



Furukawa Electric Co., Ltd.

Q2 Financial Results Briefing for the Fiscal Year Ending March 2023

November 8, 2022

[Number of Speakers]

2

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Kobayashi: Ladies and gentlemen, it has been a very long time since our last meeting. I am Kobayashi of Furukawa Electric. Thank you very much for taking time out of your busy schedule to attend this briefing today.

Please turn to the third page of the document for the contents of the explanation.

As shown here, I will explain from the key points of the financial results for H1 of FY2022 to the sale of shares of consolidated subsidiaries. Fukunaga will then explain the last part of the presentation from the summary P&L for H1 of FY2022 to capital expenditures, depreciation, and R&D expenses.

FY2022 H1 Results Highlights

- Higher revenue from the impact of foreign currency exchange, higher copper prices and mainly the Automotive Products & Batteries business
- Although operating income received a boost from foreign currency exchange, it declined due to soaring raw material and fuel prices at a whole group and lower customer production volumes in the Automotive Products & Batteries business
- Secured increased ordinary income and net income attributable to owners of the parent company

(JPY billion, JPY/kg, JPY/USD)

	FY20_H1	FY21_H1	FY22_H1	YoY change	
	a	b	c	c-b	(Comparison with last year)
Net Sales	354.5	447.3	524.5	+77.3	Higher revenue: Infrastructure, Electronics & Automotive Systems and Functional Products segments
Operating income	▲ 3.3	7.2	4.6	▲ 2.7	Increased income: Infrastructure and Functional Products segments Decreased income: Electronics & Automotive Systems segment
Ordinary income	▲ 6.0	10.8	14.0	+3.2	Higher foreign currency exchange gain and equity method investment gain
Net income attributable to owners of the parent	1.6	7.2	7.9	+0.7	Lower extraordinary profit
Average copper price	675	1,092	1,205		
Average exchange rate	107	110	134		

Let's turn to page four, the key points of the financial results for H1 of FY2022.

As shown in the table below, in H1 of FY2022, net sales were JPY524.5 billion, operating income JPY4.6 billion, ordinary income JPY14.0 billion, and net income JPY7.9 billion.

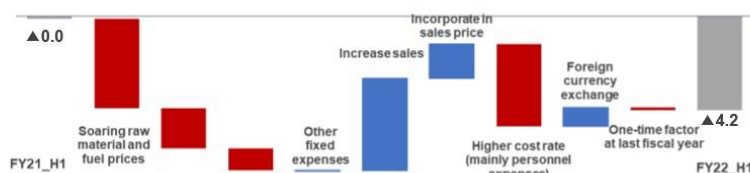
Profits increased due to foreign exchange effects and higher copper quotations, and mainly the Automotive Products and Batteries business. Operating income decreased due to soaring raw material and fuel prices in the entire company and the impact of customers' production cutbacks in the Automotive Products and Batteries business, despite the impact of foreign exchange rates. Ordinary income and net income attributable to owners of the parent increased.

Among these, the automotive products business is the one with the most challenges, so I would like to explain the automotive products business in some detail.

Automotive Products & Batteries business

- Made progress in incorporating the soaring raw material and fuel prices and higher logistics expenses in the sales price, and the full effects will be realized from Q3
- Personnel expense ratio rose due to the lockdowns in China and changes to customers' production plans

[Changes in operating income (H1)]



- Soaring raw material and fuel prices and higher logistics expenses
- Longer logistics lead times
- Higher cost rate (Mainly personnel expenses)
- Persistently high inventory levels

Details provided on the following pages

See page five.

First of all, the lower part of this document shows the factors behind the increase and decrease in operating income for H1 of the fiscal year. The leftmost figure is minus zero for H1 of FY2021, and then the price of raw materials and fuel soared, logistics costs increased, and depreciation and amortization expenses went to the minus side, which was brought up through sales, price transfers, restraint of fixed costs,.

However, due to an increase in the cost of sales ratio and other factors, the final result for this segment was a negative JPY4.2 billion.

Automotive Products & Batteries business : Response to the issues and status of progress

Issue	Response	Status of progress								
Soaring raw material & fuel prices and higher logistics expenses	<p>Incorporate the higher costs in the sales price (application of market based pricing) Discuss and negotiate with customers aimed at reaching an agreement during H1</p> <p>Invoice the expenses incurred following changes to the production plan by the customer</p>	<p>Expect to incorporate the higher costs in the sales price as anticipated</p> <table border="1"> <tr> <td>Metals (copper/ aluminum) & resin</td> <td>Continuing negotiations directed at increasing the application rate</td> </tr> <tr> <td>Components and materials specified by the customer</td> <td>Complete</td> </tr> <tr> <td>Secondary materials (electronic components, etc.)</td> <td>Determine the share of costs through discussions with the customer (Negotiations remain ongoing)</td> </tr> <tr> <td>Logistics expenses</td> <td>Determine the share of costs through discussions with the customer (Same as above)</td> </tr> </table> <p>→ Although some expenses have been recovered from Q1, full-scale recovery including retroactively from the start of the fiscal year is expected to occur from Q3 (Negotiations and discussions remain ongoing)</p> <ul style="list-style-type: none"> Air freights : Fully recover air freight expenses incurred due to reasons attributable to the customer (Q1-) Warehouse expenses: Fully recover expenses incurred due to reasons attributable to the customer (Q1-) Inventory purchases: Currently negotiating with customers 	Metals (copper/ aluminum) & resin	Continuing negotiations directed at increasing the application rate	Components and materials specified by the customer	Complete	Secondary materials (electronic components, etc.)	Determine the share of costs through discussions with the customer (Negotiations remain ongoing)	Logistics expenses	Determine the share of costs through discussions with the customer (Same as above)
Metals (copper/ aluminum) & resin	Continuing negotiations directed at increasing the application rate									
Components and materials specified by the customer	Complete									
Secondary materials (electronic components, etc.)	Determine the share of costs through discussions with the customer (Negotiations remain ongoing)									
Logistics expenses	Determine the share of costs through discussions with the customer (Same as above)									
<div style="display: flex; align-items: center;"> <div style="background-color: #0056b3; color: white; padding: 5px; margin-right: 10px;">Forecast for incorporating the higher costs in the sales price and recovering incurred expenses</div> </div>										

We would like to provide you with a detailed explanation of the issues. See page six.

The challenges we have identified are rising raw material and fuel prices, increased logistics costs, longer logistics lead times, rising cost ratios, and high inventory levels.

First of all, this table shows the issues I mentioned on the left side, the first of which is how to respond to soaring raw material and fuel prices and increased logistics costs. The right side shows the progress.

We have been discussing and negotiating with our customers to reach an agreement on the price shift in H1 of this fiscal year. The price pass-through is expected to be generally applied as assumed, as indicated on the right side of the table. The bar graph below shows the forecast of recovery, including some recovery from Q1 and full recovery from Q3 onward, including the retroactive portion at the beginning of the fiscal year.

From left to right, the projected payback is divided into each quarter. Although not the full amount of the increased cost, we expect to recover about five times the amount in Q3 and Q4 compared to Q1 and Q2.

Of course, there is also a claim for costs incurred in accordance with the customers' production plans, and air and warehouse costs have already been agreed upon, as noted on the right side. The situation is that the purchase of the inventory is under negotiation.

Automotive Products & Batteries business : Response to the issues and status of progress

Issue	Response	Status of progress
Longer logistics lead times	Revise the logistics routes	<ul style="list-style-type: none"> Jointly use routes to the east coast for shipments to North America (Already completed from the start of the fiscal year)
	Revise the transaction terms for maritime cargo	<ul style="list-style-type: none"> Changed from spot contracts to annual contracts (Already completed from the start of the fiscal year)
Higher cost rate (mainly personnel expenses)	Respond in accordance with the changes to the production plan	<ul style="list-style-type: none"> In Q2, temporarily furloughed employees in Vietnam Although preparations were made in Q2 for increased production from September, the personnel expense ratio increased as a result of changes to the customers' production plans.
	Increase and train personnel in preparation for increased production	<ul style="list-style-type: none"> Although efforts are being made to secure skilled workers and enhance training, failed to achieve the targeted productivity level
	Further promote automation through the use of DX	<ul style="list-style-type: none"> Reduce labor requirements through the creation of component configuration tables by utilizing RPA* (already enacted) Reduce labor requirements by automating the inspection process (enacting) <p>*RPA : Robotic Process Automation</p>

See the next page. The second and third issues are shown here.

