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Possibility
of
chemistry

Results Presentation of FY2023 1Q

(The 1st 3 months of the Fiscal year ending March 2024)

Securities code: 4061

Denka Co., Ltd

August 7, 2023

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Serious incidents related to quality and safety

Quality

(May 29, 2023) Improprieties Related to Third-Party Certification of Resin Products of Denka and Toyo Styrene, an Equity-Method Affiliate
https://www.denka.co.jp/eng/storage/news/pdf/452/20230529_denka_styrene_ul_en.pdf

Progress and Future Steps
- An external investigation committee consisting of neutral outside experts has been established and is currently investigating
- The committee will conduct a thorough investigation of the improprieties, determine its causes, and formulate measures to prevent its recurrence, as well as issue a report

Safety

(June 14, 2023) Notice Concerning an Accident at Omi Plant
https://www.denka.co.jp/eng/storage/news/pdf/454/20230614_denka_omi_en.pdf

(July 11, 2023) Formation of Accident Investigative Committee Concerning the Pipe Burst Accident at Omi Plant
https://www.denka.co.jp/eng/storage/news/pdf/457/20230711_denka_investigation_committee_en.pdf

Progress and Future Steps
- Established an accident investigation committee consisting of outside experts and specialists and determined its chair at the first meeting of the committee
- The committee's accident investigation is underway and will be reported as soon as the report is finalized

Two back-to-back incidents shook the very foundation of our management for ensuring safety and quality, which is of utmost importance for a manufacturing company. We are sincerely regretful of these extremely serious situations.

Our President, as the ultimate leader of Company management, is taking responsibility for investigating the cause, formulating countermeasures, and steadily implementing them as an urgent issue for our management to prevent recurrence of any similar situations.

To regain the trust of all stakeholders, the Denka Group will work together to further strengthen compliance and safety.

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FY2023 1Q Results

Lower profit year on year

(¥ billions)	FY2022 1Q Actual	FY2023 1Q Actual	(Year on Year)
Sales	94.4	**87.8**	- 6.5
Operating Income	4.9	**2.8**	- 2.1
Operating Margin	5.2%	**3.2%**	- 2.0%
Ordinary Income	5.1	**2.4**	- 2.8
Net Income Attributable to Owners of Parent	4.3	**2.3**	- 2.0
Forex (¥/$)	126.5	**135.8**	
Japan Naphtha (¥/Kl)	86,500	**65,800**	

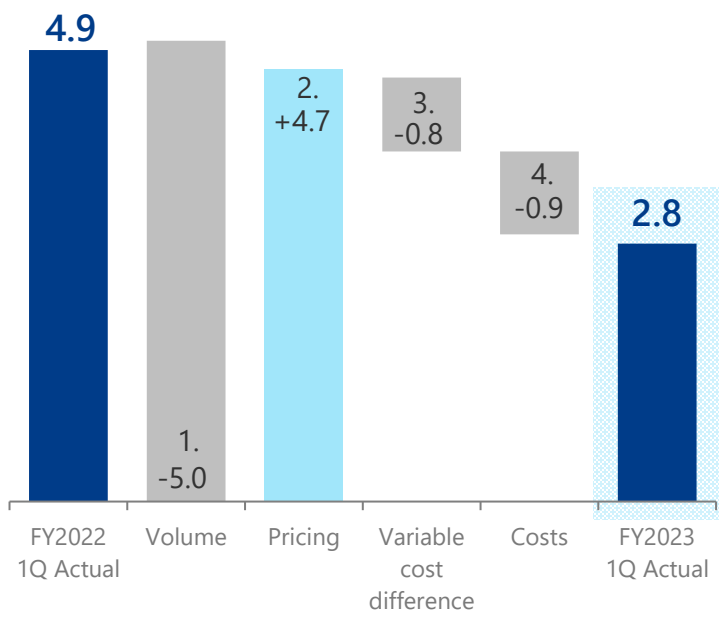
*Gain on sale of strategic cross-shareholdings +1.0 billion yen

Lower profit due to significant negative impact of volume difference due to lower demand, despite the positive impacts from the decline in raw materials and fuel prices and price hikes

Operating Income **2.8 billion yen** Year on Year -2.1 billion yen

Operating Income Variance Analysis (Year on Year)

(¥ billions)



1. Volume:
   (Minus)
   Chloroprene rubber: Lower demand for applications in industry, adhesives, automobiles, etc.
   Semiconductor-related products, functional resins: Deceleration of market activity in China for consumer electronics (smartphones, TVs, PCs, home appliances)
   (Plus)
   Increase in demand for simultaneous test kits for COVID-19 and influenza due to the spread of influenza

2. Pricing: (Includes effect of currency fluctuations +3.4)
   (Plus)
   Chloroprene rubber: Benefits of price increases implemented in stages over the last fiscal year
   (Minus)
   Styrene-related products: Price revision due to decline in raw materials and fuel prices

3. Variable cost difference: (Includes effect of currency fluctuations -2.2)
   Despite decrease in raw materials and fuel prices, negative difference due to currency fluctuations

4. Cost variances
   Increase in repair, labor, and other costs at DPE in the U.S.

* DPE: Denka Performance Elastomer LLC, a U.S. chloroprene rubber manufacturing subsidiary

Lower profit year on year for Electronics & Innovative Products, as well as Elastomers & Infrastructure Solutions

Sales (¥ billions)	FY2022 1Q Actual	FY2023 1Q Actual	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	21.9	19.2	- 2.7	- 4.5	+ 1.8
Life Innovation	6.4	7.2	+ 0.8	+ 1.0	- 0.2
Elastomers & Infrastructure Solutions	30.4	28.0	- 2.4	- 6.6	+ 4.2
Polymer Solutions	31.6	29.8	- 1.9	- 0.8	- 1.1
Others	4.1	3.7	- 0.3	- 0.3	-
Total	94.4	87.8	- 6.5	- 11.2	+ 4.7

Operating Income (¥ billions)	FY2022 1Q Actual	FY2023 1Q Actual	Incr. Decr.	Volume	Pricing	Cost& Others
Electronics & Innovative Products	4.1	2.1	- 1.9	- 2.4	+ 1.8	- 1.4
Life Innovation	0.5	0.9	+ 0.4	+ 0.7	- 0.2	- 0.1
Elastomers & Infrastructure Solutions	- 0.2	-0.7	- 0.5	- 2.7	+ 4.2	- 2.0
Polymer Solutions	- 0.1	-0.0	+ 0.1	- 0.5	- 1.1	+ 1.7
Others	0.6	0.5	- 0.1	- 0.1	-	- 0.0
Total	4.9	2.8	- 2.1	- 5.0	+ 4.7	- 1.8

d) Electronics & Innovative Products (Year on Year)

