

Results Presentation FY2020 H1

(April 1 - September 30, 2020)

Nov 5, 2020

MITSUBISHI GAS CHEMICAL COMPANY, INC.

TSE : 4182

INDEX

1 | Impact of Novel Coronavirus

2 | FY2020 H1 Results

3 | FY2020 Forecast

4 | Results and Forecasts by Segment

5 | Topics

1 | Impact of Novel Coronavirus

2 | FY2020 H1 Results

3 | FY2020 Forecast

4 | Results and Forecasts by Segment

5 | Topics

Impact of Novel Coronavirus

- Continue to utilize such measures as remote work to reduce infection risk of the novel coronavirus while maintaining our business by placing the utmost priority on ensuring the safety of employees, their families, customers and other stakeholders.
- Impact on operating results:
 - Demand for such offerings as automotive-related products stagnated in the 1st half. Although demand is expected to recover in the 2nd half, the pace of global economic recovery is less robust than initially estimated at the beginning of the fiscal year. Therefore, the negative impact of the pandemic on 2nd-half operating results is expected to be somewhat greater than the initial forecast.
 - Financial impact on 1st-half operating income: initial forecast: approx. – ¥10.0 billion; revised forecast: approx. – ¥8.0 billion

<Impact of Novel Coronavirus (H1・H2)>

H1 Results

- A decline in demand for automotive-related products resulted in the lower sales volume of engineering plastics, foamed plastics (JSP), MXDA and other products.
- Despite the aforementioned negative factors, the financial impact of the pandemic was smaller than the initial forecast thanks to reductions in selling, general and administrative (SG&A) expenses, such as travel expenses.

H2(F)

- Given such factors as the expected recovery in demand for automotive-related products, we forecast improvement in the showings of engineering plastics, JSP, MXDA and other products compared with the 1st half.
- As the pace of global economic recovery is less robust than initially estimated, the financial impact of the pandemic on 2nd-half operating results is expected to be somewhat greater than the initial forecast.

1 | Impact of Novel Coronavirus

2 | **FY2020 H1 Results**

3 | FY2020 Forecast

4 | Results and Forecasts by Segment

5 | Topics

FY2020 H1 Summary

- ◆ Decreases in net sales and operating income. On the other hand, ordinary income grew thanks mainly to improvement in equity in earnings of affiliates. Moreover, lower tax-related expenses* and other positive factors led to expansion of year-on-year growth in net income for the period

*A ¥3.0 billion decrease in tax-related expenses reflecting deductions of losses on valuation of stocks of affiliates recorded in the past fiscal years.

- ◆ Operating Income :

(+) (1) Higher sales volume of optical polymers and electronic materials, (2) lower raw material and fuel prices, and (3) a decrease in SG&A expenses

(-) (1) Impact of the novel coronavirus pandemic and (2) lower market prices of general-purpose products

- ◆ Ordinary income: Increased due to improvement in equity in earnings of affiliates reflecting such factors as the absence of one-off costs (¥7.8 billion) in connection with a joint venture in Saudi Arabia.
- ◆ Comparisons with the previous forecasts: Despite the lower sales volume of such products as basic chemicals, each profit indicator was more robust than expected due mainly to lower SG&A expenses compared with the previous forecasts.
- ◆ Dividend: interim 35 yen (same with the previous forecast and previous year)

FY2020 H1 Results

【JPY in billions】

	H1 FY2020	H1 FY2019	Changes		H1 FY2020 (Previous Forecast*)
			Amount	%	
Net Sales	266.6	303.3	▲36.7	▲12.1	270.0
Operating income	14.3	16.0	▲1.6	▲10.4	12.0
(Equity in earnings of affiliates)	(1.7)	(▲3.8)	(5.5)	-	(0.5)
Ordinary income	16.5	11.6	4.8	41.5	12.0
Net income before taxes	17.7	14.4	3.3	23.3	13.0
Net income attributable to owners of the parent	14.2	8.1	6.1	75.0	9.0
* Announced on Aug 6, 2020					
E P S (J P Y)	68.54	38.45			
F X (J P Y / U S D)	107	109			

Figures shown on this and the following pages are rounded down to the closest 0.1 billion. Percentages are rounded off to the closest whole number.

FY2020 H1 Non-Operating & Extraordinary Items

【JPY in billions】

	FY2020 H1	FY2019 H1	Change
Non - Operating items	2.1	▲4.3	6.5
Equity in earnings of affiliates	1.7	▲3.8	5.5
Financial income or losses	1.6	1.4	0.1
Foreign exchange gains or losses	▲0.0	▲0.9	0.8
Others	▲1.0	▲1.0	▲0.0
Extraordinary income	1.5	3.0	▲1.5
Gains on sales of investment securities	1.2	1.5	▲0.2
Gain on sales of non-current assets	0.2	-	0.2
Gain on step acquisitions	-	1.0	▲1.0
Insurance claim income	-	0.5	▲0.5
Others	-	-	-
Extraordinary losses	▲0.3	▲0.3	0.0
Loss compensation	▲0.3	-	▲0.3
Accident loss	-	▲0.1	0.1
Loss on disposal of non-current assets	-	▲0.1	0.1
Others	-	-	-

- **Equity in earnings of affiliates**

Methanol +6.3(FY2019:one-off costs (¥7.8 billion))

Engineering plastics▲1.2 etc

- **Gains on sales of investment securities**

Sales of Cross-Shareholdings etc

FY2020 H1 Balance Sheets

【JPY in billions】

	Sep30, 2020	Mar31, 2020	Change
Current assets	366.3	358.6	7.6
Cash and deposits	111.4	78.2	33.2
Trade notes and Accounts receivable	120.6	141.2	▲20.6
Inventories	115.6	114.7	0.8
Others	18.5	24.3	▲5.7
Non-current assets	416.2	413.0	3.1
Tangible assets	238.8	239.8	▲0.9
Intangible assets	10.2	10.5	▲0.3
Investments and other assets	167.1	162.6	4.5
Total assets	782.5	771.7	10.8

	Sep30, 2020	Mar31, 2020	Change
Liabilities	226.3	223.5	2.7
Trade note and accounts payable	60.3	70.7	▲10.3
Interest-bearing debt	97.5	74.7	22.8
Others	68.4	78.1	▲9.6
Net assets	556.2	548.1	8.0
Shareholders' equity	501.4	494.3	7.1
Accumulated other comprehensive income	▲0.1	▲1.7	1.6
Non controlling interest	54.9	55.6	▲0.7
Total liabilities and net assets	782.5	771.7	10.8
E q u i t y R a t i o	64.1%	63.8%	