First of all, with regard to the lengthening of logistics lead times, we are reviewing logistics routes and the terms and conditions of offshore transportation transactions.

On the other hand, the increase in the cost ratio, which is mainly labor costs, is one of the responses to the change in the production plan. In Q2, we temporarily laid off our workers at the Vietnam base, but after September, due to the situation of production again, we brought back the staff. However, the customers' plans have changed, despite our efforts for preparations to increase production starting in September. As a result, the ratio of personnel expenses has increased.

Since there was a proposal to increase production, we have been increasing the number of workers and further training them, but we still need to secure skilled workers and strengthen training, so we have not yet reached our productivity target.

The promotion and reinforcement of automation through the use of DX is progressing smoothly, and one of our achievements is that we have been able to greatly reduce the number of workers through the use of RPA.

Automotive Products & Batteries business : Response to the issues and status of progress

Issue	Response	Status of progress
<p>Persistently high inventory levels</p>	<p>Restructure and improve based on "Adjust as the Case".</p> <p><small>*Concept of appropriately designing the inventory structure based on the changes in the business environment</small></p>	<p>Design and improvement cycle for inventory based on "Adjust as the Case"</p> <p>(Actions being taken)</p> <ul style="list-style-type: none"> • Set and secure inventory levels based on conducting flexible production • Set and secure inventory levels based on the procurement risk factors • Develop and secure new overseas transportation routes <p>→In line with the changing business environment, constantly maintain inventory at optimum levels</p>

The next, the fifth point is the high level of inventories. Page eight.

The Furukawa Electric Group is promoting the so-called five improvements, and checking the status of management with the goal of "Just in Time."

The five ways of improvement are: how to make; how to carry, these are about inventory; how to transport, this is about transportation; how to sell; and how to buy. We are now looking at how we are managing these issues, with the aim of achieving the just in time approach. However, in the current situation, we were not able to deliver proper products to our customers. Therefore, we are improving the restructuring in the form of "Adjust as the Case."

This progress is illustrated in the figure on the right, which shows how the product is progressing in the process toward the goal of Just in Time. In addition, we originally envisioned Just in Time as the ideal state, based on a structural analysis that shows which processes, such as raw materials, work in process, product inventory, or inventory at the bottleneck point, are involved in the production process.

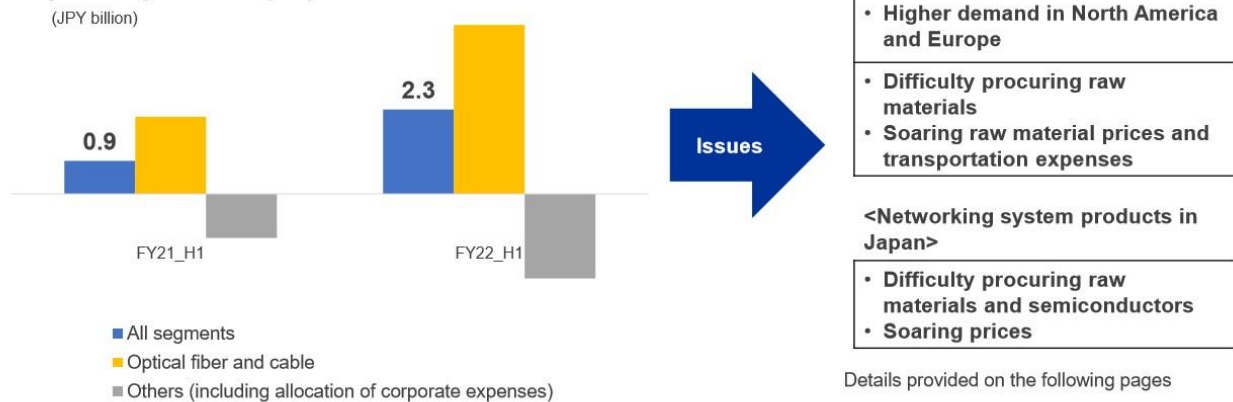
However, due to changes in the external environment and new exogenous factors, this will not be the case. Therefore, while reviewing our business strategy on a case-by-case basis, we are constantly improving our inventory structure in consideration of the external environment, always repeating the PDCA cycle to achieve our goal and moving toward that goal. We are not yet in a situation where we have seen results, but we are now proceeding with setting and securing inventory levels based on a flexible production system and response.

These were the situation of automotive and products business.

Communications Solutions Segment

- In the overall segment, profit increased as a result of higher net sales in the optical fiber and cable business and improved productivity
- Profit deteriorated in networking system products in Japan due to factors of raw material and semiconductor. Currently implementing recovery measures

【Operating income (H1)】



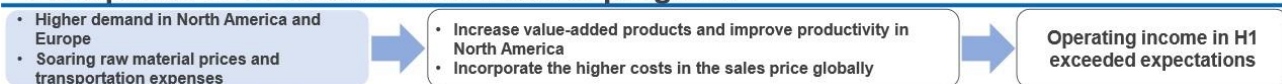
Page nine. I will now explain the Communications Solutions segment.

In the graph below, the blue bars represent the overall figures, which were explained in the past. However, in order to present the reality correctly, fiber cables are shown in orange, and other businesses are shown in gray.

As shown in the upper row, segment income as a whole increased due to higher sales and improved productivity in the fiber and cable business. On the other hand, domestic network-related products suffered a deterioration in profit, mainly due to raw material and semiconductor factors, and we are now promoting measures to recover the situation.

The same is shown on the right side regarding the issues. I would like to explain on this.

Optical fiber and cable business : Response to the issues and status of progress



Issue	Response	Status of progress
Higher demand in North America and Europe	Increase sales of value-added products <ul style="list-style-type: none"> RR (Rollable ribbon) cable Specialty fibers 	Sales trend* of optical fiber and cable in North America <p>* Including exports from bases in Europe and Japan</p>
	Secure personnel directed at increasing production volumes at the optical cable manufacturing site in North America	
	Increase production capacity of the optical cable site in Morocco	<ul style="list-style-type: none"> Both sales volumes and component ratio of RR cable are increasing in North America (RR ratio : FY21_H1 18% → FY22_H1 34%) Specialty fibers (for industrial and medical applications) are also performing well.
<ul style="list-style-type: none"> Difficulty procuring raw materials Soaring raw material prices and transportation expenses 	Stable procurement	<ul style="list-style-type: none"> Increasing personnel as planned through new hiring. In addition, the turnover rate has improved recently Going forward, work to improve skill levels and increase productivity.
	Incorporate the higher costs in the sales price	<ul style="list-style-type: none"> From Q3, increase cost competitiveness in Europe by bringing the transferred equipment on line Increase sales of RR cable for data centers and strengthen the connections with the networking systems business of FEL
		<ul style="list-style-type: none"> Secured supply of helium from the second half of Q2 (at a higher price) Expect the procurement environment to improve following increased supply going forward
		<ul style="list-style-type: none"> Outstanding optical cable orders in North America are steadily declining toward reaching ideal situation Make progress in incorporating the higher costs in the sales price in North America. Continuing the efforts to incorporate the higher costs in the sale price in all regions

Page 10. First, I would like to discuss measures to address issues in the fiber and cable business and the progress being made.

Furukawa has not been able to easily meet the increased demand in North America and Europe. We have been instructed by many people that we must first firmly plant our feet on the ground.

The top row, sales expansion of value-added products, is progressing well. The graph on the right compares H1 of FY2021 and H1 of FY2022, and this bar graph shows the fiber length. Although it appears that the sales have decreased due to this relationship, both cable length and sales have increased. Sales of rollable ribbon cables are increasing as targeted, and sales of specialty fibers are also doing well.