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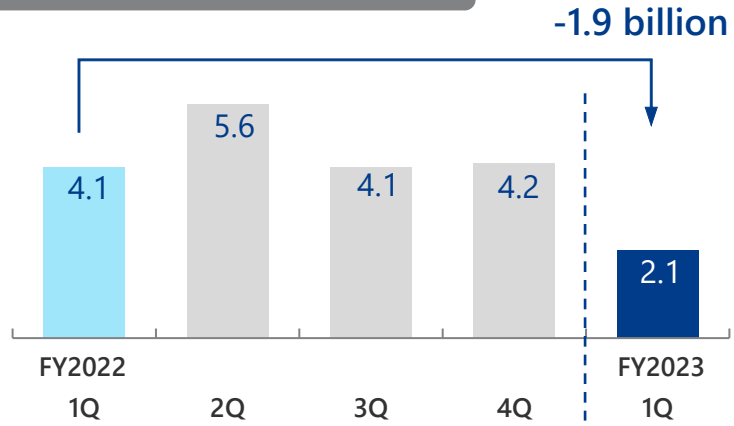
Lower profit due to further weakening in demand for consumer electronics (smartphones, PCs, home appliances), which plummeted in 3Q of the previous fiscal year, weakened further in 1Q, despite movement toward automotive-related demand recovery

Operating Income by Quarter



Operating Income Variance Analysis (Year on Year)

(¥ billions)

*Costs: Increase in costs for systems to raise production, cost to strengthen sales systems

Sales Trends and Costs by Product

Spherical alumina	• Shipments of xEVs exceeded the previous year's level, although they did not reach full recovery from 1Q of the previous fiscal year, which was affected by automobile production cutbacks due to the shortage of semiconductors. However, overall shipments significantly fell below the previous year's level due to further worsening of demand for consumer electronics in 1Q of the current fiscal year after plummeting in 3Q of the previous year
Spherical fused silica High-performance film	• Demand for consumer electronics, which had plummeted in 3Q of the previous year, weakened further in 1Q, with shipments falling below the previous year • Shipments increased compared to the second half of the previous fiscal year, but shipments were lower year on year
Acetylene black	• While demand for xEVs remained strong and shipments exceeded the previous year's level, demand for consumer LiBs worsened, and demand for high voltage cables, which had been growing steadily, temporarily declined due to construction delays, resulting in lower overall shipments than the previous year
Ceramic substrates (silicon nitride, aluminum nitride)	• Shipments for electric railways were on par with the previous year, and shipments of xEVs exceeded the previous year's level, although they did not reach full recovery from 1Q of the previous fiscal year, which was affected by automobile production cutbacks due to the shortage of semiconductors

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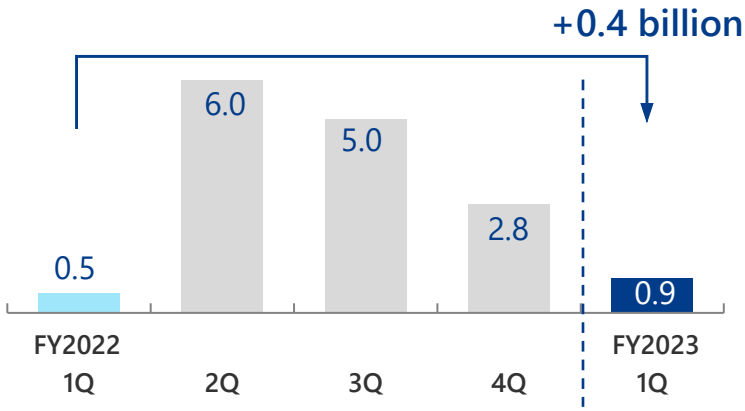
Higher profit from increase in demand for simultaneous test kits (combo kits) for COVID-19 and influenza due to the spread of influenza

Operating Income by Quarter



Operating Income Variance Analysis (Year on Year)

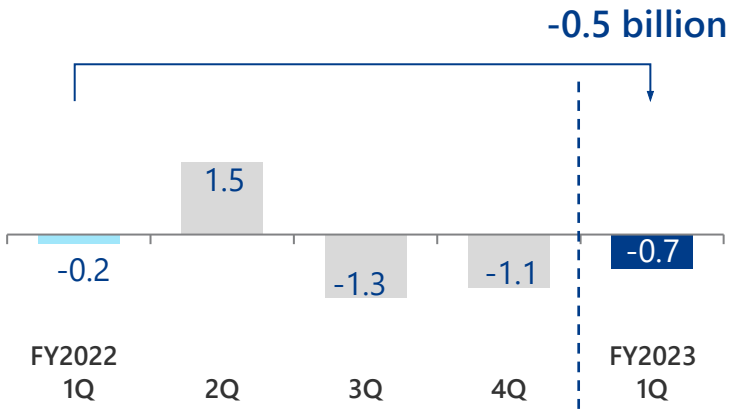
(¥ billions)

Sales Trends and Costs by Product

Influenza vaccine	• In steady manufacturing toward September shipments
COVID-19 rapid antigen test kit	• Despite shipments of COVID-19 antigen test kits falling below the previous year's due to a decrease in new COVID-19 cases, achieved higher sales and profits thanks to shipments of simultaneous test kits for COVID-19 and influenza (combo kits) due to the spread of influenza
IVD reagents (Inflammation markers, etc.)	• Shipments largely unchanged from last year

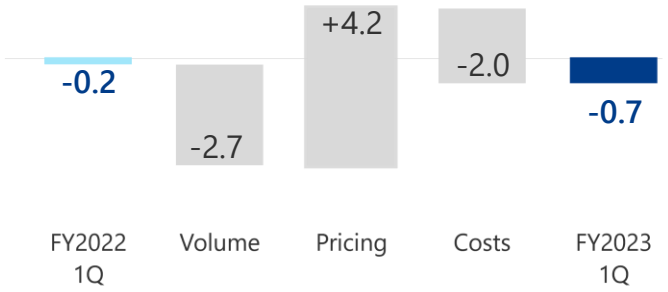
Lower profit due to increased repair and labor costs despite price hikes covering declining demand for chloroprene rubber

Operating Income by Quarter



Operating Income Variance Analysis (Year on Year)

(¥ billions)



*Costs: Increase in repair, labor, and other costs at DPE in the U.S.

Sales Trends and Costs by Product

Chloroprene rubber	• Shipments were lower year on year due to declining demand since 3Q of the previous fiscal year in industrial, adhesive, automotive, and other applications • Contributions from price increases implemented in stages over the last fiscal year
Special cement additives	• Largely unchanged from last year
Cement	• The 2,300 yen/ton price increase is complete (as of September 30 2022) The 3,000 yen/ton price increase, despite delays, is almost complete as of July 31 2023 • Coal prices fell (FY2022 1Q: $373/t ⇒ FY2023 1Q: $161/t)

[Customs Statistics] Chloroprene rubber (dry + latex) export unit price

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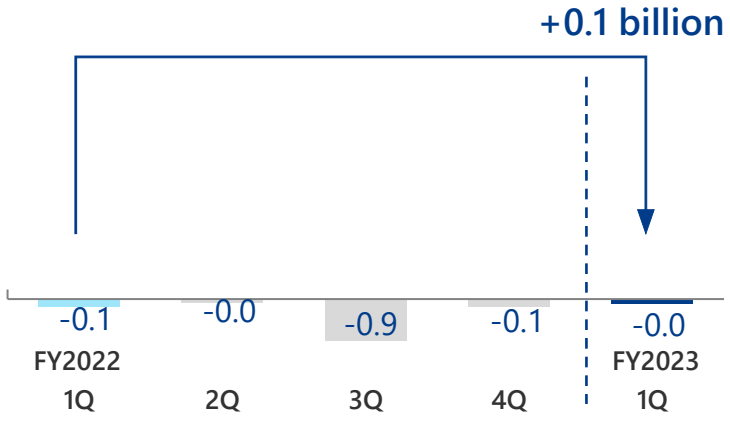
Spreads maintained but remained sluggish as demand declined due to economic downturn