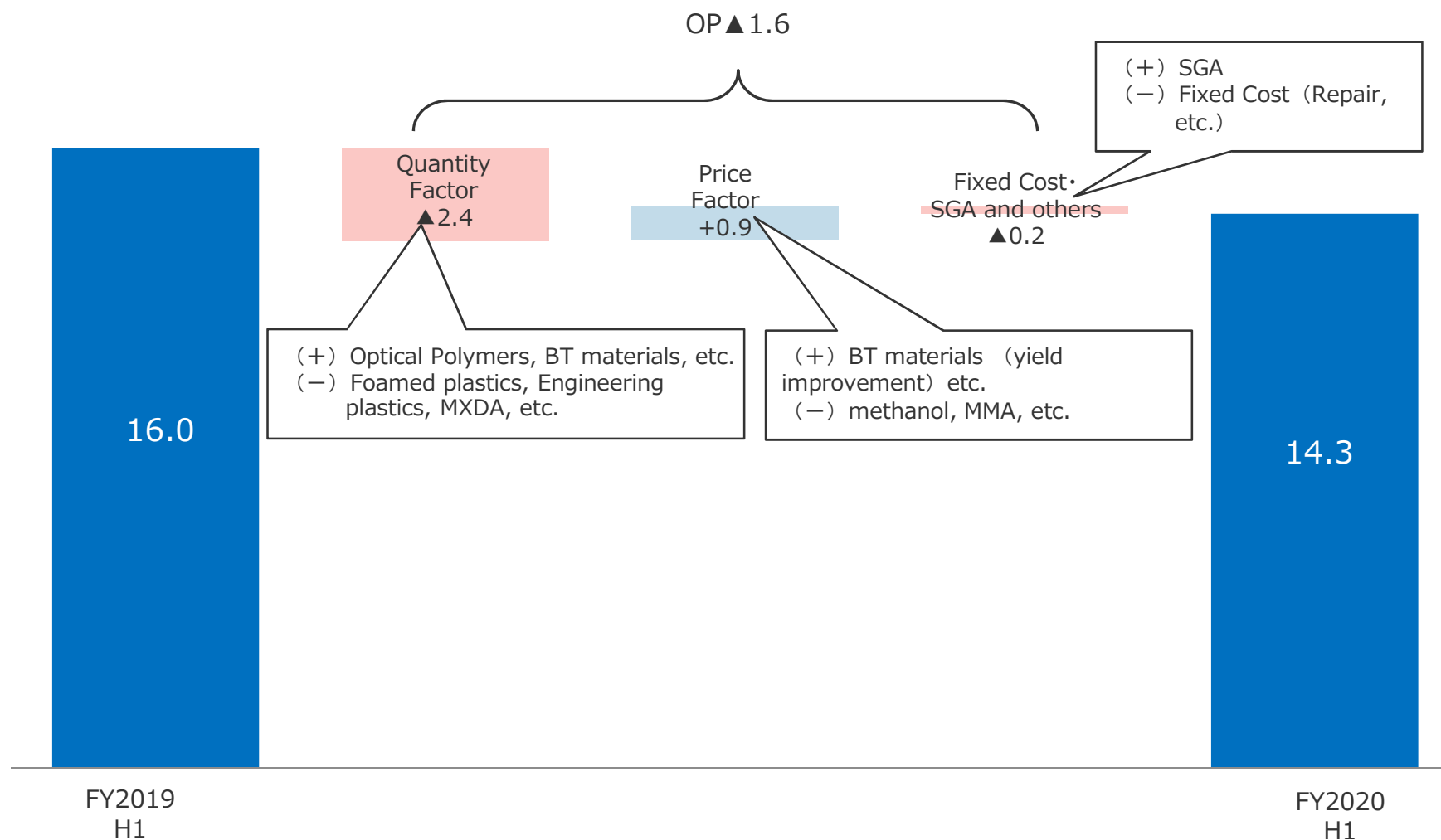
FY2020 H1 Cash Flows

【JPY in billions】

	FY2020 H1	FY2019 H1	Change
Operating activity cash flow	33.0	38.6	▲ 5.5
Investing activity cash flows	▲16.5	▲21.9	5.3
Free cash flows	16.5	16.7	▲0.2
Financing activity cash flows	14.8	▲23.5	38.3
Effect of exchange rate change on cash and cash equivalents	▲1.2	▲1.8	0.5
Net increase (decrease) in cash and cash equivalents	30.0	▲8.6	38.7
Cash and cash equivalents at beginning of period	70.0	80.3	▲ 10.3
Increase in cash and cash equivalents resulting from inclusion of subsidiaries in consolidation	-	0.2	▲ 0.2
Cash and cash equivalents at end of period	100.0	71.9	28.1

FY2020 H1 Increase and Decrease Factors of Operating Income

【JPY in billions】



1 | Impact of Novel Coronavirus

2 | FY2020 H1 Results

3 | FY2020 Forecast

4 | Results and Forecasts by Segment

5 | Topics

Points for FY2020 Forecasts

- ◆ Comparisons with the previous forecasts:
Operating income forecast: unchanged from the previous forecast
ordinary income forecast: + ¥4.0 billion
- ◆ Operating income (comparisons with the previous forecasts): 1st half: +¥2.3 billion; 2nd half: -¥2.3 billion
(+) A decrease in SG&A expenses (1st half), etc.
(-) Overall downward revision of sales forecasts, etc.
- ◆ Ordinary income: (comparisons with the previous forecasts): Equity in earnings of affiliates: +¥4.0 billion (methanol: +¥3.0 billion on revised market prices, tax refunds, etc.; engineering plastics: +¥1.0 billion)
- ◆ Year-End dividend(Forecast): will be 35 yen per share, the same amount as the year-earlier figure and previous forecast