The second step, securing human resources to increase production at our North American fiber optic cable bases has also increased as planned, and the current shortage rate is also improving. It is important for us to improve our proficiency and productivity. Of course, we are also enhancing our optical cable base in Morocco.

The second challenge is the difficulty in procuring raw materials and the rising costs of the transportation of raw materials. As you can see on the right, we have already secured stable procurement for this item.

In addition, the procurement environment is expected to improve. As for price shifting, the backlog of orders for optical cables in North America is steadily implementing toward the ideal level, and we are making progress in price shifting.

This is the situation.

Networking system products in Japan :Response to the issues and status of progress

Although the CATV device market in Japan remains steady, there is difficulty procuring semiconductors / soaring prices



Secure semiconductors, switch to new models, change the design
Make progress in incorporating the higher costs in the sales price



Expect to achieve the H2 profit forecast

Issue	Response	Status of progress
Difficulty procuring raw materials and semiconductors	<ul style="list-style-type: none"> Secure strategic inventory by grasping the lead time for raw materials and components, and procure in installments through long-term advance orders Reduce risk by switching to new models and changing the design Expand procurement routes / Procure alternative materials and components 	<ul style="list-style-type: none"> Successfully reducing the impact of semiconductor lead times by securing strategic inventory, placing long-term advance orders and switching to new models Currently expanding the procurement routes and evaluating/ procuring alternative materials <p>※ Conversely, the number of affected semiconductor products has expanded, and lead times have increased Restrictions have been enacted on orders for some products The impact resulting from the difficulty procuring semiconductors is expected to remain ongoing into FY2023</p>
Soaring prices	Incorporate the higher costs in the sales price (Set sales prices at appropriate levels)	Incorporated the higher costs in the sales price for some products. Based on further increases in raw material prices, continue to incorporate the higher costs in the sales price

- Under the 2025 medium-term management plan, further strengthen technology development, including the fusion of FTTH and wireless, and focus on increasing customer value
- Strengthen the framework for close cooperation with customers through utilization of the application laboratory established in the summer of this year

However, a major challenge is the domestic network. Next, page 11.

The cable television equipment market in Japan is doing very well. However, we are facing difficulties in the procurement of semiconductors and a sharp rise in their prices.


As described in the issues section, we have been able to minimize the impact of the problem by understanding the lead time of raw materials and components, securing strategic inventories, and procuring in installments by placing long-term advance orders.

However, if the situation continues as is, the situation will become even more difficult, so we are working to reduce risk by switching to new models and changing the design. Of course, we are also working on procurement routes, including procurement from various sources, but the number of semiconductor types which is affected is still expanding, and long delivery times may occur, which is expected to continue into the next fiscal year.

We are continuing to promote price shifting due to price hikes.

Macro Indicators (Changes from the initial assumptions)

Since the start of the fiscal year, the main economic indicators and semiconductor market environment have significantly deteriorated

	Direction of change	2022 Outlook : Initial (Apr. 2022) → Nov. 2022
World's GDP		From 3.3 to 2.9% (▲0.4%)
Japan's GDP		From 2.6 to 1.8% (▲0.8%)
U.S. economy		From 2.8 to 1.6% (▲1.2%)
Automotive market		Global production is forecast to be from 80.3 million to 79.7 million (▲0.6 million cars)
Semiconductor market		Growth rate of semiconductor shipments is forecast to increase from 13 to 6% (▲7%)

(Note) Our forecast. Japan's GDP is the annual growth rate

On page 12, you will find a list of macroeconomic indicators that we have estimated. This is a change from the assumption at the beginning of the period.

We presented this plan to you at the beginning of the year with a fairly severe forecast of growth. In response to this situation, the world GDP, Japan's GDP, the US economy, the automobile market, and the semiconductor market are not in good shape.

However, since we have been proceeding with the response in a predictable manner, we have determined that it is within the range of variation.

As a result, please see the next page.

Revised FY2022 Full-year Forecasts (Operating income)

Compared to the previous forecast, the Infrastructure segment has been revised up and Electronics & Automotive Systems has been revised down

		(JPY billion)	Main revisions
Infrastructure	Communications Solutions		(+) Incorporate the soaring raw material and fuel prices in the sales price (+) Improvements to the product mix (Optical cable, specialty fibers) (+) Foreign currency exchange
	Energy Infrastructure	(No change)	
Electronics & Automotive Systems	Automotive Products & Batteries		(-) Higher personnel expense ratio caused by the lockdowns in China and changes in customers' production plans
	Electronics Component Materials	(No change)	
Functional Products	(No change)		

Page 13. We have revised our full-year forecast for FY2022.

Compared to the previous forecast, Communications Solutions business in the Infrastructure segment is expected to increase by JPY3.0 billion. Factors behind the revision include price shifts, improvement in product mix, and foreign exchange rates.

On the other hand, there are still some changes in the production plan for automobiles due to the effects of the lockdown. In light of these factors, we have made a downward revision of JPY3.0 billion to our forecast, but we have not made any changes to the total.

Revised FY2022 Full-year Forecasts

- Revised the net sales and operating income forecast for several segments (overall forecast remains unchanged)
- After incorporating the gain in the sale of shares of a consolidated subsidiary, net income has been revised up

	(JPY billion, JPY/kg, JPY/USD)							
	FY20	FY21	*FY22 Previous forecasts	FY22	YoY change	Change from previous forecasts		
	a	b	c	d	d-b	d-c		
Net Sales	811.6	930.5	1,050.0	1,050.0	+119.5	—	Revised up: Infrastructure segment Revised down: Functional Products segment	
Operating income	8.4	11.4	22.5	22.5	+11.1	—	Revised up: Infrastructure segment Revised down: Electronics & Automotive Systems segment	
Ordinary income	5.2	19.7	26.0	28.0	+8.3	+2.0	Following the change to the exchange rate assumption, higher gain on foreign currency exchange	
Net income attributable to owners of the parent	10.0	10.1	14.0	21.0	+10.9	+7.0	Incorporate extraordinary profit of JPY 10.7 billion from the sale of shares of a consolidated subsidiary	
Average copper price	770	1,136	1,260	1,128 (H2 Assumption : 1,050)				
Average exchange rate	106	112	120	137 (H2 Assumption : 140)				
			*Announced on May 12, 2022					※ Impact of the sale of a consolidated subsidiary Net sales: JPY ▲4.7 billion, Operating income: JPY ▲0.7 billion

**Dividend for the fiscal year ending March 31, 2023 is unchanged
from the year-end dividend forecast of ¥60 per share announced on May 12, 2022.**

Under these circumstances, the forecast for the full year is as shown on page 14.

Sales and operating income have been revised in some segments, but the forecast of all segments remains unchanged.

Net sales were JPY1,050.0 billion, and operating income was JPY22.5 billion. Ordinary income increased by JPY2.0 billion to JPY28.0 billion due to changes in foreign exchange rate assumptions. Net income is JPY21.0 billion, which includes the portion of extraordinary income from the sale of consolidated subsidiaries.

Dividends remain unchanged.

Concluded an agreement to subscribe to the tender offer for shares of TOTOKU ELECTRIC CO., Ltd.*

<Background and reason>

In accordance with the Medium-term Management Plan “Road to Vision 2030”,

- “Make the position of each business visible” and “reorganize the business portfolio through optimum investment allocation” based on the positioning of each business
- Consider the handling of listed subsidiaries in the Furukawa Electric Group



**Concentrating the group’s strengths and management resources
on domains with growth potential**

**Invest in and allocate resources to businesses that will contribute to future growth
(Domains that combine information, energy and mobility, DX, the environment, etc.)**

*TOTOKU ELECTRIC CO., LTD.: Develops and manufactures products with originality in areas such as electric wire, heater products, cable processed products and processed wire products based on technology cultivated in material development. The company is active on a global scale and became a consolidated subsidiary of Furukawa Electric Co., Ltd. in 2012

As my final remarks, I would like to explain the sale of shares of consolidated subsidiaries.