Operating Income by Quarter



Operating Income Variance Analysis (Year on Year)

(¥ billions)

* Costs : Raw materials and fuel price decreases

Sales Trends and Costs by Product

MS resin	• Shipments for LGP applications for TVs and PC monitors, which had been weak since the beginning of the previous fiscal year, bottomed out in 3Q with the recovery trend continuing into 1Q of the current fiscal year, nearly unchanged year on year
AS, ABS, transparent resins, etc.	• Demand for consumer electronics, cosmetics containers, general merchandise, etc., which had deteriorated in 3Q of the previous year, weakened further in 1Q due to overall sluggishness in the global economy, with shipments falling below the previous year
Food wrapping sheets and containers	• Shipments largely unchanged from the previous year
Toyokalon	• Shipments were largely unchanged from the previous year stemming from continuing weakness in purchasing power in Africa and the U.S. due to inflation from 1Q of the previous fiscal year

FY2023 1st Half Earnings Forecast

a) Summary (vs Forecast at the beginning, Year on Year)

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- **Lower-than-expected demand for chloroprene rubber and consumer electronics-related products led to downward revision of 1H forecast**
- **Due to the uncertain economic environment in the second half, the full-year forecast remains unchanged at this time**

(¥ billions)	1H Initial Forecast	1H Revised Forecast	vs Forecast at the beginning	FY2022 1H Actual	(Year on Year)	FY2023 Forecast (announced May 11)
Sales	205.0	**190.0**	- 15.0	202.9	- 12.9	430.0
Operating Income	12.5	**9.0**	- 3.5	18.3	- 9.3	33.0
Operating Margin	6.1%	**4.7%**	- 1.4%	9.0%	- 4.3%	7.7%
Ordinary Income	11.0	**7.0**	- 4.0	17.0	- 10.0	29.0
Net Income Attributable to Owners of Parent	8.5	**5.0**	- 3.5	14.3	- 9.3	22.0
Forex (¥/$)	130.0	**138.7**		131.6		130.0
Japan Naphtha (¥/Kl)	64,200	**62,600**		82,850		64,200

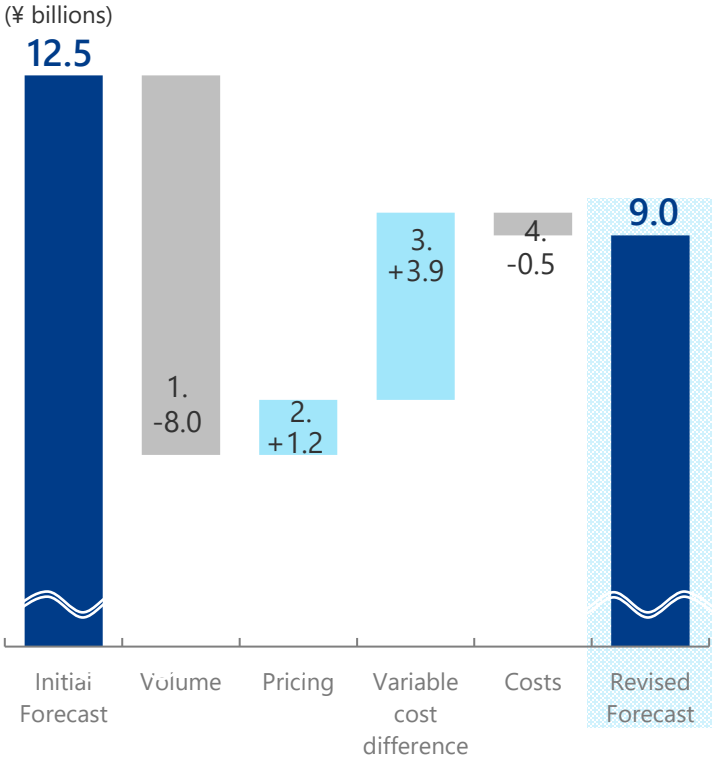
Market trends for the first half have changed since the initial forecast; demand for consumer electronics, chloroprene, and food containers is expected to be lower than initial expectations

(Market Trends)	Initial Forecast	Revised Forecast
Semiconductors	Automotive-related applications: Gradual recovery toward the end of 2023 Consumer electronics-related applications: Gradual demand recovery in 2Q and beyond	Automotive-related applications: No change to outlook Consumer electronics-related applications: Demand recovery significantly delayed
xEV	Accelerated market expansion despite negative effects of inflation and other factors Gradual recovery in automotive semiconductor demand toward the end of 2023	No change
COVID-19	・Projection of approximately two epidemics per year ・Demand for in-hospital testing will continue, but municipal testing will decrease ・No revision for insurance points as of April 1	No change
Chloroprene rubber	Gradual recovery in demand beginning in the first half Second half to recover to 90% of FY2022 first half levels	Prolonged sluggish demand shows no signs of recovery
Food containers	Increase in demand in the ready-made meal market, which is less expensive than eating out	Decreased in demand in the ready-made meal market with further rising food prices

Profit is expected to decrease due to the lack of expected recovery for products from 2Q onward in the initial forecast

Operating Income **9.0 billion yen** vs Forecast at the beginning **-3.5 billion yen**

Operating Income Variance Analysis (vs Forecast at the beginning)



1. Volume:
(Minus)
Chloroprene rubber: Lower demand for applications in industry, adhesives, automobiles
Semiconductor-related products, functional resins: Deceleration of market activity in China for consumer electronics (smartphones, TVs, PCs, home appliances)

2. Pricing: (Includes effect of currency fluctuations +4.5)
(Minus)
Styrene-related products: Price revision due to decline in raw materials and fuel prices

3. Variable cost difference: (Includes effect of currency fluctuations -3.0)
Raw materials and fuel price decreases, etc.

4. Cost variances
Increase in repair, labor, and other costs at DPE in the U.S.

* DPE: Denka Performance Elastomer LLC, a U.S. chloroprene rubber manufacturing subsidiary

Despite increased profits expected in Life Innovation, decreased profits expected in Electronics & Innovative Products, Elastomers & Infrastructure Solutions, and Polymer Solutions

Sales (¥ billions)	FY2023 1H Initial Forecast	FY2023 1H Revised Forecast	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	45.0	40.0	- 5.0	- 5.3	+ 0.3
Life Innovation	20.0	20.0	± 0.0	- 0.3	+ 0.3
Elastomers & Infrastructure Solutions	65.0	57.5	- 7.5	- 8.4	+ 0.9
Polymer Solutions	67.5	65.0	- 2.5	- 2.2	- 0.3
Others	7.5	7.5	± 0.0	± 0.0	-
Total	205.0	190.0	- 15.0	- 16.2	+ 1.2