FY2020 Forecast

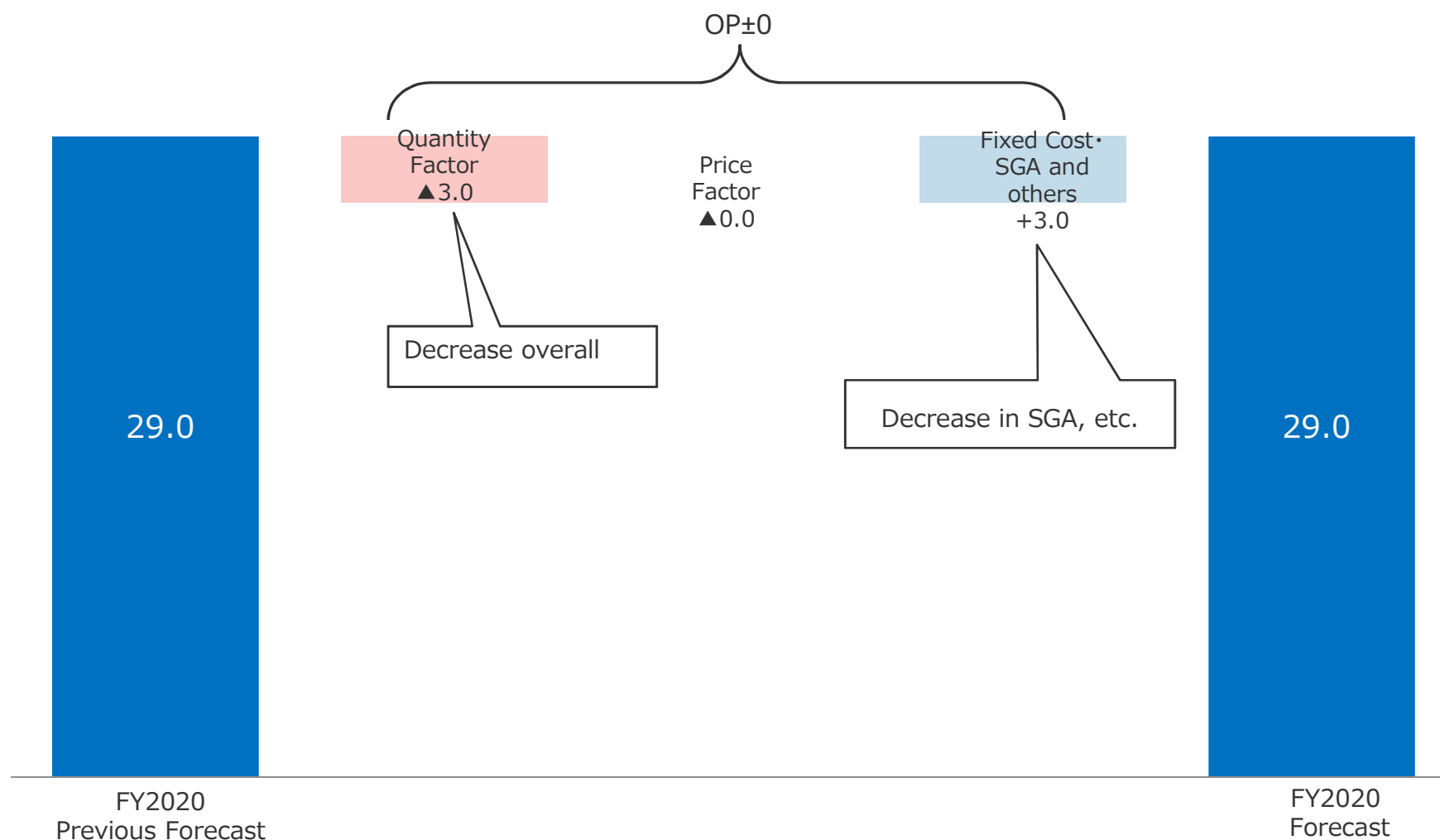
【JPY in billions】

	FY2020 Forecast	FY2020 Previous forecast *	Change		FY2019 Result
			Amount	%	
Net Sales	550.0	560.0	▲10.0	▲1.8%	613.3
Operating income	29.0	29.0	—	—	34.2
(Equity in earnings of affiliates)	(3.0)	(▲1.0)	(4.0)	—	(▲1.2)
Ordinary income	30.0	26.0	4.0	15.4%	31.1
Net income before taxes	31.0	27.0	4.0	14.8%	34.3
Net income attributable to owners of the parent	24.0	17.0	7.0	41.2%	21.1
E P S (J P Y)	115.39	81.74			100.50
R O E (%)	4.8	3.5			4.3
F X (J P Y / U S D)	106	106			109

* Announced on Aug 6, 2020

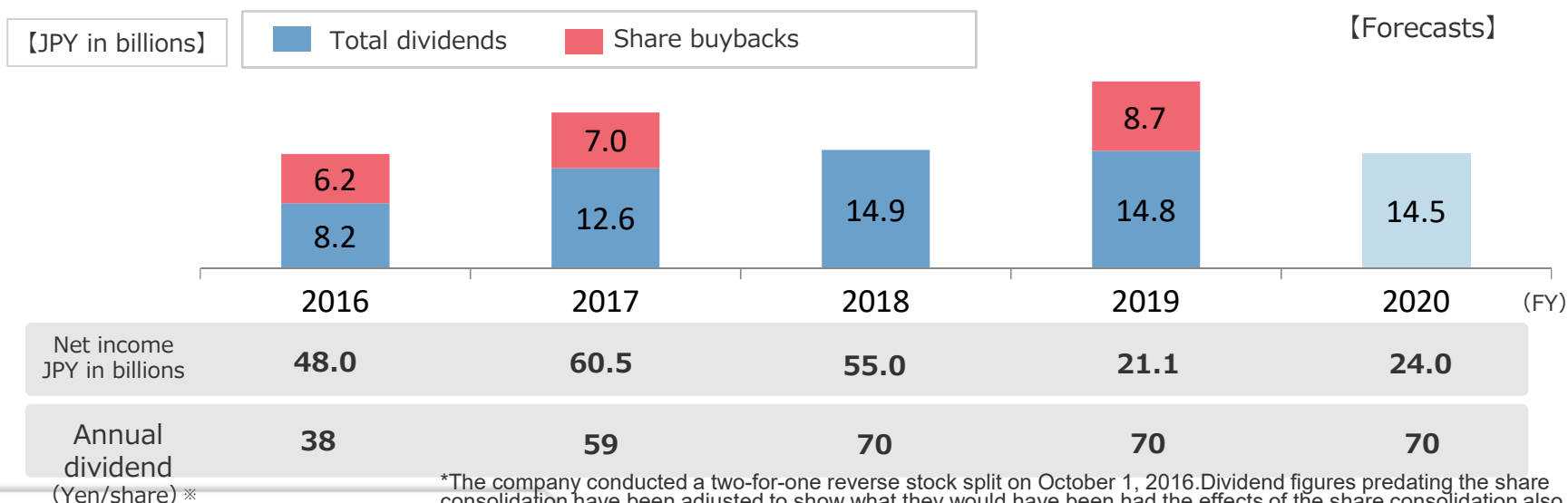
FY2020(F) Increase and Decrease Factors of Operating Income

【JPY in billions】



Shareholder return policy / Shareholder return

- The MGC Group places topmost management priority on enhancing corporate value.
 - The Company will continuously provide stable dividends, while taking operating performance and other factors into account when determining the distribution amount.
 - The Company's basic policy is to improve capital efficiency and enhance shareholder returns by flexibly purchasing treasury stock while considering the levels of internal reserves and returns to shareholders.
- Full-year dividends for FY2020 expected to total ¥70 per share in line with the aforementioned policy of maintaining a steady stream of dividends



1 | Impact of Novel Coronavirus

2 | FY2020 H1 Results

3 | FY2020 Forecast

4 | Results and Forecasts by Segment

5 | Topics

Results and Forecast by Segment

[JPY in billions]

	FY2019 Result			FY2020 previous forecast *1			FY2020 forecast			FY2020 Med-term Plan Target *2
	1H	2H	FY	1H	2H	FY	1H	2H	FY	FY
Net sales	303.3	309.9	613.3	270.0	290.0	560.0	266.6	283.3	550.0	750.0
Basic Chemicals	181.4	182.3	363.8	146.0	155.8	301.8	141.2	154.8	296.0	—
Specialty Chemicals	125.0	130.8	255.9	126.3	132.9	259.2	124.0	131.2	255.2	—
Other and Adjustment	▲ 3.1	▲ 3.2	▲ 6.4	▲ 2.3	1.3	▲ 1.0	1.3	▲ 2.6	▲ 1.3	—
Operating Income	16.0	18.2	34.2	12.0	17.0	29.0	14.3	14.6	29.0	65.0
Basic Chemicals	7.1	4.0	11.2	0.6	4.9	5.5	0.4	3.4	3.9	—
Specialty Chemicals	10.0	15.4	25.5	13.3	13.2	26.5	15.3	12.5	27.8	—
Other and Adjustment	▲ 1.2	▲ 1.3	▲ 2.5	▲ 2.0	▲ 1.1	▲ 3.1	▲ 1.4	▲ 1.3	▲ 2.7	—
Ordinary Income	11.6	19.4	31.1	12.0	14.0	26.0	16.5	13.4	30.0	80.0
Basic Chemicals	0.9	3.8	4.7	0.5	2.1	2.6	1.5	2.7	4.3	—
Specialty Chemicals	11.7	16.4	28.1	13.1	12.8	25.9	15.9	11.7	27.6	—
Other and Adjustment	▲ 1.0	▲ 0.7	▲ 1.8	▲ 1.7	▲ 0.9	▲ 2.6	▲ 0.9	▲ 1.0	▲ 1.9	—

* 1 Announced on Aug 6, 2020

* 2 Medium-term Management Plan "MGC Advance 2020" announced on May 11, 2018. Ordinary income was revised on May 13, 2019.