As announced at 3:15 PM today, we have entered into a tender agreement for the tender offer for the shares of TOTOKU ELECTRIC CO., LTD.

TOTOKU is in the process of reviewing its business portfolio by visualizing its business positioning and optimizing investment allocations accordingly in our Road to Vision 2030, our medium-term management plan.

In addition, we have made this decision after comprehensively taking into consideration a number of factors, including our consideration of the nature of our listed subsidiary.

We are pleased to announce that we will realize this in order to focus the Group's strengths and management resources on areas where growth is expected.

That is all from me. Fukunaga will continue the explanation.

FY2022 H1 Results – P/L Summary

(JPY billion, JPY/kg, JPY/USD)

	FY20_H1	FY21_H1	FY22_H1	YonY change	Breakdown of change (FY21_H1⇒FY22_H1)
	a	b	c	c-b	
Net sales	354.5	447.3	524.5	+77.3	+77.3 (+17%) See page 19
Operating income	▲ 3.3	7.2	4.6	▲ 2.7	▲2.7 (▲37%) See page 20
(Margin)	▲ 0.9%	1.6%	0.9%	▲ 0.7	
Profit/loss in equity method affiliates	▲ 1.1	4.3	5.7	+1.4	
Foreign exchange gain/loss	▲ 0.4	0.4	4.7	+4.4	
Ordinary income	▲ 6.0	10.8	14.0	+3.2	▲3.2 (+30%)
(Margin)	▲ 1.7%	2.4%	2.7%	+0.3	
Extraordinary income/loss	11.5	2.3	0.1	▲ 2.2	-Extraordinary income ▲2.2 (3.5→1.3)
Income taxes	▲ 3.4	▲ 4.8	▲ 5.9	▲ 1.1	
Net income attributable to non-controlling interests	▲ 0.6	▲ 1.1	▲ 0.3	+0.8	-Extraordinary loss +0.0 (▲1.2→▲1.2)
Net income attributable to owners of parent	1.6	7.2	7.9	+0.7	+0.7 (+10%)
(Margin)	0.4%	1.6%	1.5%	▲ 0.1	
Average copper price	675	1,092	1,205	–	
Average exchange rate	107	110	134	–	

Fukunaga: My name is Fukunaga. I will continue to discuss the details of the financial results.

See page 18. This is the summary P&L for H1. Sales and operating income will be explained later in the waterfall document.

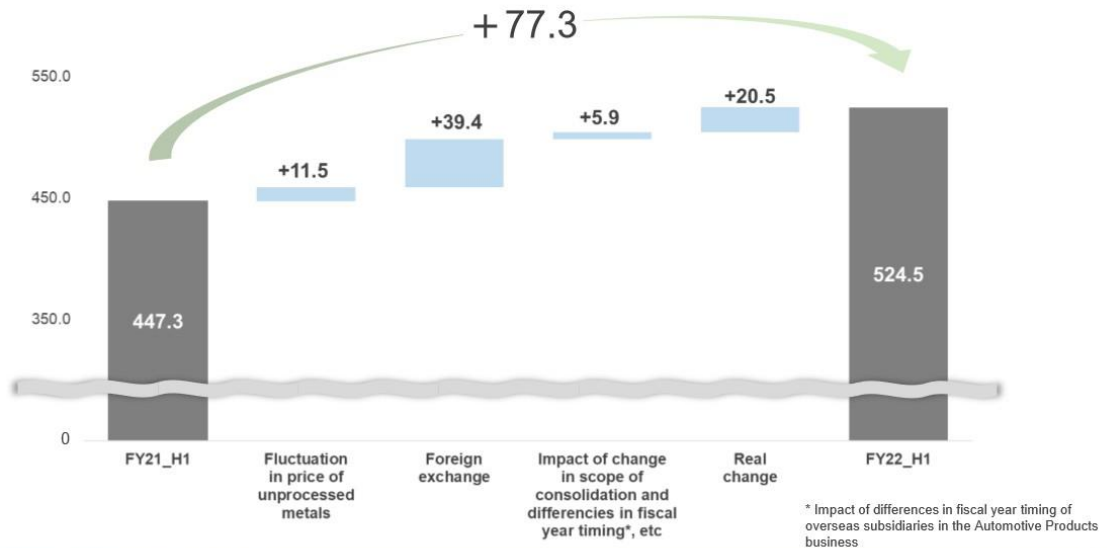
In the area of operating income and below, UACJ recorded a negative equity in earnings of affiliates, but other equity method subsidiaries improved and turned to a positive figure. Foreign exchange gains and losses are also positive.

Extraordinary gains and losses are negative because of the absence of extraordinary gains that were posted last year.

The final amount after taxes, etc., was JPY7.9 billion, resulting in an increase in both sales and income on a net income basis.

Analysis of Changes in Net Sales (YoY)

(JPY billion)

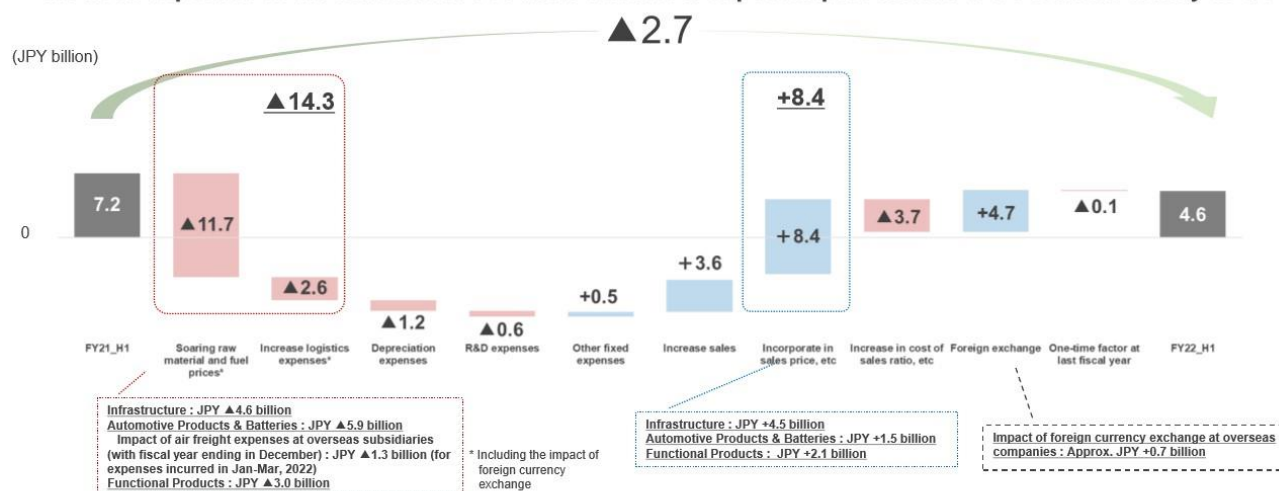


Then, see page 19. Here is the waterfall factor analysis of sales performance.

This is an increase of JPY77.3 billion from last year. The breakdown includes bullion prices, foreign exchange, and consolidation scope shift and fiscal year-end shift. Excluding these factors, the real fluctuation was a positive JPY20.5 billion.

Analysis of Changes in Operating Income (YoY)

- Lower profit due to an inability to fully cover the soaring raw material and fuel* prices and increased logistics expenses through price revisions and lowering the cost of manufacturing
- Discussions and negotiations are ongoing with customers concerning price revisions and invoicing incurred expenses in the Automotive Products business. Expect improvements to be realized mainly in Q4



This is followed by a waterfall of factors contributing to the increase or decrease in operating income. See page 20.

The profit decreased by JPY2.7 billion from last year. The breakdown is shown separately.

The left side, circled in red. The impact of higher raw material and fuel costs and logistics costs was negative JPY14.3 billion. In contrast, a little to the right of the middle, circled in blue, this was plus JPY8.4 billion. This is a result of a price shift or a request for cost sharing. This difference is one of the first reasons for the decrease in profit.