Operating Income (¥ billions)	FY2023 1H Initial Forecast	FY2023 1H Revised Forecast	Incr. Decr.	Volume	Pricing	Cost& Others
Electronics & Innovative Products	6.0	4.0	- 2.0	- 2.6	+ 0.3	+ 0.3
Life Innovation	4.0	5.0	+ 1.0	+ 0.3	+ 0.3	+ 0.4
Elastomers & Infrastructure Solutions	0.5	-1.5	- 2.0	- 4.3	+ 0.9	+ 1.4
Polymer Solutions	1.0	0.5	- 0.5	- 1.6	- 0.3	+ 1.4
Others	1.0	1.0	± 0.0	+ 0.2	-	- 0.2
Total	12.5	9.0	- 3.5	- 8.0	+ 1.2	+ 3.3

e) Electronics & Innovative Products (vs Forecast at the beginning)

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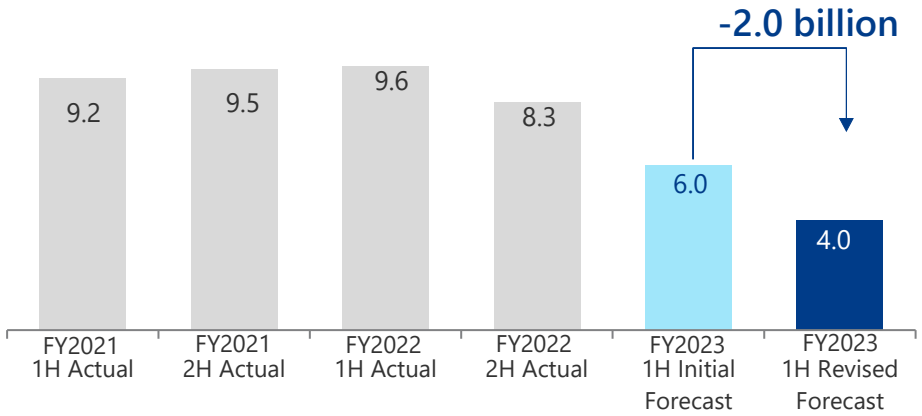
Demand for consumer electronics (smartphones, PCs, home appliances) is not expected to recover as per the initial forecast, falling short of the forecast

Operating Income



Operating Income Variance Analysis (vs Forecast at the beginning)

(¥ billions)

Market Outlook and Sales Trends

(Market)	Initial Forecast	Revised Forecast
Semiconductors	Gradual recovery in automotive-related demand toward the end of 2023 Gradual recovery in consumer electronics-related application demand in 2Q and beyond	No change to automotive-related applications outlook Demand recovery significantly delayed in consumer electronics-related applications
xEV	Accelerated market expansion despite negative effects of inflation and other factors	(No change)
Renewable energy (High voltage-cables)	Partial delay in large-scale projects in Europe	(No change)

Sales Trends

Spherical fused silica High-performance film Spherical alumina	: We forecast consumer electronics demand to swing downward and be lower than projected
Ceramic substrates (silicon nitride, aluminum nitride)	: Same as initial forecast
Acetylene black	: We forecast demand for LiBs for consumer use to decline and be lower than projected.

e) Life Innovation (vs Forecast at the beginning)

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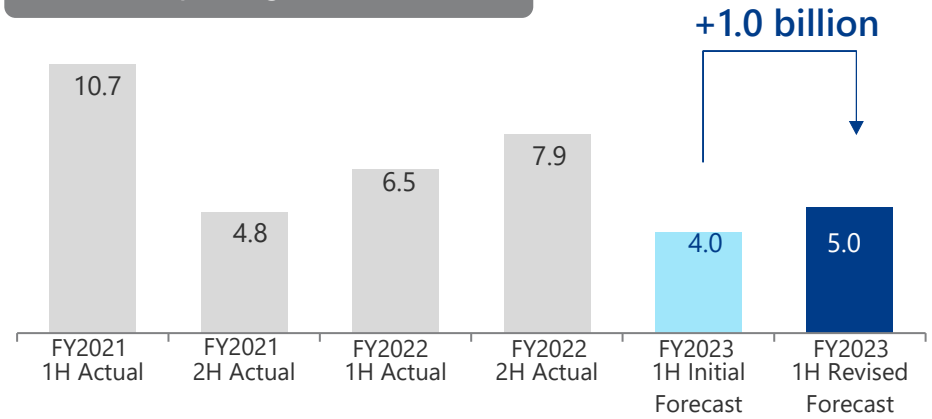
Expecting to exceed forecasts due to higher profit from increase in demand for simultaneous test kits for COVID-19 and influenza (combo kits) due to the spread of influenza, and to maintaining prices of test kits due to downgrading of COVID-19 to a Class 5 infectious disease

(¥ billions)

Operating Income



Operating Income Variance Analysis (vs Forecast at the beginning)

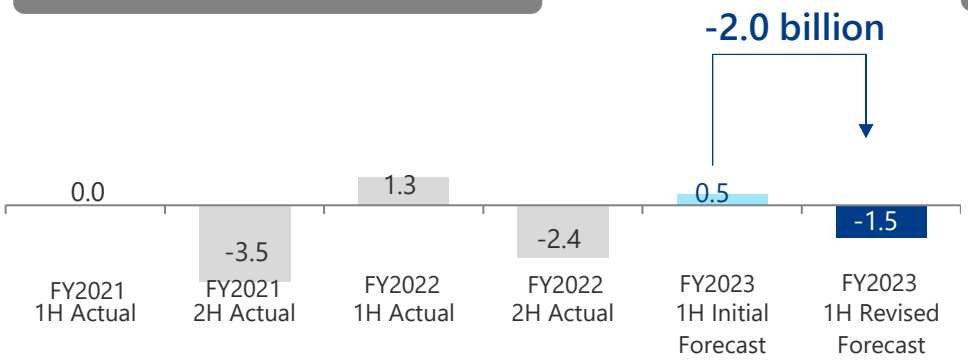
Market Outlook and Sales Trends

(Market)	Initial Forecast	Revised Forecast	Sales Trends
Influenza	・The number of vaccinations was in line with the as usual due to epidemic trends and a revision of the number of COVID-19 vaccinations	・The epidemic from last season has not settled and is continuing ・No change to outlook for number of vaccinations	: In the first half, shipments are scheduled to start in September as expected (Same as initial forecast)
COVID-19	・Projection of approximately two epidemics per year ・Demand for in-hospital testing will continue, but municipal testing will decrease ・No revision for insurance points as of April 1	(No change)	COVID-19 rapid antigen test kits : ・Increase in shipments expected for simultaneous test kits for COVID-19 and influenza (combo kits) due to the spread of influenza ・Maintaining the price of test kits after downgrading of COVID-19 to a Class 5 infectious disease
IVD reagents (Inflammation markers, etc.)	Recovery in demand in the Chinese market to the pre-COVID-19 levels of 2019	(No change)	IVD reagents (Inflammation markers, etc.) : Same as initial forecast

With prolonged sluggish demand for chloroprene rubber, performance is expected to fall short of the forecast with no sign of recovery

(¥ billions)

Operating Income



Operating Income Variance Analysis (vs Forecast at the beginning)