【Reference】 Results and Forecast by Old Segment

【JPY in billions】

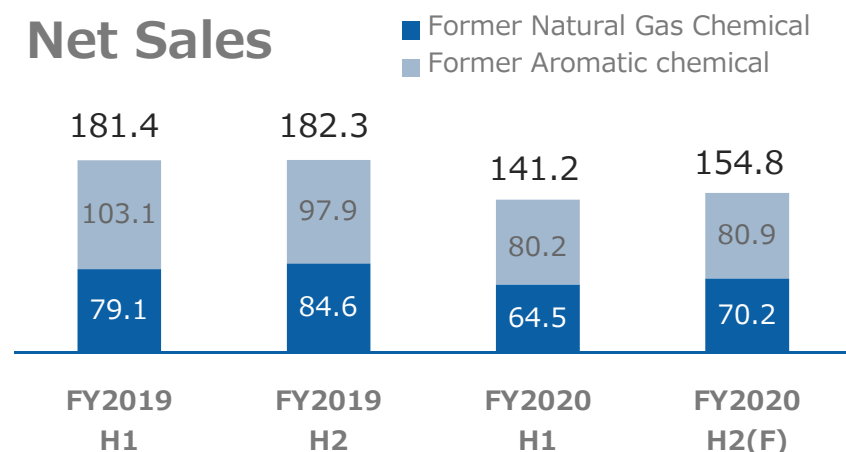
	FY2019 Result			FY2020 previous forecast *1			FY2020 forecast			FY2020 Medium-term Plan Targets *2
	1H	2H	FY	1H	2H	FY	1H	2H	FY	FY
Net sales	303.3	309.9	613.3	270.0	290.0	560.0	266.6	283.3	550.0	750.0
Natural Gas	79.1	84.6	163.7	64.6	71.0	135.7	64.5	70.2	134.8	210.0
Aromatic	103.1	97.9	201.1	81.3	84.8	166.1	80.2	80.9	161.2	240.0
Specialty	99.4	102.5	202.0	97.6	106.5	204.1	96.6	103.5	200.2	240.0
Information & Advanced Materials	26.2	28.6	54.8	28.6	26.4	55.0	29.0	25.8	54.9	60.0
Corporate/Adjustment	▲4.6	▲3.8	▲8.4	▲2.3	1.3	▲1.0	▲3.9	2.6	▲1.3	0
Operating income	16.0	18.3	34.2	12.0	17.0	29.0	14.3	14.6	29.0	65.0
Natural Gas	▲0.5	0.7	0.1	▲2.4	0.0	▲2.4	▲2.6	▲0.6	▲3.3	7.0
Aromatic	7.7	3.4	11.1	3.1	4.9	8.0	3.1	4.0	7.2	23.0
Specialty	8.0	11.8	19.9	9.0	10.6	19.6	10.3	9.2	19.6	30.0
Information & Advanced Materials	2.0	3.6	5.6	4.2	2.6	6.8	5.0	3.2	8.2	6.0
Corporate/Adjustment	▲1.2	▲1.3	▲2.5	▲2.0	▲1.1	▲3.1	▲1.4	▲1.3	▲2.7	▲1.0
Ordinary income	11.6	19.7	31.1	12.0	14.0	26.0	16.5	13.4	30.0	80.0
Natural Gas	▲6.4	0.7	▲5.7	▲2.1	▲2.1	▲4.2	▲1.5	▲0.6	▲2.1	15.0
Aromatic	7.3	3.1	10.4	2.6	4.2	6.8	3.0	3.4	6.4	22.0
Specialty	9.4	12.9	22.3	8.6	9.9	18.6	10.6	8.5	19.1	37.0
Information & Advanced Materials	2.3	3.5	5.8	4.4	2.8	7.3	5.2	3.1	8.4	7.0
Corporate/Adjustment	▲1.0	▲0.7	▲1.8	▲1.7	▲0.9	▲2.6	▲0.9	▲1.0	▲1.9	▲1.0

*1 Announced on Aug 6,2020

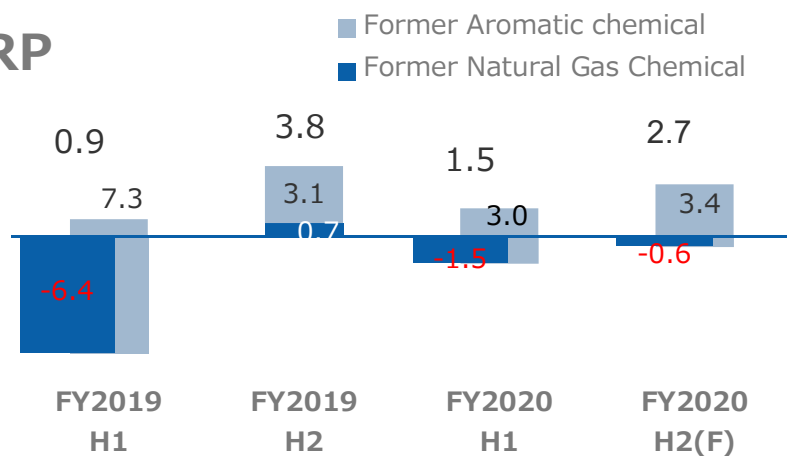
*2 Medium-term Management Plan "MGC Advance 2020" announced on May 11,2018. Ordinary income was revised on May 13,2019.

Basic Chemicals

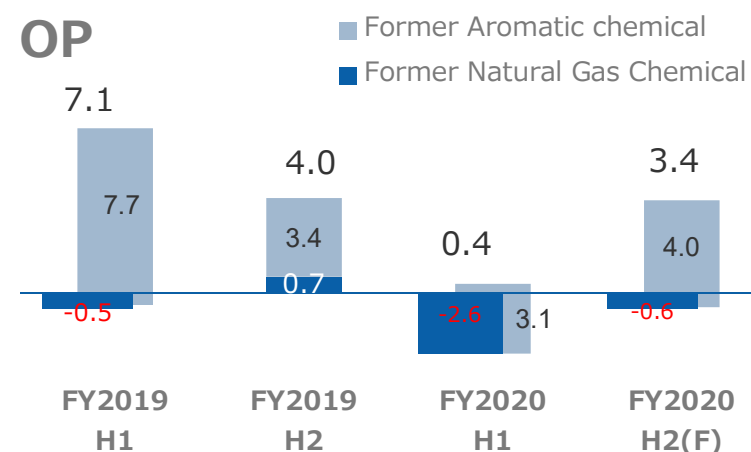
Net Sales



RP



OP



H1 Results (YoY)

- Decreases in net sales and operating income due to sluggish sales under the influence of the pandemic, in addition to declining market prices of general-purpose products and other factors. Ordinary income, however, increased due to improvement in equity in earnings of affiliates.