In terms of sales increase, there was an increase of JPY3.6 billion, but as explained at the beginning of this report, there was a decrease of JPY3.7 billion due to an increase in the cost of sales ratio, especially in the Automotive Products & Batteries business, and an increase in the ratio of labor costs. The difference is almost entirely offset here.

On the other hand, foreign exchange rates had a positive impact of JPY4.7 billion. The difference in exchange rates was about JPY0.7 billion, and the remainder was due to the positive effect of exchange rates on the business. Sensitivity is the same as before. The sensitivity per dollar is roughly between JPY0.3 to JPY0.4 billion, and the actual results have been within this range.

FY2022 Full-year Forecasts – P/L Summary

(JPY billion, JPY/kg, JPY/USD)

	FY20	FY21	*FY22 Previous forecasts	FY22 forecasts	YonY change	YonY change	(Comparison with previous forecasts)
	a	b	c	d	d-b	d-c	
Net sales	811.6	930.5	1,050.0	1,050.0	+119.5	-	
Operating income	8.4	11.4	22.5	22.5	+11.1	-	Change to foreign currency exchange rate levels and copper price
(Margin)	1.0%	1.2%	2.1%	2.1%	+0.9	+0.0	
Profit/loss in equity method affiliates	▲ 0.9	9.0	-	-	-	-	
Foreign exchange gain/loss	0.5	1.5	-	-	-	-	
Ordinary income	5.2	19.7	26.0	28.0	+8.3	+2.0	
(Margin)	0.6%	2.1%	2.5%	2.7%	+0.6	+0.2	
Extraordinary income/loss	16.1	0.8	▲ 3.0	7.9	+7.1	+10.9	
Income taxes	▲ 9.2	▲ 7.2	-	-	-	-	Extraordinary profit
Net income attributable to non-controlling interests	▲ 2.1	▲ 3.1	-	-	-	-	Gain on the sale of shares of a consolidated subsidiary of JPY 10.7 billion
Net income attributable to owners of the parent	10.0	10.1	14.0	21.0	+10.9	+7.0	Tax cost incurred due to recording extraordinary profit
(Margin)	1.2%	1.1%	1.3%	2.0%	+0.9	+0.7	
Average copper price	770	1,136	1,260	1,128	(H2 Assumption : 1,050)		
Average exchange rate	106	112	120	137	(H2 Assumption : 140)		

*Announced on May 12, 2022

Next, on page 21, is the summary P&L of the full-year forecast.

In the extraordinary income section, there is a gain on the sale of shares of a consolidated subsidiary, as I mentioned earlier. Since tax expenses are included in the above figure, against the gain on the sale of JPY10.7 billion, it has resulted in approximately JPY6.2 billion on a net income basis.

Net Sales and Operating Income by Segment (H1)

(JPY billion)

	Net sales				Operating income			
	FY20	FY21	FY22	YoY	FY20	FY21	FY22	YoY
	a	b	c	e-b	d	e	f	f-e
Infrastructure	122.2	142.9	159.8	+16.9	▲ 1.7	1.5	2.5	+1.0
Communications Solutions	76.3	92.8	108.0	+15.1	▲ 0.2	0.9	2.3	+1.4
Energy infrastructure	45.9	50.1	51.8	+1.7	▲ 1.5	0.7	0.2	▲ 0.4
Electronics & Automotive Systems	175.3	238.8	293.2	+54.5	▲ 3.0	2.4	▲ 1.8	▲ 4.2
Automotive Products & Batteries	95.2	120.4	157.9	+37.5	▲ 2.7	▲ 0.0	▲ 4.2	▲ 4.2
Electronics Component Materials	80.0	118.3	135.3	+17.0	▲ 0.4	2.4	2.4	+0.0
Functional Products	52.4	63.8	70.2	+6.3	2.2	4.0	4.9	+0.9
Service and Developments, etc.	20.7	20.5	14.8	▲ 5.7	▲ 0.9	▲ 0.6	▲ 1.0	▲ 0.4
Elimination of intra-company transactions	▲ 16.1	▲ 18.8	▲ 13.5	+5.3	0.1	▲ 0.1	▲ 0.0	+0.1
Total	354.5	447.3	524.5	+77.3	▲ 3.3	7.2	4.6	▲ 2.7

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Now, please continue to the next page. These are the results of sales and operating income by segment.

What is characteristic about this is the positive operating income in Communications Solutions business, while Automotive Products& Batteries business is negative, which is what I explained at the beginning of this report.

Net Sales and Operating Income by Segment (Full-year forecast)

	Net sales						Operating income					
	FY20	FY21	*FY22 Previous Forecasts	FY22	YoY	Change from previous forecasts	FY20	FY21	*FY22 Previous Forecasts	FY22	YoY	Change from previous forecasts
	a	b	c	d	d-b	d-c	e	f	g	h	h-f	h-g
Infrastructure	259.2	297.0	330.0	345.0	+48.0	+15.0	▲ 2.1	5.2	6.5	9.5	+4.3	+3.0
Communications Solutions	158.3	191.3	215.0	230.0	+38.7	+15.0	▲ 0.2	3.8	5.0	8.0	+4.2	+3.0
Energy infrastructure	100.9	105.7	115.0	115.0	+9.3	-	▲ 1.9	1.4	1.5	1.5	+0.1	-
Electronics & Automotive Systems	433.0	500.7	575.0	575.0	+74.3	-	5.9	0.1	10.0	7.0	+6.9	▲ 3.0
Automotive Products & Batteries	235.1	249.9	295.0	305.0	+55.1	+10.0	5.0	▲ 4.6	6.0	3.0	+7.6	▲ 3.0
Electronics Component Materials	198.0	250.8	280.0	270.0	+19.2	▲ 10.0	0.9	4.8	4.0	4.0	▲ 0.8	-
Functional Products	114.7	130.0	155.0	140.0	+10.0	▲ 15.0	6.3	7.6	8.5	8.5	+0.9	-
Service and Developments, etc.	38.7	34.5	30.0	30.0	▲ 4.5	-	▲ 1.7	▲ 1.4	▲ 2.5	▲ 2.5	▲ 1.1	-
Elimination of intra-company transactions	▲ 34.0	▲ 31.6	▲ 40.0	▲ 40.0	▲ 8.4	-	0.1	▲ 0.1	0.0	0.0	+0.1	-
Total	811.6	930.5	1,050.0	1,050.0	+119.5	-	8.4	11.4	22.5	22.5	+11.1	-

*Announced on May 12, 2022

*Announced on May 12, 2022

Next is page 24. These are the full-year forecasts for net sales and operating income by segment.

Sales have increased or decreased depending on the segment, but overall sales have remained unchanged.

As for operating income, as I explained earlier, operating income increased in the Communications Solutions business. On the other hand, profits in Automotive Products& Batteries business declined, and we have not changed our full-year operating income forecast.