Market Outlook and Sales Trends

(Market)	Initial Forecast	Revised Forecast	Sales Trends
Chloroprene rubber	Gradual recovery in demand beginning in the first half Second half to recover to 90% of FY2022 first half levels	Prolonged sluggish demand shows no signs of recovery	We expect prolonged sluggish demand and volumes to reduce significantly
Special cement additives	Increase in domestic investments (private and government) and demand recovery in China	(No change)	Same as initial forecast
Cement	Coal price: $209/ton projected Additional price increase of 3,000 yen/ton will make a gradual contribution over the first half	Coal price: $150/ton projected The 3,000 yen/ton additional price hike, despite delays, is almost complete as of July 31, 2023	Delayed contribution of price hikes despite falling coal prices

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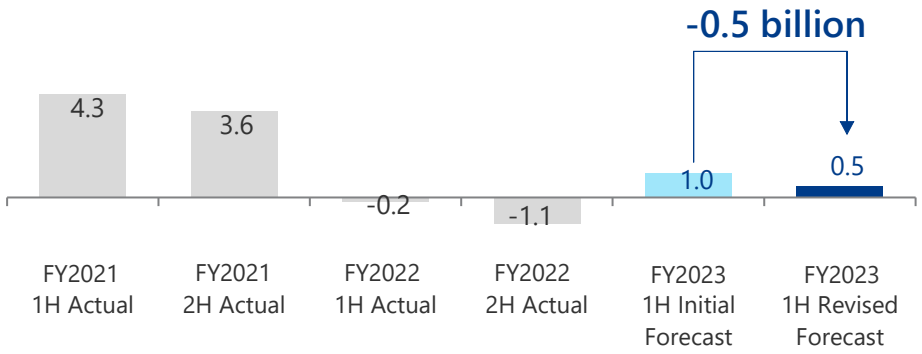
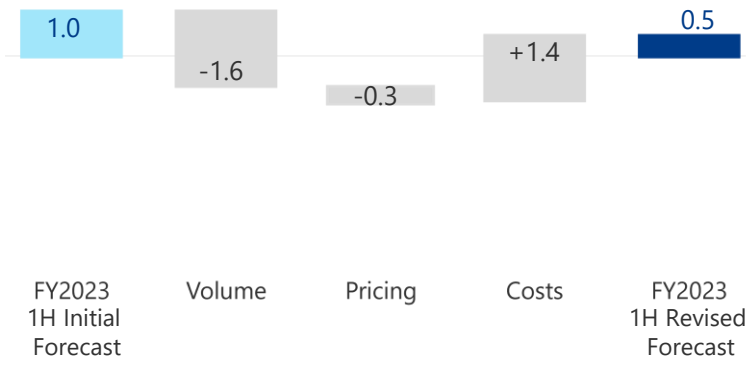
We forecast the recovery in demand to be slower than expected and project results to be lower than the forecast

(¥ billions)

Operating Income



Operating Income Variance Analysis (vs Forecast at the beginning)



Market Outlook and Sales Trends

(Market)	Initial Forecast	Revised Forecast
Consumer Electronics (TVs, PCs, home appliances, etc.)	Demand for LGP applications will continue to be strong Demand for other applications also will recover beginning in 2Q	Demand for LGP applications will continue to be strong Recovery of demand for other applications is expected to be delayed
Cosmetics containers, General merchandise, etc.	Demand recovery beginning in 2Q	Recovery of demand is expected to be delayed
Food containers	Increase in demand in the ready-made meal market, which is less expensive than eating out	Decreased in demand in the ready-made meal market with further rising food prices
Toyokalon	We expect a recovery in demand in the African and U.S. markets	Delayed recovery in demand in the African and U.S. markets

Sales Trends

MS resin	: Same as initial forecast
AS, ABS, transparent resins, etc.	: Demand for consumer electronics, cosmetics containers, general merchandise, etc., expected to be lower than forecast
Food wrapping sheets and containers	: Lower than Initial forecast
Toyokalon	: Lower than Initial forecast

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1Q is flat year on year, no change to initial forecast for the first half

1Q (Year on Year)

(¥ billions)	Investment FY2022 1Q Actual	Investment FY2023 1Q Actual	Depreciation FY2022 1Q Actual	Depreciation FY2023 1Q Actual	R&D FY2022 1Q Actual	R&D FY2023 1Q Actual
Electronics & Innovative Products	3.2	4.5	1.9	2.2	1.2	1.2
Life Innovation	0.3	0.6	1.0	1.0	1.2	1.4
Elastomers & Infrastructure Solutions	2.1	1.6	2.5	2.1	0.8	0.6
Polymer Solutions	2.4	1.0	1.1	1.2	0.6	0.6
Others	-	-	0.1	0.1	-	-
Total	8.0	7.7	6.6	6.7	3.9	3.8

1H (vs Forecast at the beginning)

	Investment FY2023 1H Initial Forecast	Investment FY2023 1H Revised Forecast	Depreciation FY2022 1H Initial Forecast	Depreciation FY2023 1H Revised Forecast	R&D FY2022 1H Initial Forecast	R&D FY2023 1H Revised Forecast
Electronics & Innovative Products	10.0	No change	4.5	No change	2.5	No change
Life Innovation	3.0		1.8		3.0	
Elastomers & Infrastructure Solutions	4.5		4.5		1.5	
Polymer Solutions	2.5		2.5		1.0	
Others	-		0.2		-	
Total	20.0		13.5		8.0	

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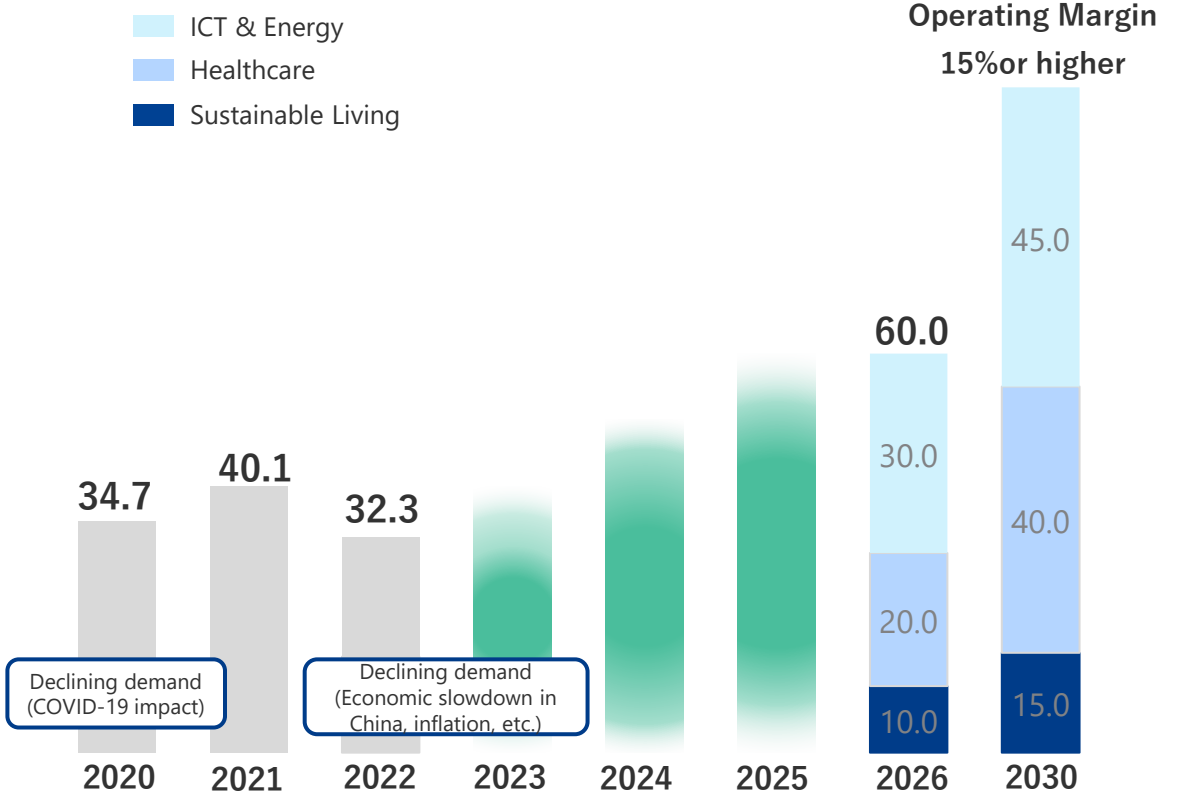
No change to dividend forecast