H2 Forecast (vs H1 Results)

- Although a major periodic shutdown maintenance is scheduled for the 4th quarter at the Mizushima Plant, we anticipate that the impact of the pandemic will eventually be alleviated and therefore expect sales and earnings to increase due to a resulting recovery in sales volume and other positive factors.

NOTE) Due to the elimination of transactions between old segments, the sum of the old segments does not match the figures of the new segments (basic chemicals).

Basic Chemicals~Business Trends~

FY2020 H1 (results, year-on-year difference)

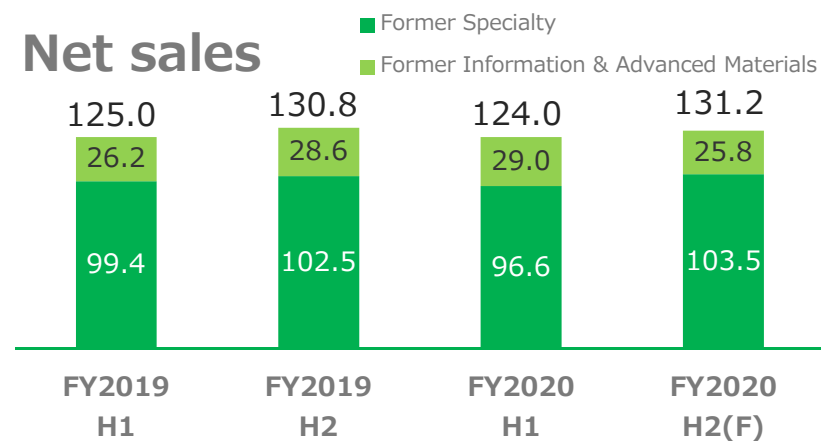
- ◆ Methanol: Revenue dropped due to a drop in market conditions. Equity in earnings of affiliates improved as a result of a 7.8 billion drop in one-off costs in connection with a joint venture in Saudi Arabia recorded in the previous fiscal year, and tax refunds in the same business (approximately ¥1.8 billion*).
**Due to a tax refund related to the sale of shares and a review of tax expenses related to a change in the investment ratio.*
- ◆ Methanol and ammonia-based chemicals: declined due to sluggish market conditions for MMA-related products and an increase in repair expenses.
- ◆ Specialty aromatic chemicals : decrease in earnings due to lower MXDA demand for housing-related and other applications, despite solid sales of aromatic aldehydes.
- ◆ General-purpose aromatic chemicals : The market for Purified isophthalic acid (PIA) remains low. Sales and profits declined.
- ◆ Foamed plastics (JSP) : Sales and profits declined due to lower demand in the automotive field and other factors, despite increased demand in the food and civil engineering fields.

FY2020 H2(forecasts, difference from H1)

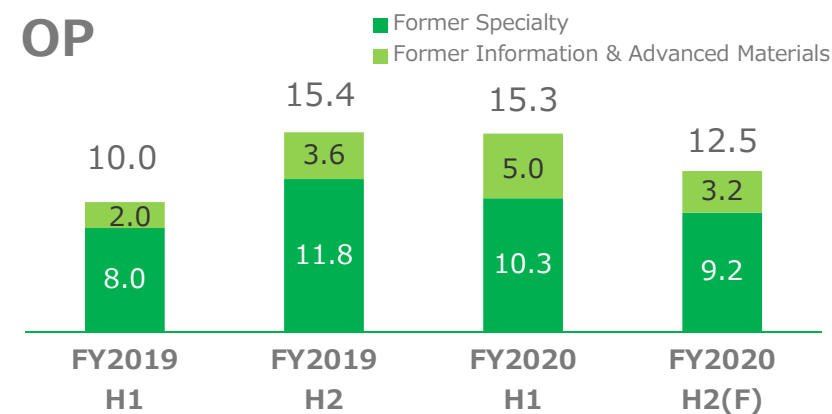
- ◆ Methanol: Although the market price is expected to rise compared with the 1st half (from US\$194 to US\$240), equity in earnings of affiliates will remain virtually unchanged from the 1st half due mainly to the absence of tax refunds in the 1st half. Our project in Republic of Trinidad and Tobago reached the completion of facilities, with trial operation currently being undertaken.
- ◆ Specialty aromatic chemicals: Demand for MXDA, such as those used in hardening agents, is expected to recover. Moreover, 1,3-BAC was reinstated on a recovery track. Overall sales volume is thus expected to recover for specialty aromatic chemicals.
- ◆ JSP: Anticipating recovery in demand in the automotive field, among other positive factors.
- ◆ Fixed costs will growth in the 4th quarter as the Mizushima Plant expects to undergo a periodic shutdown for major maintenance.

Specialty Chemicals

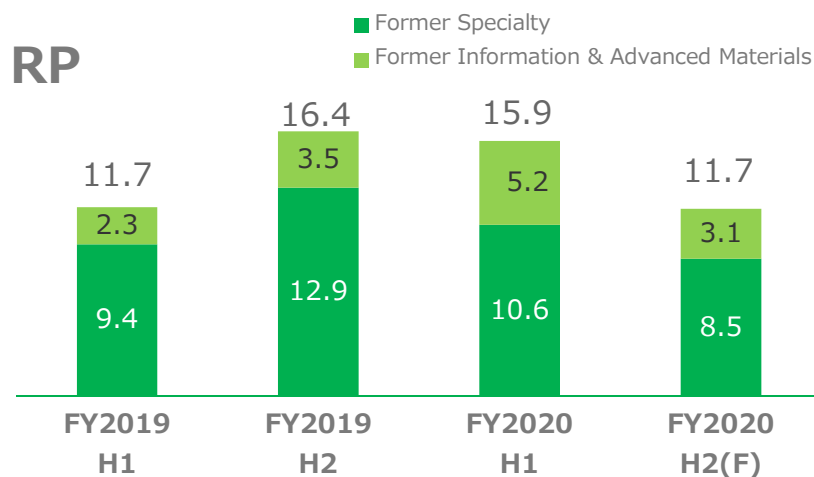
Net sales



OP



RP



H1 Results (YoY)

- Despite the lower sales volume of engineering plastics that reflected the impact of the novel coronavirus pandemic, earnings increased thanks to robust sales of optical polymers and semiconductor-related products.

H2 Forecast (vs H1 Results)

- Although we anticipate recovery in demand for some products, currently affected by fallout from the pandemic, we expect earnings to decrease as we forecast lower sales volume for electronic materials, which sold robustly in the 1st half, and other negative factors.