1-(1) Infrastructure (Communications Solutions)

FY22_H1 Results



FY22_Full-year forecasts



[H1 Operating income compared to last year]

- (+) Increased optical cable and networking systems business revenue in the Americas (higher ratio of high value-added products)
- (+) Incorporated the soaring raw material and fuel prices in the sales price
- (+) Increased optical cable productivity in North America
- (+) Impact of foreign currency exchange
- (-) Raw material and fuel prices continue to soar
- (-) Despite the steady CATV market in Japan, difficulty procuring semiconductors and soaring prices
- (-) Lower optical cable sales to Europe due to the situation involving Russia and Ukraine

[H2 Forecasts]

- Optical fiber and cable demand is expected to remain strong in the Americas (Expect a temporary decline in Q3 due to seasonal factors)
- Specialty fibers (for industrial and medical applications) will also be strong
- Secure personnel directed at increasing optical fiber and cable production volumes in North America, and improve skill levels
- Further incorporate the soaring raw material and fuel prices in the sales price
- Expect increased revenue from digital coherent products and networking system products in Japan (seasonal factors)

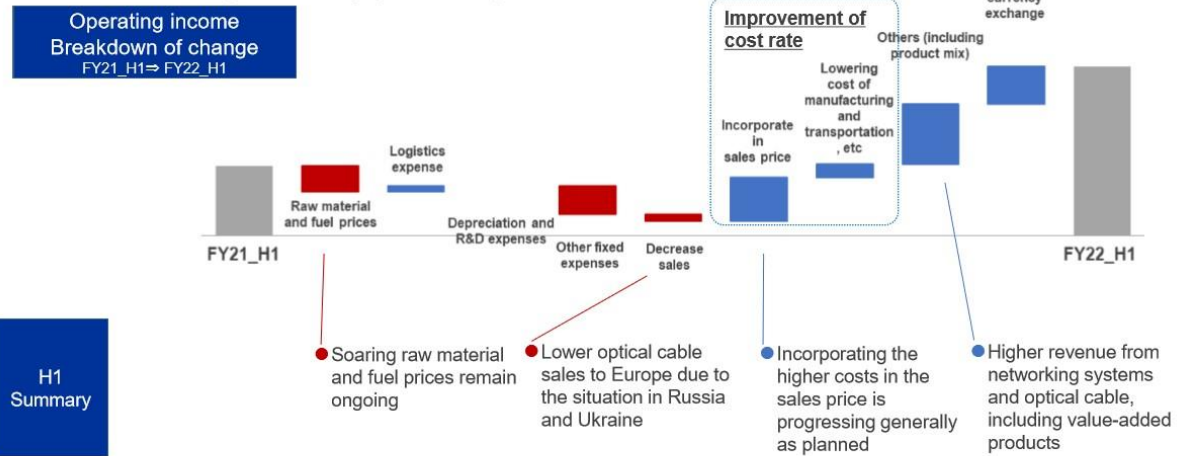
Next, please see page 25. This is the status of Communications Solutions business.

Both net sales and operating income increased.

1-(1) Infrastructure (Communications Solutions)

: Analysis of changes in optical fiber and cable operating income (YoY)

- Increased profit through incorporating the higher costs in the sales price, improvements to the product mix and increased productivity.
- Directed at achieving the full-year forecast, continue to incorporate the higher costs in the sales price and further increase productivity, particularly in North America.



If you look at the next page, it is the same waterfall I showed you earlier, but I have included comments there.

These are the results for H1. Although there has been a sharp rise in raw material and fuel prices, we have been able to shift the costs of raw materials and fuel to our customers as planned. There is also a negative impact from other fixed costs and wage increases.

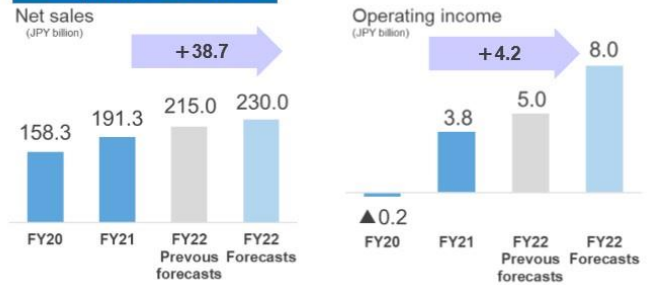
As for sales, we have a base in Russia. There was a decrease in sales of optical cables to Europe due to the situation in Russia and Ukraine. On the other hand, in addition to price shifting, cost reduction, or product mix improvement has been progressing, and the cost ratio has improved in contrast to automobiles. In addition, the positive foreign exchange rate also contributed to a significant improvement in fiber cables in H1 of the fiscal year.

1-(1) Infrastructure (Communications Solutions)

FY22_H1 Results



FY22_Full-year forecasts



[H1 Operating income compared to last year]

- (+) Increased optical cable and networking systems business revenue in the Americas (higher ratio of high value-added products)
- (+) Incorporated the soaring raw material and fuel prices in the sales price
- (+) Increased optical cable productivity in North America
- (+) Impact of foreign currency exchange
- (-) Raw material and fuel prices continue to soar
- (-) Despite the steady CATV market in Japan, difficulty procuring semiconductors and soaring prices
- (-) Lower optical cable sales to Europe due to the situation involving Russia and Ukraine

[H2 Forecasts]

- Optical fiber and cable demand is expected to remain strong in the Americas (Expect a temporary decline in Q3 due to seasonal factors)
- Specialty fibers (for industrial and medical applications) will also be strong
- Secure personnel directed at increasing optical fiber and cable production volumes in North America, and improve skill levels
- Further incorporate the soaring raw material and fuel prices in the sales price
- Expect increased revenue from digital coherent products and networking system products in Japan (seasonal factors)

On the other hand, if you go back to the previous page, page 25. As you can see in the lower left-hand corner, the domestic CATV market is firm, but the negative impact of semiconductor procurement difficulties and price hikes is having a negative impact.

On the right is the forecast for H2. Market conditions for fiber cables generally continue to follow a similar trend. On the other hand, in terms of changes, digital coherent products improved through H2.

We also expect sales of domestic network-related products to increase in H2 of the fiscal year. Domestic network-related products are originally designed for H2, so there are some positive effects from seasonal factors.

1-(2) Infrastructure (Energy Infrastructure)

FY22_H1 Results



Operating income (JPY billion)



FY22_Full-year forecasts



Operating income (JPY billion)



[H1 Operating income compared to last year]

- (+) Underground cable projects in Japan and transmission components were steady
- (-) Delays to customer construction projects and lower operating levels at the subsidiary in China due to the COVID-19 lockdowns in China
- (-) Increased depreciation expenses

[H2 Forecasts]

- Similar to H1, expect progress as planned in underground cable, submarine cable and water pipe projects in Japan
- Although customer projects in China will continue to be delayed, a recovery is expected in H2
- Realize the benefits from incorporating the soaring raw material and fuel prices in the sales price

Please skip to the next page, page 27. This is about Energy Infrastructure business.

The H1 results here showed an increase in sales and a decrease in profit.

The largest negative impact is shown in the middle of the left-hand side of the slide, which is the effect of delays in construction work by customers due to the lockdown in China for preventing COVID-19, and the slowdown of operations at its Chinese subsidiaries.

As a result, the YoY comparison was negative.

In H2, however, we expect that domestic underground lines, submarine lines, and water pipes will continue to make steady progress, as expected in H1. The effects of the lockdown in China and other factors have been resolved, and we are basically seeing a recovery in H2. In addition, the effect of price pass-on of raw material and fuel price hikes will also be realized.

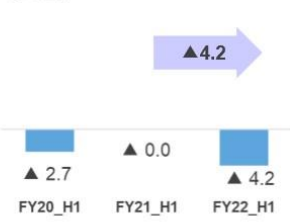
2-(1) Electronics & Automotive Systems (Automotive Products & Batteries)

FY22_H1 Results

Net sales
(JPY billion)
*Impact of differences in fiscal year timing of overseas subsidiaries: JPY +9.4 billion



Operating income
(JPY billion)



FY22_Full-year forecasts

Net sales
(JPY billion)



Operating income
(JPY billion)



[H1 Operating income compared to last year]

- (+) Differences in the product mix (wire harnesses for new vehicle models)
- (-) Soaring raw material and fuel prices
- (-) Higher costs for BCM initiatives following the lockdown in Vietnam last year
- (-) Higher cost rate caused by the lockdowns in China and changes in customers' production plans (mainly personnel expense)
- (-) Impact of air freight expenses (incurred in Q1) due to differences in the fiscal year timing of overseas subsidiaries (with a fiscal year ending in December)

[H2 Forecasts]

- Improve cost rate
- Progress will be made in incorporating the higher raw material and fuel costs and logistics expenses in the sales price
- Increase sales
- Downward revision to customers' production plans caused by the semiconductor shortage
- Impact of the sporadic lockdowns at facilities in China
- Batteries business will improve in H2

Next, on page 29, we have auto parts and batteries.

As I have repeatedly explained, the H1 results show an increase in revenue but a decrease in profit.

