasus Chemical Inc.	ENEOS 35.0%
Tsurusaki Kyodo Doryoku K.K.	Steam, electricity, water	40.5% Crasus Chemical Inc.	10 other companies 59.5%
Japan Polyethylene Corporation	Polyethylene	42.0% Japan Polyolefins Corporation (Investment ratio of Crasus Chemical: 65%)	Japan Polychem Corporation 58.0%
NS Styrene Monomer Co., Ltd.	Styrene monomer, benzene, toluene, xylene	49.0% Crasus Chemical Inc.	NIPPON STEEL Chemical & Material Co., Ltd. 51.0%
Japan Elastomer Co., Ltd.	Synthetic rubber	25.0% Crasus Chemical Inc.	Asahi Kasei Corporation 75.0%
Shikoku Ryutan Corporation	Carbon disulfide	23.4% Crasus Chemical Inc.	Shikoku Chemicals Corporation and one other company 76.6%
Tsurusaki Sanso Center, K.K.	Oxygen gas, nitrogen gas	50.0% Crasus Chemical Inc.	Taiyo Nippon Sanso Corporation 50.0%
NOF Corporation	Polybutene		
Toagosei Co., Ltd.	Acrylic acid		
Resonac Corporation	Ethylene vinyl acetate emulsion		
Resonac Gas Products Corporation	Liquefied carbon dioxide		

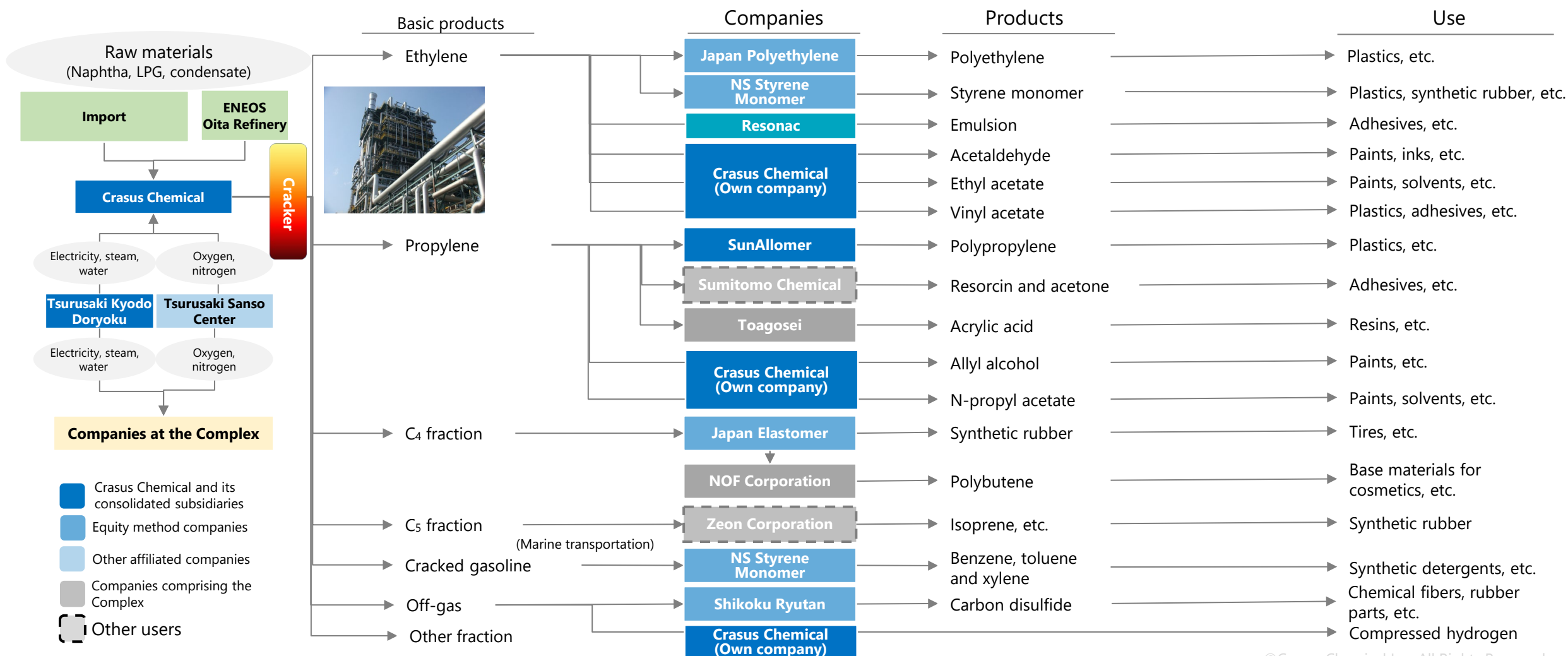


Legend:

- Crasus Chemical's consolidated subsidiary
- Crasus Chemical's equity method company
- Other affiliated company of Crasus Chemical