Specialty Chemicals~Business Trends~

● FY2020 H1 (results, year-on-year difference)

- ◆ Engineering plastics : Sales and profits declined due to a decrease in demand for automotive and other applications due to the impact of Coronavirus, as well as a low level of PC-BPA spreads.
- ◆ Optical polymers : Sales and profits increased due to an increase in sales volume resulting from the progress in the shift to multi-lens smartphones and the increase in production capacity in October last year.
- ◆ Electronic materials : Sales and profits increased due to rising demand for ICT-related products, such as data centers, and introduction of a new product for use in antenna-in-package substrates to be installed in 5G-compatible smartphones.
- ◆ Oxygen absorbers : posted earnings on par with the same period of the previous fiscal year, despite a decline in demand for offerings used in souvenirs and other tourism-related products, thanks mainly to a solid volume of exports.

● FY2020 H2 (forecasts, difference from H1)

- ◆ Inorganic chemicals: The sales volume of chemicals for use in semiconductor manufacturing is expected to slightly edge down compared with the 1st half.
- ◆ Engineering plastics: Although the market spread of PC-BPA is expected to remain sluggish, we expect improvement in earnings due to such factors as recovery in demand from stagnation under the influence of the pandemic.
- ◆ Optical polymers: Sales volume is expected to grow due to the ongoing popularity of smartphones equipped with multiple camera lenses and/or other sophisticated functions.
- ◆ Electronic materials: Sales volume is expected to decline compared with the 1st half, in which we enjoyed robust sales, due to such factors as inventory adjustment undertaken by our customers in the memory device field.

1 | Impact of Novel Coronavirus

2 | FY2020 H1 Results

3 | FY2020 Forecast

4 | Results and Forecasts by Segment

5 | Topics

Mitsubishi Gas Chemical Trading, Inc. launched via the merger of three MGC Group trading companies

- In October 2020, the merger of Tokyo Shokai, Ltd., Ryoko Chemical Co., Ltd. and Ryoyo Trading Co., Ltd., all of which engaged in trading for the Group, resulted in the launch of Mitsubishi Gas Chemical Trading, Inc. that boasts annual sales of more than ¥150.0 billion.
- In addition to uniting their business know-how, the move is aimed at consolidating market and customer intelligence that had been collected separately by the three trading companies. The resulting company is thus expected to offer valuable insights to the entire Group while exercising comprehensive capabilities to handle a broad range of products.
- Having established a strong marketing organization via the integration of strengths possessed by the three trading companies, Mitsubishi Gas Chemical Trading will strive to better accommodate market needs and realize synergies far beyond those achievable solely through increased post-merger scale.



Strategically develop businesses via a network of 15 overseas bases, with Asia positioned as the main target region



Handle a variety of products ranging from basic raw materials to high-value-added products finely tuned to customer needs

Appendix

Appendix : Key Indicators (1)

【JPY in billions】

FY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 (F)
Capital expenditure (H1)	42.4 (22.4)	30.9 (17.7)	25.4 (13.8)	22.2 (10.3)	30.5 (14.9)	35.0 (13.7)	30.9 (13.9)	39.2 (18.6)	42.3 (22.4)	45.0 (15.8)
Depreciation& Amortization (H1)	27.7 (13.4)	23.0 (10.7)	23.5 (11.4)	23.7 (11.5)	26.7 (13.1)	25.6 (12.2)	27.0 (13.1)	27.4 (13.5)	29.5 (14.4)	31.0 (15.1)
R&D expenditure (H1)	17.4 (8.8)	15.1 (7.2)	16.1 (8.0)	16.8 (8.0)	18.9 (9.2)	19.2 (9.6)	18.9 (9.5)	18.6 (9.1)	19.6 (9.4)	20.5 (9.8)
Employees(as of Mar 31)	5,216	5,323	5,445	8,254	8,176	8,034	8,009	8,276	8,954	9,279
EPS(Yen)*	55	▲35	66	192	154	222	281	257	101	115
ROA(%)	4.5	4.6	4.8	5.8	5.9	8.4	10.6	8.7	3.9	3.8
ROE (%)	4.4	▲2.8	5.0	12.6	9.0	12.0	13.6	11.3	4.3	4.8
Dividend(yen)* (of which, Interim dividend)	24.0 (12.0)	24.0 (12.0)	24.0 (12.0)	28.0 (14.0)	32.0 (16.0)	38.0 (16.0)	59.0 (24.0)	70.0 (35.0)	70.0 (35.0)	70.0 (35.0)

*The Company conducted a consolidation of shares at a ratio of one share for every two shares effective October1,2016. EPS and dividends have been calculated by retroactive adjustment applying the above share consolidation to preceding periods as well.

Appendix : Key Indicator (2) Capex, depreciation and amortization by segment

【JPY in billions】

FY		2011	2012	2013	2014	2015	2016	2017	2018	2019
Capex	Natural Gas	13.9	6.3	4.5	5.7	5.3	9.0	6.0	5.7	7.2
	Aromatic	4.7	5.7	2.3	4.0	10.6	10.5	11.3	14.6	15.0
	Specialty	21.6	15.0	11.2	7.6	9.9	8.1	11.0	14.4	14.6
	Information & Advanced Materials	1.8	3.3	6.6	4.3	3.8	6.6	1.9	2.3	2.6
	Other	0.1	0.3	0.5	0.3	0.7	0.5	0.6	2.1	2.7
	Total	42.4	30.9	25.4	22.2	30.5	35.0	30.9	39.2	42.3
Depreciation	Natural Gas	7.7	6.2	6.3	6.9	6.1	5.0	5.1	5.5	6.3
	Aromatic	7.7	5.8	4.1	3.9	8.2	8.5	8.5	8.7	9.5
	Specialty	8.4	7.7	9.5	9.2	8.8	8.6	9.1	8.7	8.7
	Information & Advanced Materials	3.5	2.7	3.1	3.3	3.0	3.0	3.5	3.6	3.8
	Other	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.8	1.0
	Total	27.7	23.0	23.5	23.7	26.7	25.6	27.0	27.4	29.5

Appendix : Key Indicator (3)

	FY2016		FY2017		FY2018		FY2019		FY2020	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2(F)
FX(JPY/USD)	105	112	111	111	110	112	109	109	107	105
FX(JPY/EUR)	118	119	126	133	130	127	121	120	121	120
Crude Oil(Dubai) (US\$/BBL)	43	51	50	62	73	65	64	56	37	50
Methanol (US\$/MT)	230	327	296	381	408	335	277	245	194	240
Mixed Xylene(US\$/MT)	660	680	650	725	845	730	705	640	420	490
Bisphenol A (US\$/MT)*	1,000 ~1,200	1,000 ~1,400	1,100 ~1,300	1,200 ~1,700	1,600 ~1,900	1,200 ~1,800	1,000 ~1,450	1,050 ~1,350	900 ~1,450	1,000 ~1,600
Polycarbonate (US\$/MT)*	2,200 ~2,500	2,400 ~2,800	2,500 ~2,900	2,900 ~3,900	2,700 ~3,800	2,100 ~2,800	1,900 ~2,250	1,650 ~2,000	1,500 ~2,150	1,700 ~2,500

*Describe the minimum and maximum values during the period

Sensitivity (Rough estimates)

FX (USD) : with an appreciation(depreciation) of 1 yen against the USD, annual operating income falls (increase) by 0.5 billion yen, while annual ordinary income falls(increases) by 0.9 billion yen.