		FY2018 Actual	FY2019 Actual	FY2020 Actual	FY2021 Actual	FY2022 Actual	FY2023 Forecast
Net Income	(¥ billions)	25.0	22.7	22.8	26.0	12.8	22.0
Dividends per Share*	(¥/share)	120.0	125.0	125.0	145.0	100.0	120.0 Mid-term 60.0 End 60.0
Dividend	(¥ billions)	10.5	10.8	10.8	12.5	8.6	10.4
Shareholders Return		42%	48%	47%	48%	68%	47%
Stock Purchase	(¥ billions)	2.1	-	-	-	-	-
Total Return	(¥ billions)	12.6	10.8	10.8	12.5	8.6	10.4
Total Return Ratio		50%	48%	47%	48%	68%	47%
Depreciation	(¥ billions)	22.9	22.5	22.9	23.9	27.0	27.5
Investment & Lending	(¥ billions)	32.8	36.9	42.3	35.6	39.4	47.0
Interest Bearing Debt	(¥ billions)	112.1	134.3	138.2	137.0	169.7	177.0
Net D/E Ratio		0.40	0.42	0.42	0.40	0.50	0.51
ROIC		**7.8%**	**6.6%**	**6.8%**	**7.3%**	**6.7%**	**5.6%**
ROE		**10.3%**	**9.1%**	**8.8%**	**9.4%**	**4.4%**	**7.3%**

Make the World a Better Place as Specialists in Chemistry

Aiming for further growth in FY2026 and beyond by implementing structural reforms in businesses that are affected by the external environment and where there is pressure on earnings, and by concentrating management resources in focus areas

Operating Income



[Present]

・One-Star Businesses are under pressure to break even due to declining demand in FY2020 and ongoing declining demand from FY2022

[Actions to Take by 2026]

a) Carrying out strategic investment and R&D
→ Concentrating management resources on focus areas toward greater expansion of Three-Star Businesses

b) Decision on policy on One-Star Businesses and businesses in the red by 2026
→ Toward a business structure less susceptible to the external environment

	Strategic investment	R&D
	8-year cumulative	
(¥ billions)	360.0	180.0
ICT & Energy	80.0	40.0
Healthcare	80.0	70.0
Sustainable Living	30.0	20.0
Environmental Investment	85.0	
Process reforms	50.0	
Other (M&A, etc.)	35.0	
Basic Research		50.0

Make the World a Better Place as Specialists in Chemistry

Concentrating management resources on "Denka Special," work we do better than anyone else, where we expect to make major leaps going forward

Denka Special

Work we do better than anyone else, where we expect to make major leaps going forward

a) Highly functional inorganic materials for EVs

b) Organic low dielectric materials for next-generation communications use

c) G47Δ, Oncolytic Herpes Virus and deployment to CDMOs specialized in virus formulation

d) Hydroelectric power generation + M to A

Responding to growing EV demand with highly functional inorganic materials based on ceramic high-temperature firing technology, nanoparticle control technology, and impurity control technology

Denka Special a) Highly Functional Inorganic Materials for EVs

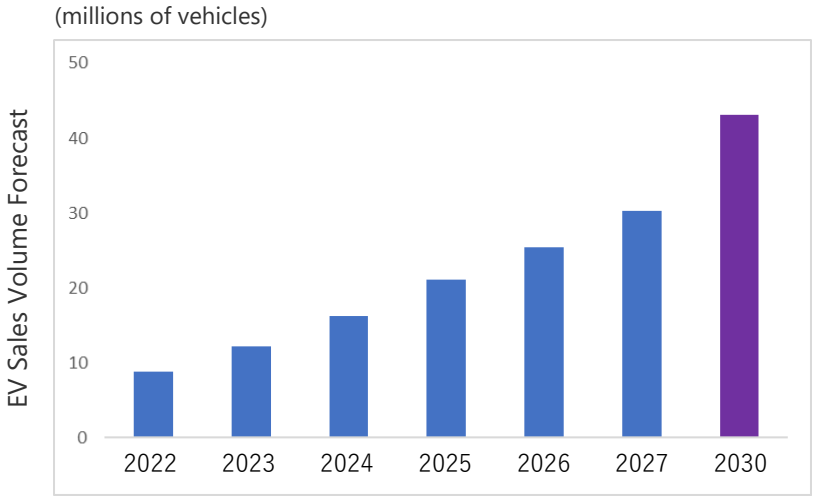
Sales

FY2022 **20.0 billion yen** ▶ FY2030 **80.0 billion yen**

Potential market size: EV sales volume

FY2022 **10 million vehicles** ▶ FY2030 Forecast **40+ million vehicles**

Uniqueness: Highly functional inorganic materials based on ceramic high-temperature firing technology, nanoparticle control technology, and impurity control technology



Denka net sales per vehicle

Gasoline vehicles **200 yen** ▶ EVs **2,000 yen**

Major Products	Major Applications in Gasoline Vehicles	Major Applications in EVs	Future Action
Spherical fused silica	Semiconductor sealants	Semiconductor sealants	Capacity expansion in Singapore (launch in 2024)
Spherical alumina	-	Thermal interface materials for LiB cooling mechanisms, OBC (on board chargers)	Capacity expansion in Singapore (launched in 2022)
Acetylene black	-	Conductive agents for LiB cathode materials	New manufacturing base in Thailand (launch in 2025)
Silicon Nitride (Powder)	-	Insulating substrates for inverter power modules, bearing balls for traction motors	Capacity expansion (launch in 2025)
Ceramic substrates (silicon nitride, aluminum nitride)	-	Insulating substrates for inverter power modules	Capacity expansion (launch in 2023 2nd Half)
Others (metal substrates, etc.)	Headlights, electric power steering, etc.	Headlights, electric power steering, etc.	-

We accurately identify market needs through inorganic materials, which have produced several de facto materials in the field of electronic materials. Our unique organic material manufacturing technology is contributing to next-generation telecommunications technologies

Denka Special b) Organic Low Dielectric Materials for Next-generation Communications Use

	FY2022		FY2030
Sales	Not launched yet	▶	10.0-15.0 billion yen

Potential market size: Next-generation communications (5G, 6G)