Overview of Petrochemical Products Manufacturing Flow at Crasus Chemical

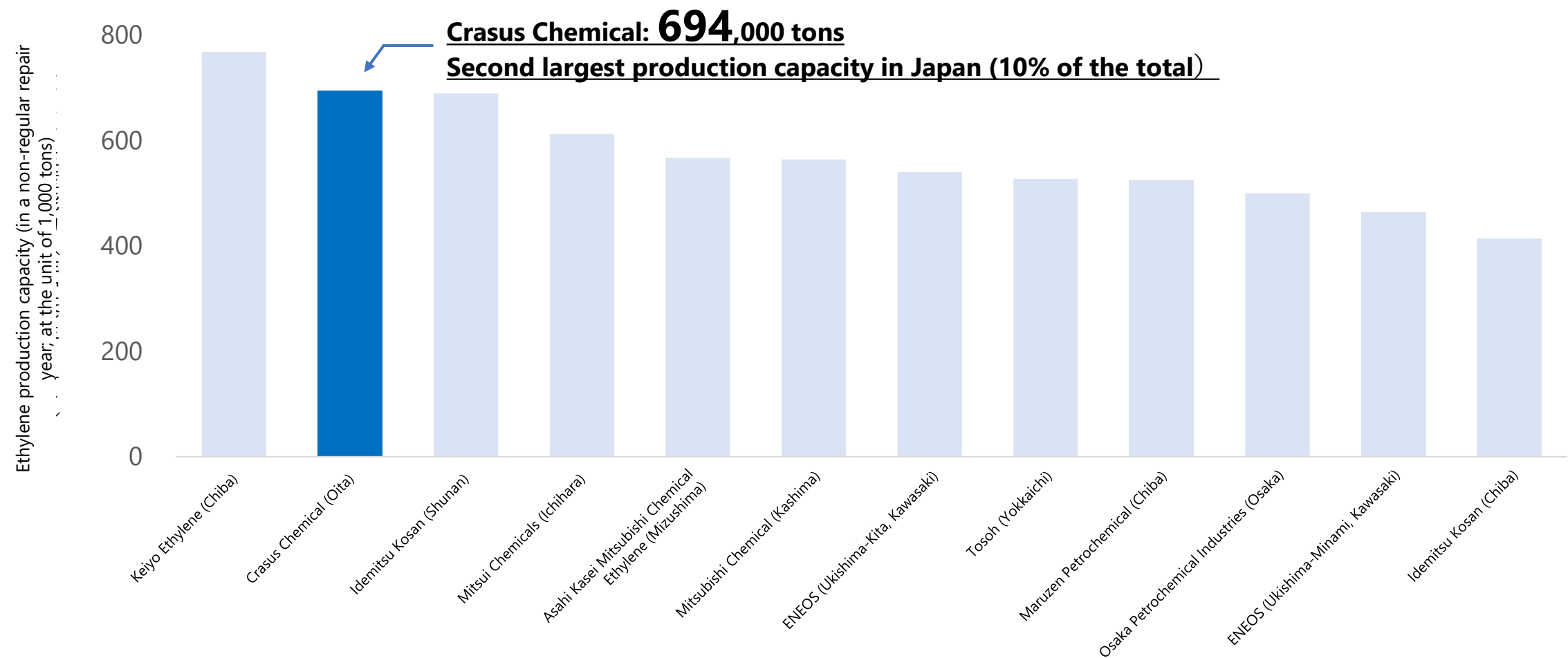
The Petrochemical Complex is composed of the basic cracker equipment and plants for derivatives. Products manufactured using the cracker are supplied via pipelines for use as materials for derivatives and also for use as fuel to be consumed within the Complex.



Our petrochemical business is now based mainly in Oita, Japan.

	Japan	(Synthetic Resin)	Overseas
1950s to 1970s	1964 Start of the operation of production equipment for acetaldehyde and acetic acid 1969 Completion of the Oita Petrochemical Complex 1977 Completion of the Oita Petrochemical Complex phase 2 construction work	1957 Showa Denko K.K. enters the petrochemical business. (Kawasaki)	
1980s to 2000s	2000 Integration of Oita C1 & C2 plants into one	1995 Establishment of Japan Polyolefins Corporation (Capital contributed by Nippon Oil Corporation and Showa Denko K.K.) 1999 Establishment of Montell SDK Sunrise (MSS) (Capital contributed by Montell Group, Nippon Oil Corporation and Showa Denko K.K.) Transfer of polypropylene business from Japan Polyolefins Corporation 2001 MSS changes its name to SunAllomer Ltd. (Capital contributed by Lyondell Basell, Nippon Oil Corporation and Showa Denko K.K.) 2003 Establishment of Japan Polyethylene Corporation (Capital contributed by Japan Polychem, Mitsubishi Corporation Plastics and Japan Polyolefins) 2005 Business transfer by three synthetic resin processing companies in Japan (Hymold Co., Ltd., Heisei Polymer Co., Ltd. and Showa Denko Plastic Products Co., Ltd.)	1992 Start of investment in the business of Chandra Asri (Indonesia) with the provision of technological support 1997 Start of the operation of ethyl acetate production equipment in Indonesia 2001 Sale of the synthetic resin injection molding business 2005 Complete withdrawal from the Chandra Asri (Indonesia) business
From 2010s	2010 Scrap and build project for Oita C1 Plant cracker 2010 Withdrawal from the petrochemical business at the Tokuyama Plant 2011 Establishment of NS Styrene Monomer Co., Ltd. (Capital contributed by Nippon Steel & Sumikin Chemical and Showa Denko K.K.) 2014 Change of the manufacturing method at the Oita ethyl acetate plant 2025 The petrochemical business of Resonac Corporation is spun off and begins operation as Crasus Chemical Inc.	2016 SunAllomer Ltd. is made a consolidated subsidiary	2014 Withdrawal from the ethyl acetate business in Indonesia