FX (EUR) : with an appreciation(depreciation) of 1 yen against the USD, annual operating income falls (increase) by 0.1 billion yen, while annual ordinary income falls(increases) by 0.1 billion yen.

Crude oil(Dubai) : A 1 dollar/BBL increase(drop) in crude oil reduces(raises) income by 0.2 billion yen.

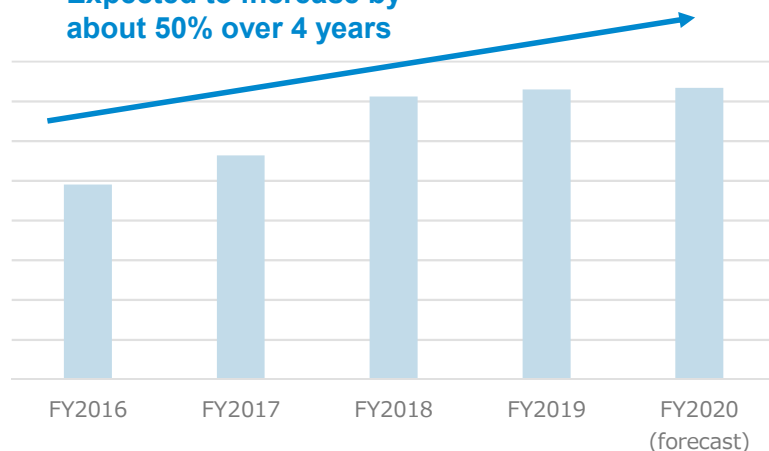
Methanol : A 1 dollar/MT increase (drop) in market price raises (reduces) equity in earnings of affiliates by 0.1 billion yen.

Reference: Ongoing growth in sales of aromatic aldehydes for use in fragrances and additives

- ◆ We efficiently produce high-purity grades via the use of a unique manufacturing method employing the HF-BF₃ catalyst, which is extremely acidic and difficult to handle.
- ◆ Our method is environmentally friendly as it collects and reuses the catalyst within manufacturing equipment, a process that results in a smaller amount of waste emissions.
- ◆ We produce and market more than 10 types of aldehydes, including items that can be manufactured only by MGC.
- ◆ Their wide-ranging applications include resin additives, fragrances, pharmaceuticals and agrochemicals.

Sales of aromatic aldehydes

Expected to increase by
about 50% over 4 years



Resin additives

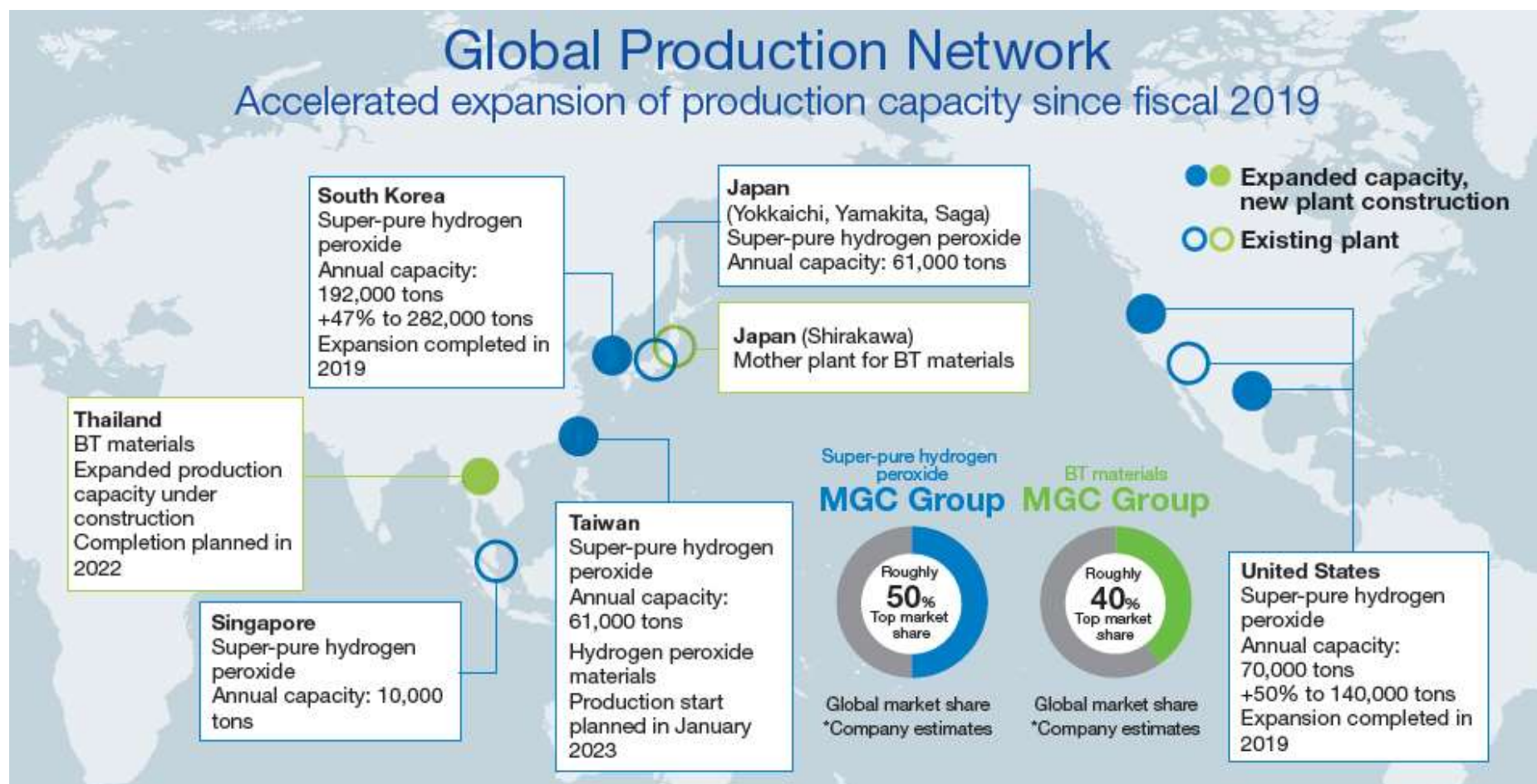


fragrances

Our future plans for production increase

- Execute facility improvement in 2022 to resolve the bottleneck.
- Currently engaging in careful assessment of necessary investment for the construction of new facilities, with an eye to their operational kickoff in 2023.

Reference: Overseas expansion of products for semiconductors "Super-pure Hydrogen Peroxide" and "BT Materials"



Establish an integrated structure that spans the production of raw material hydrogen peroxide to the manufacture of super-pure hydrogen peroxide in Taiwan; accelerate our global strategies for the super-pure hydrogen peroxide business targeting the electronics industry

To achieve the further expansion of its super-pure hydrogen peroxide business, MGC decided to construct a new manufacturing facility for the production of industrial-use hydrogen peroxide within the premises of its subsidiary in Taiwan.