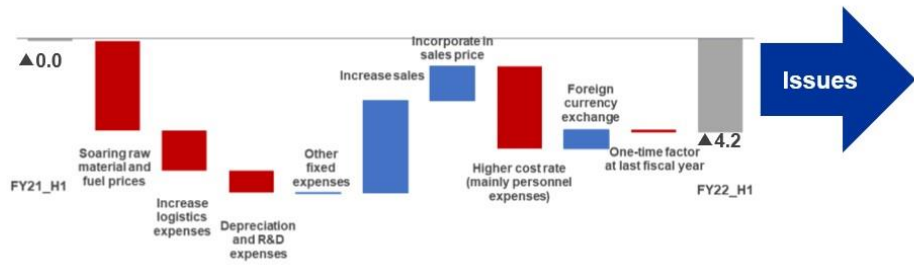
2-(1) Electronics & Automotive Systems (Automotive Products & Batteries)
Breakdown of change in operating income

Reposted
from P5

- Made progress in incorporating the soaring raw material and fuel prices and higher logistics expenses in the sales price, and the full effects will be realized from Q3
- Personnel expense ratio rose due to the lockdowns in China and changes to customers' production plans

Operating income
Breakdown of change
 FY21_H1⇒FY22_H1

(JPY billion)

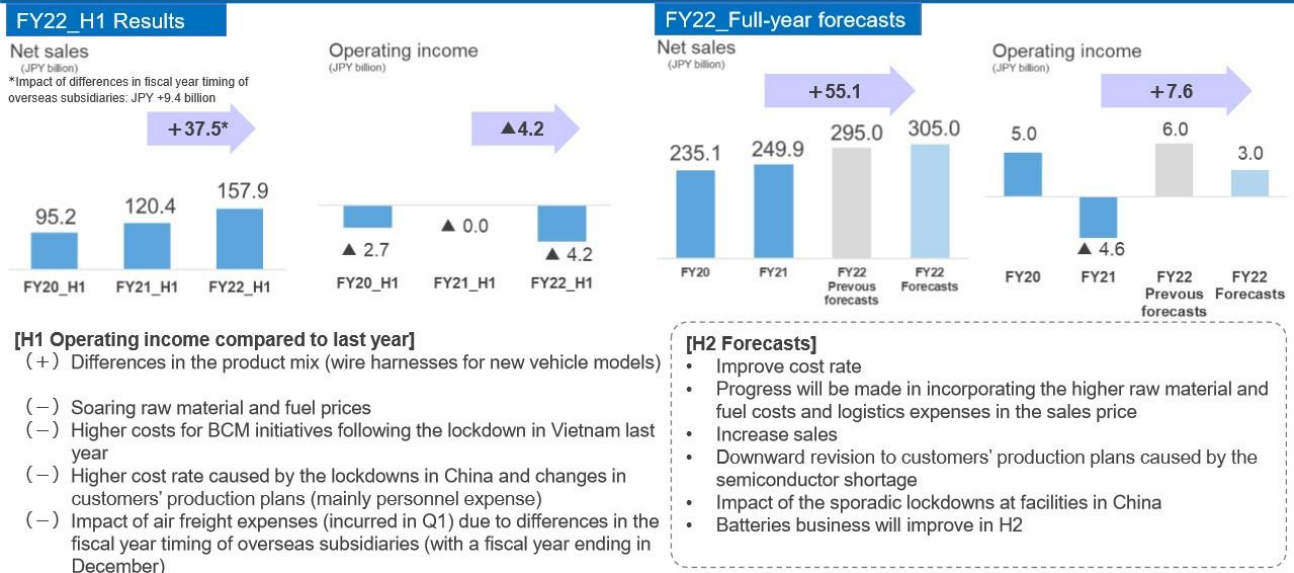


- Soaring raw material and fuel prices and higher logistics expenses
- Longer logistics lead times
- Higher cost rate (Mainly personnel expenses)
- Persistently high inventory levels

As you can see on the next page, the same data is available, but as you can see in the waterfall, the price shift to the customers has not kept pace with the price hikes.

Although there has been an increase in sales, this has been mostly offset by an increase in the cost of sales ratio. Although there is a positive effect of foreign exchange rates, the situation is significantly negative compared to the same period of the previous year.

2-(1) Electronics & Automotive Systems (Automotive Products & Batteries)



Please return to page 29. The right side here is the forecast for H2.

On the other hand, in H2, as the cost to sales ratio stabilizes to a certain extent, the areas that are on the way to improvement are showing positive effects. We also expect to make significant progress in recovering raw material fuel prices and logistics costs in Q3 and even Q4, so there is also a positive here.

Although sales are on a downward trend, they will increase compared to the previous year.

On the other hand, semiconductor shortage must be included in H2.

In addition, although the amount is not so large, sporadic lockdowns of production facilities in China are still continuing. We are in a situation where we do not know where it will happen. We have factored in some of the negatives here.

In addition, battery sales will improve significantly in H2. This is in line with previous years.

2-(2) Electronics & Automotive Systems (Electronics Component Materials)



[H1 Operating income compared to last year]

- (+) Steadily captured demand for in-vehicle, electronics, semiconductor and communications infrastructure products
- (+) Incorporate the soaring raw material and fuel prices and logistics expenses in the sales price
- (-) Soaring raw material and fuel prices and logistics expenses

[H2 Forecasts]

- Demand for communications infrastructure and power semiconductor products will be steady
- In-vehicle and electronics product demand will enter a correction phase
- Benefits from further incorporation in sales price and improvements to the product mix

Next is page 31, Electronics Component Materials business.

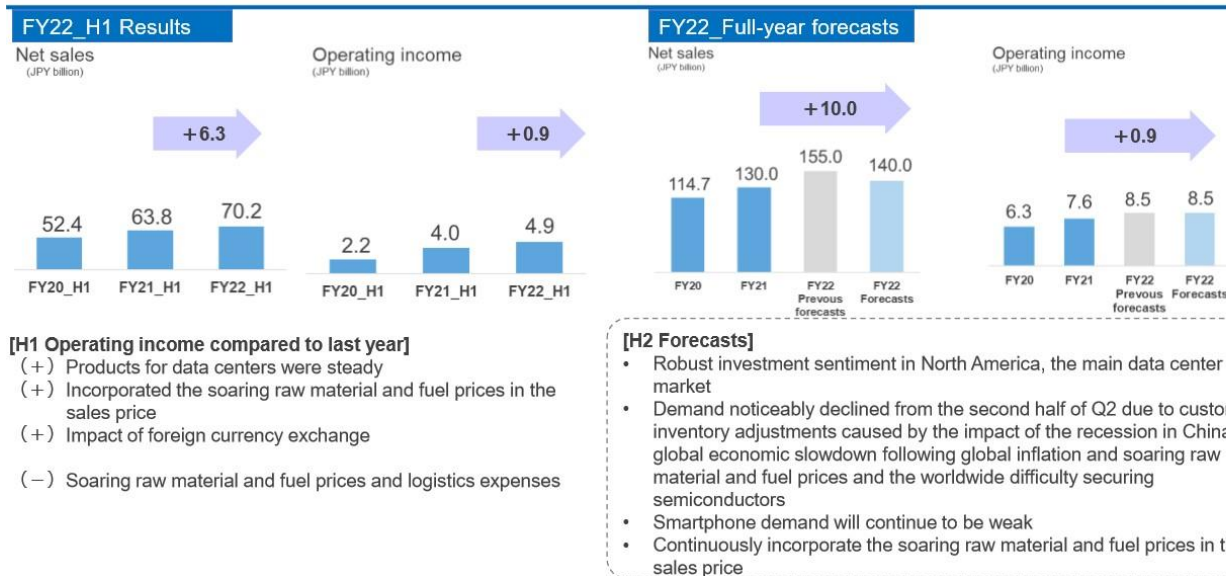
In the Electronics Component Materials business, sales increased, and operating income was almost the same.