Market size for low dielectric resins FY2030 3x+ (vs FY2022)

Uniqueness: We accurately identify market needs through inorganic materials, which have produced several de facto materials in the field of electronic materials. Contributing to reducing transmission loss, an issue in high-speed communications (low permittivity) and transmission loss reduction (low dissipation factor), through organic low dielectric materials combining inorganic material manufacturing technologies accumulated with organic material manufacturing technologies, including precision film formation and coordinated polymerization

SNECTON (Low Dielectric Macromonomer/LDM)
Applications: Substrates for copper clad laminates (CCL) and interlayer dielectric materials

With thermosetting materials composed of ethylene-styrene-divinylbenzene, we resolve issues faced by soft materials in heat resistance and dielectric properties. Evaluation is progressing steadily as a base material for rigid substrates for high-speed communications and an interlayer dielectric material. As the only manufacturer of both resin materials and inorganic fillers, we are able to offer our own unique proposals by Varnish, a resin filler mixture

LCP Film (Liquid Crystal Polymer Film)
Applications: Substrates for flexible copper clad laminates (FCCL)

LCP is a extremely difficult resin to make into film, and few manufacturers can provide a stable supply of LCP. By applying the film deposition technology for organic materials cultivated in the electronic packaging and food packaging sheet businesses, we have established a technology for manufacturing LCP using the T-die method (T-die extrusion method) , which offers superiority in mass production and film thickness control. LCP is expected to be a base material for flexible circuits of high-speed communications.

Denka IP for Copper Clad Laminates (CCL)
Applications: Glass fabric base epoxy copper clad laminates (CCL)
Hardening agent for prepreg

We are currently making improvements in and developing Denka IP, which is currently manufactured and sold as a heat-resistant additive for ABS resin. These efforts are to make Denka IP a resin material that can improve the glass transition temperature (Tg) and low dielectric properties of epoxy resin by adding it to epoxy resin, which is currently the main material used as a hardening agent for substrate prepreg, while maintaining the workability and adhesiveness characteristic of epoxy resin

Aiming for further growth through expansion of G47Δ pharmaceutical in the treatment field and deployment to CDMOs, as well as strengthening existing businesses

Denka Special c) G47Δ, Oncolytic Herpes Virus and deployment to CDMOs specialized in virus formulation

G47Δ Net Sales **FY2030 70.0 billion yen**

Expanding manufacturing capacity to deliver G47Δ pharmaceutical to patients with malignant glioma as soon as possible

(Phase 1: End of FY2025; Phase 2: Second half of FY2027)

Uniqueness: The world's first approved oncolytic therapeutic virus for malignant glioma (brain tumors)

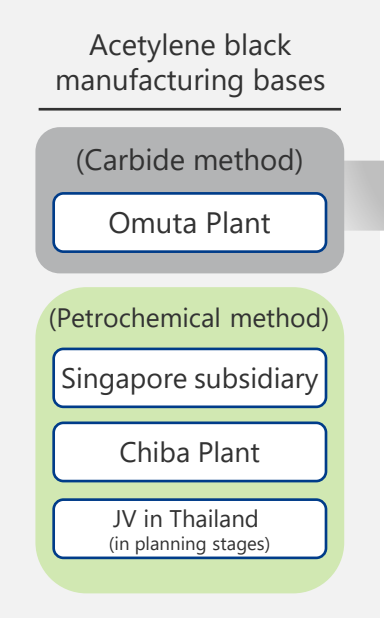
Potential market size
- a) Number of patients with malignant glioma *1
- b) Adaptation to other cancers (clinical studies)
- c) Deployment to the domain of CDMOs specialized in virus formulation*2

*1 (Number of new patients with malignant glioma per year)
About 3,000 patients in Japan, 50,000 in Europe and the U.S., and more if China is included

*2 CDMO: Contract development and manufacturing organization

Toward large-scale mass production of acetylene with low environmental impact thanks to process conversion to M to A

Denka Special d-1) Introducing M to A (Methane to Acetylene) at the Omuta Plant



Continued production using the carbide method, which has high CO_2 emissions

In light of ESG considerations, though the decision was made to halt production, it was decided to resume production in order to respond to the rapidly growing demand for LiBs for EVs

Toward converting manufacturing from the carbide method

To reduce CO_2 emissions, we decided to introduce demonstration plant for a new process to produce acetylene from methane developed by Transform Materials, a venture company in the U.S.
We demonstrate this technology and conduct joint research on technological improvements toward large-scale mass production of acetylene

(Reference: Released May 25, 2023)
https://www.denka.co.jp/eng/storage/news/pdf/449/20230525_denka_mtoa_en.pdf

- The establishment of a manufacturing process for ensuring stable acetylene supply with low environmental impact was approved for a grant of approximately 3.3 billion yen and is in compliance with METI's economic security policy of enhancing the domestic supply chain for storage batteries
- Process conversion to M to A generates hydrogen along with acetylene.
  Further reduction of CO_2 emissions is also expected through effective use of hydrogen energy

Deploying the new M to A manufacturing method to the carbide chain at the Omi Plant, which has our unique hydroelectric power generation system, to achieve low-carbon chloroprene rubber and utilization of hydrogen energy

Denka Special d-2) Deploying Hydroelectric Power Generation + M to A (Methane to Acetylene) at the Omi Plant

Hydroelectric Power + M to A = Low-carbon chloroprene rubber + hydrogen

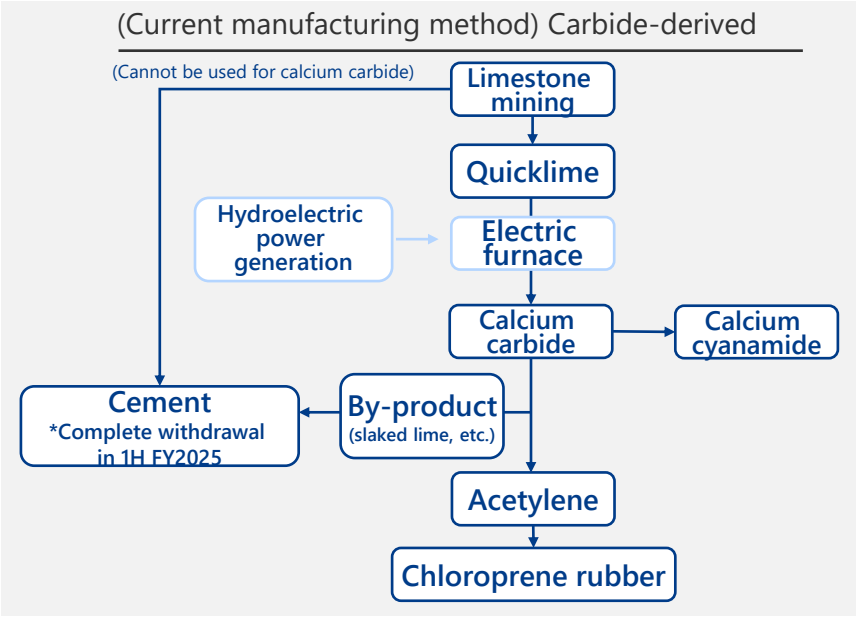
Uniqueness:
Effective use of Company-owned hydroelectric power generation, which has a total maximum output of 140,000 kW