Super-pure hydrogen peroxide is mainly used in manufacturing process for semiconductor wafers and devices.

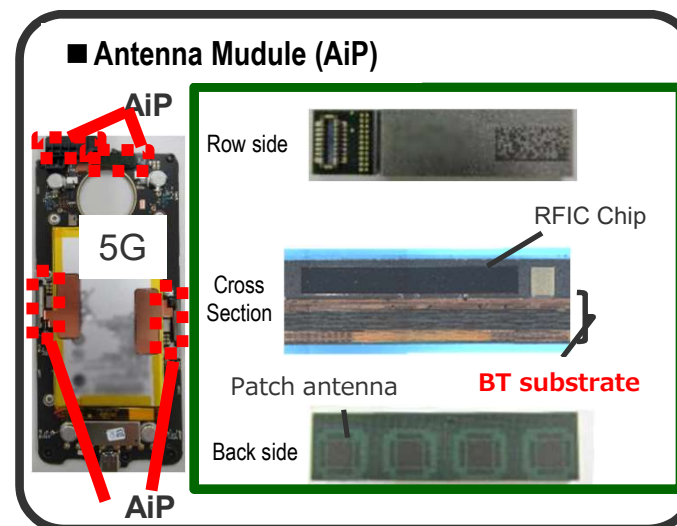
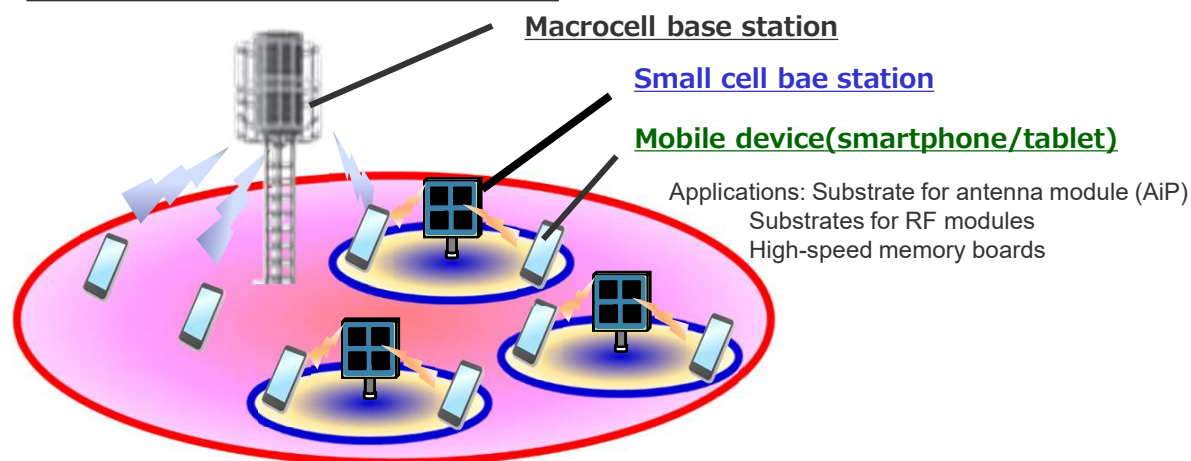
The MGC Group commands a leading global market share of super-pure hydrogen peroxide. As a top-tier company in this field, the Group is securing a growing volume of transactions with various customers thanks to the world's highest level of product quality achieved by its robust quality analysis and assurance structure.

In Taiwan, demand for high-quality super-pure hydrogen peroxide is rapidly growing. Once completed, the aforementioned facility is expected to supply industrial-use hydrogen peroxide, a raw material for use by the Group's super-pure hydrogen peroxide production facilities now in operation. The MGC Group thus aims to establish an integrated structure that spans raw material production to the manufacture of super-pure hydrogen peroxide while securing the ability to produce, market and stably supply high-quality products with cost competitiveness.



Reference: BT materials enjoying sales growth in step with the introduction of 5G infrastructure; examples of use in antenna-in-package substrates

5G communication wireless network



5G Communications technologies

- Ultra-high speed (large capacity)
- Simultaneous connection with multiple devices
- Ultra-low latency

Shift to high-frequency communications signals

- Sub 6 (~6GHz)
- mm wave (~28GHz, 39GHz)

Shift to high frequency ⇒ Greater loss of signals

Requirements for substrates

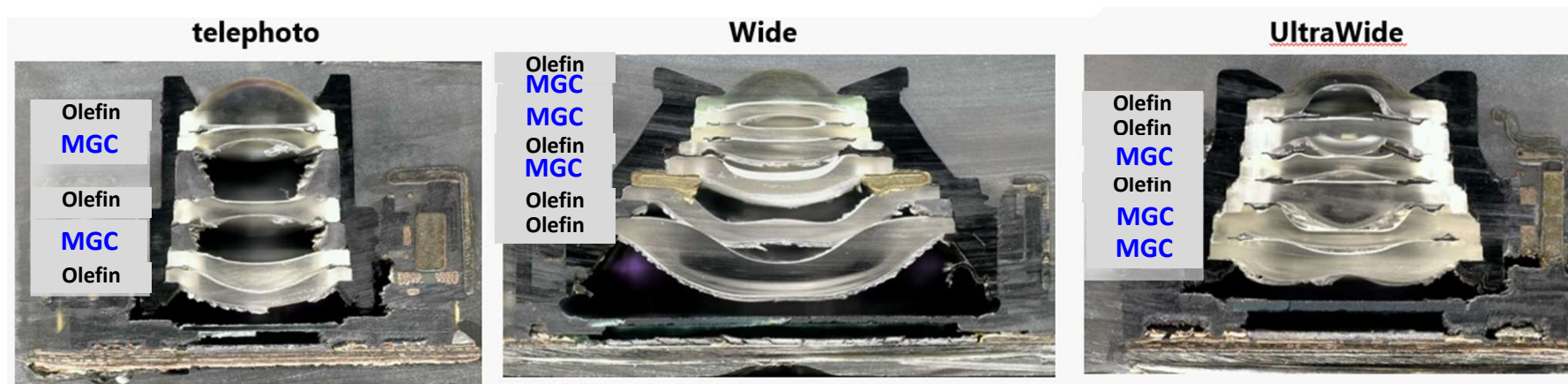
- Low loss (low dielectric constant and low dielectric loss tangent)
- Low profile (low dielectric constant and thin leaf technologies)

Optical polymer:Trend of Smartphone camera lens

Smartphone camera modules are becoming thin and high resolution.



Latest 3-Eye Smartphone Analysis Case



- The camera consists of a combination of low refractive index materials and high refractive index materials.
 - There is a tendency to increase the number of lenses used in order to increase the pixel resolution.
 - In order to thin the thickening, a **material with a higher refractive index** is required.
- **Our materials have very high refractive indices and contribute to the thinning of smartphones**

Disclaimer

These materials contain performance forecasts and other statements concerning the future.

These forward-looking statements are based on information available at the time.

These materials were prepared and on certain premises judged to be reasonable.

None of these forward-looking statements are intended to be guarantees of future performance.

Various factors may cause actual performance to differ significantly from forecasts.



Creating value to share with society

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