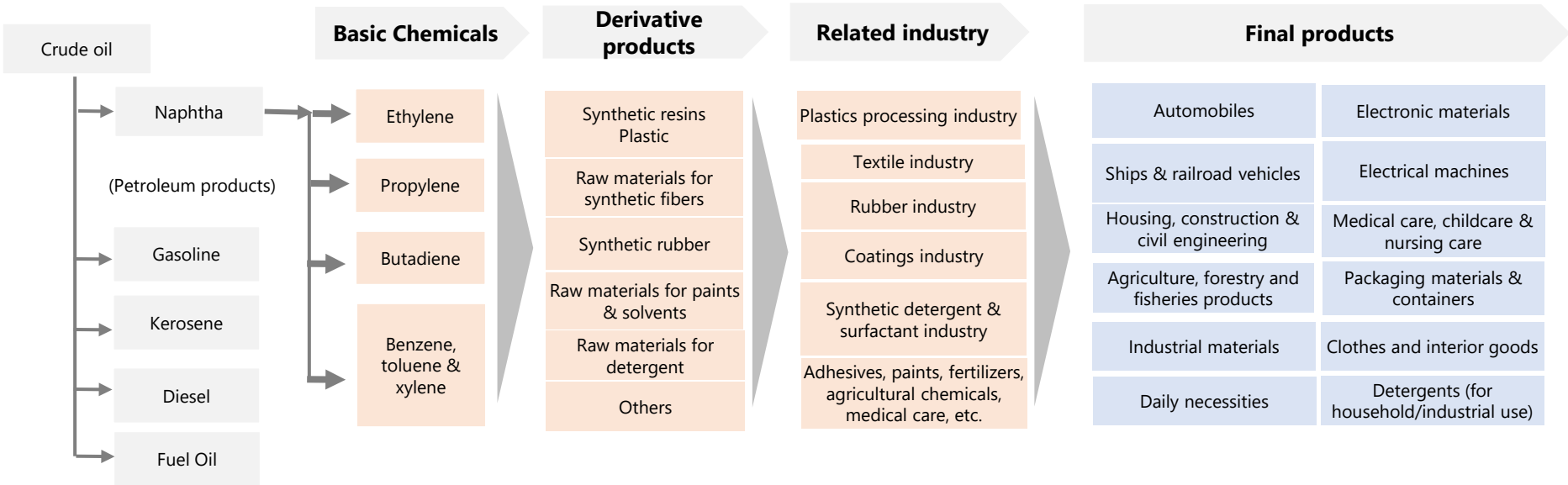
**Our cracker boasts the second largest production capacity in Japan.
It supports the regional economy as the only cracker in Kyushu.**



Source: Annual Survey of Petrochemical Industries in Japan, The Heavy & Chemical Industries News Agency

Positioning of the Petrochemical Industry in Japan

The petrochemical industry supplies products that are indispensable for daily life and industry. It is also a core industry in the upstream section of many supply chains and is important for the country's economic security.



Located in the upper section of a supply chain that starts with materials and ends with final products

Manufactures basic chemicals, synthetic resin and other materials and supplies them to manufacturers located in the downstream section

Contribution to economy and employment

The petrochemical and related industries account for around 10% of the shipment value and number of employees of the entire manufacturing industry

Helps the manufacturing industry enhance its international competitiveness

Supplies products that can meet diverse needs in the automobile, semiconductor and other important growth industries

Contribution to the affluent lives of consumers

Packages & containers, daily necessities, clothes and other household items, pipes, cable coatings, paints and other industrial materials that are used widely in society.

Source: Report on the present situation and challenges of the chemical industry published by the Material Industries Division, Manufacturing Industries Bureau, Ministry of Economy, Trade and Industry, and the announcements made by the Japan Chemical Industry Association (Partially processed by Crasus Chemical)

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