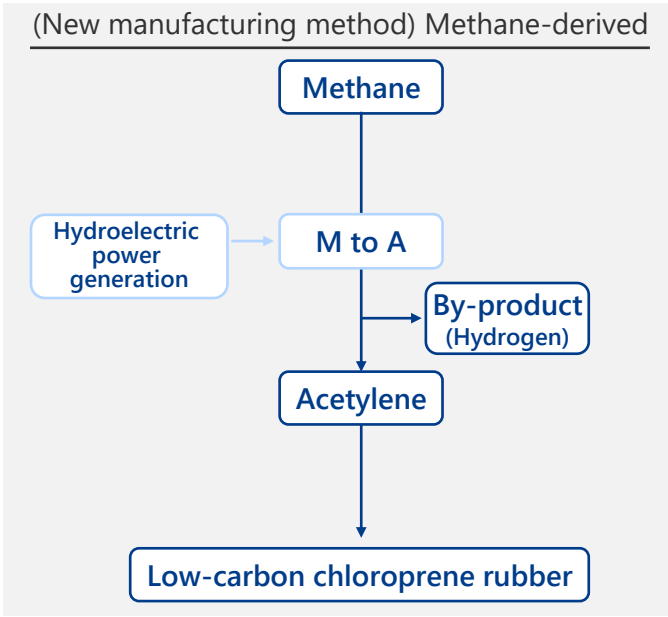
Uniqueness:
Commercialization of new manufacturing method technology, utilizing manufacturing expertise cultivated through the current method of producing acetylene from limestone

Highly functional chloroprene rubber meets demand for low-carbon rubber

Exploring utilization of hydrogen (methanation, in-plant use, potential new hydrogen business, etc.)

CO_2 Reduction **300,000 tons** : Reduction amount including conversion from the carbide process and utilization of the hydrogen by-product





(Reference) 1st Half Breakdown (By Segment) (Year on Year)

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Sales (¥ billions)	FY2022 1H Actual	FY2023 1H Forecast	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	47.5	40.0	- 7.5	- 9.7	+ 2.2
Life Innovation	21.9	20.0	- 1.9	- 1.8	- 0.1
Elastomers & Infrastructure Solutions	62.9	57.5	- 5.4	- 11.3	+ 5.9
Polymer Solutions	63.6	65.0	+ 1.4	+ 5.1	- 3.7
Others	7.0	7.5	+ 0.5	+ 0.5	-
Total	202.9	190.0	- 12.9	- 17.3	+ 4.4

Operating Income (¥ billions)	FY2022 1H Actual	FY2023 1H Forecast	Incr. Decr.	Volume	Pricing	Cost& Others
Electronics & Innovative Products	9.6	4.0	- 5.6	- 4.4	+ 2.2	- 3.5
Life Innovation	6.5	5.0	- 1.5	- 0.8	- 0.1	- 0.6
Elastomers & Infrastructure Solutions	1.3	-1.5	- 2.8	- 5.0	+ 5.9	- 3.8
Polymer Solutions	-0.2	0.5	+ 0.7	+ 0.1	- 3.7	+ 4.3
Others	1.0	1.0	- 0.0	- 0.1	-	+ 0.1
Total	18.3	9.0	- 9.3	- 10.2	+ 4.4	- 3.5

Denka

Sales (¥ billions)	FY2022 Actual	FY2023 Initial Forecast	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	93.5	100.0	+ 6.5	+ 5.9	+ 0.6
Life Innovation	47.5	45.0	- 2.5	- 1.5	- 1.0
Elastomers & Infrastructure Solutions	123.8	130.0	+ 6.2	+ 1.1	+ 5.1
Polymer Solutions	127.6	140.0	+12.4	+ 19.3	- 6.9
Others	15.1	15.0	- 0.1	- 0.1	-
Total	407.6	430.0	+22.4	+ 24.7	- 2.2

Operating Income (¥ billions)	FY2022 Actual	FY2023 Initial Forecast	Incr. Decr.	Volume	Pricing	Cost& Others
Electronics & Innovative Products	18.0	15.0	- 3.0	+ 3.6	+ 0.6	- 7.1
Life Innovation	14.4	9.5	- 4.9	- 0.8	- 1.0	- 3.0
Elastomers & Infrastructure Solutions	- 1.1	2.5	+ 3.6	+ 1.9	+ 5.1	- 3.4
Polymer Solutions	-1.2	4.5	+ 5.7	+ 3.4	- 6.9	+ 9.2
Others	2.3	1.5	- 0.8	- 0.8	-	-
Total	32.3	33.0	+ 0.7	+ 7.2	- 2.2	- 4.3

(Reference) Quarterly Trends (By Segment)

Denka

Sales (¥billions)	FY2021				FY2022				FY2023	
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q Actual	2Q Forecast
Electronics & Innovative Products	21.0	22.8	22.3	24.0	21.9	25.6	22.3	23.8	19.2	20.8
Life Innovation	6.0	19.3	10.9	9.9	6.4	15.5	16.9	8.8	7.2	12.8
Elastomers & Infrastructure Solutions	24.6	26.8	26.1	29.3	30.4	32.5	31.6	29.3	28.0	29.5
Polymer Solutions	31.8	31.5	29.5	33.9	31.6	32.0	30.3	33.7	29.8	35.2
Others	3.5	4.0	4.0	3.7	4.1	2.9	4.7	3.4	3.7	3.8
Total	86.7	104.4	92.8	100.9	94.4	108.6	105.8	98.8	87.8	102.2

Operating Income (¥ billions)	FY2021				FY2022				FY2023	
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q Actual	2Q Forecast
Electronics & Innovative Products	4.4	4.8	4.6	4.9	4.1	5.6	4.1	4.2	2.1	1.9
Life Innovation	0.3	10.4	1.2	3.6	0.5	6.0	5.0	2.8	0.9	4.1
Elastomers & Infrastructure Solutions	0.1	-0.0	-1.2	-2.3	-0.2	1.5	-1.3	-1.1	-0.7	-0.8
Polymer Solutions	2.6	1.8	1.9	1.6	-0.1	-0.0	-0.9	-0.1	-0.0	0.5
Others	0.4	0.5	0.4	0.2	0.6	0.4	0.9	0.4	0.5	0.5
Total	7.7	17.5	7.0	7.9	4.9	13.4	7.8	6.3	2.8	6.2

Cautionary statement regarding forward-looking information

Target figures in this material are not forecasts of business results.
In addition, any description relating to the future in this material is subject to known or unknown risks and uncertainties, although it is based on management's current assumptions and beliefs in light of the information currently available to it.
Please be cautioned that a number of important factors could cause actual results to differ significantly from the description in the material.
Such risks and uncertainties include adverse economic conditions, currency exchange rate fluctuations, adverse legislative and regulatory developments, delays in new product launch, pricing, and product initiatives of competitors, the inability of the Company to market existing and new products effectively, interruptions in production, infringements of the company's intellectual property rights and the adverse outcome of material litigation.

Possibility of chemistry

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Inquiries regarding this material

Corporate Communications Dept,
Denka Co., Ltd.

TEL 03-5290-5511

URL https://www.denka.co.jp/eng/