In H1, there was a sharp rise in raw material and fuel prices and logistics costs. However, we steadily captured demand for automotive, electronics, semiconductor, and telecommunication infrastructure-related products, and the product mix improved, which of course led to an increase in price shift. Therefore, these two factors almost offset each other and resulted in the same amount.

In H2, demand for automotive and electronics-related products entered a partial adjustment phase. As a result, we are looking at the figures for H2 more cautiously and conservatively in terms of operating income compared to H1.

There is no change in the forecast for the full year.

3 Functional Products



[H1 Operating income compared to last year]
 (+) Products for data centers were steady
 (+) Incorporated the soaring raw material and fuel prices in the sales price
 (+) Impact of foreign currency exchange
 (-) Soaring raw material and fuel prices and logistics expenses

※ Sale of shares of a consolidated subsidiary (Q4 : Net sales ▲4.7 billion, Operating income▲0.7 billion) *TOTOKU ELECTRIC CO., LTD.

See page 32. This is about Functional Products business.

Sales and operating income of Functional Products business both increased. Although raw material and fuel prices and logistics costs have risen sharply, data center-related sales have remained firm. Price shifting is also underway. Foreign exchange effects also had a positive impact, resulting in an overall increase in profit.

As for H2, as shown on the right, the main market for data centers is North America, where the appetite for investment remains strong. The situation is very active, including AI projects.

On the other hand, the global economy is slowing due to China's economic slowdown, global inflation, and soaring raw material and fuel prices. In addition, due to the difficulty in procuring semiconductors, some customers are making inventory adjustments. Demand for some products has been declining since the latter half of Q2.

In addition, the smartphone-related business has been sluggish, affecting businesses, such as semiconductors and copper foil.

We will continue to promote price shifting in H2 of the fiscal year.

Although we have left the JPY8.5 billion figure unchanged, we will actually deconsolidate TOTOKU ELECTRIC. As shown here, this has a negative impact of JPY4.7 billion on net sales and JPY0.7 billion on operating income.

FY2022 H1 Results –B/S Summary

(JPY billion)			
	End of FY21Q4	End of FY22H1	Change
	a	b	b-a
Current assets	503.0	512.0	+9.1
Cash and bank deposits	65.2	61.8	▲ 3.3
Notes and accounts receivable trade	230.3	230.1	▲ 0.3
Inventories	164.1	182.1	+18.0
Non-current assets	432.9	468.2	+35.3
Tangible fixed assets	260.2	281.3	+21.1
Intangible fixed assets	20.5	20.1	▲ 0.4
Investments and other assets	152.2	166.8	+14.6
Total Assets	935.9	980.2	+44.4
Current liabilities	379.7	401.2	+21.5
Non-current liabilities	242.1	244.0	+1.9
Total Liabilities	621.8	645.1	+23.3
Shareholders' equity	266.0	270.6	+4.6
Accumulated other comprehensive income	13.2	27.8	+14.6
Net income attributable to non-controlling interests	34.8	36.7	+1.9
Total Net assets	314.1	335.1	+21.0
Total Liabilities and Net assets	935.9	980.2	+44.4
Interest-bearing liabilities	342.1	359.6	+17.5
Capital ratio	29.8%	30.4%	+0.6
NET D/E ratio	1.0	1.0	+0.0

Inventories
Increased by JPY 18.0 billion (including the impact of foreign currency exchange and copper prices JPY +10.2 billion)

- Lower customer production volumes, lockdowns and increased logistics lead times: JPY +4.3 billion
- Strategic inventory (adjustments in response to the business environment): JPY +13.8 billion

Property, plant and equipment & Intangible assets
Increased by JPY 20.7 billion

- Impact of CAPEX and depreciation : JPY ▲0.6 billion
- Application of the new lease accounting standard at affiliates adopting US GAAP : JPY +6.2 billion
- Impact of foreign currency exchange : JPY +15.2 billion

Total assets
Increased by 44.4 billion

- Impact of foreign currency exchange: JPY +48.7 billion
- Impact of new consolidation: JPY +6.3 billion
- Application of the new lease accounting standard at affiliates adopting US GAAP: JPY +6.2 billion

Other comprehensive income
Increased by 14.6 billion

- Foreign currency translation adjustments : +18.1 billion (impact of Yen depreciation)

Net interest bearing debt
Increased by JPY 20.8 billion (JPY 277.0 billion→ JPY 297.8 billion)

Then, see page 33. This is a balance sheet summary of the H1 results.

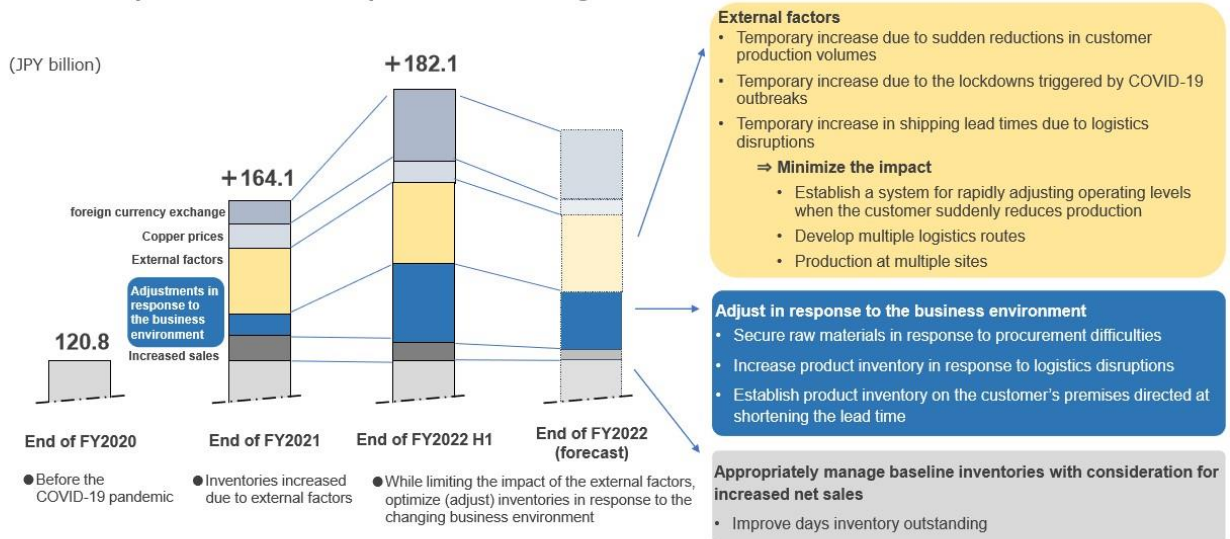
The middle part is colored, but the total assets increased by JPY44.4 billion. The largest factor is the impact of foreign exchange, which, in fact, most likely explains the majority of the increase. Excluding the impact of new consolidation, the introduction of new lease accounting standards in the US, etc., the real portion has decreased.

As we take a look at the breakdown, inventories increased by JPY18.0 billion. This includes a JPY10.2 billion foreign exchange impact and copper price impact, so in real terms the amount is about JPY8.0 billion. The contents are described on the next page.

The tangible fixed assets are almost entirely affected by foreign exchange rates. In net assets, other comprehensive income and foreign currency translation adjustments were significantly positive due to the yen's depreciation.

NET interest-bearing debt increased by JPY20.8 billion, but the equity ratio improved, and the NET debt-to-equity ratio remained unchanged at 1.0.

Make improvements based on the concept of “Adjust as the Case” aimed at continuously adjusting inventories to optimum levels in response to the changes in the business environment



Next is page 34, the status of inventories.

We will continue to make improvements based on the Adjust as the Case concept, which is to constantly adjust inventories to the business environment, as explained earlier.

In terms of external factors, it still remains. On the other hand, we are taking steps to minimize the impact on this as well.

We are also continuing to work to secure appropriate inventories for the business environment.

In addition, although there is an increase in sales, we will absorb the increase in sales by improving the number of turnover days, and by continuing appropriate management, we will make steady progress toward the year-end forecast for FY2022 and our goals.

FY2022 H1 Results

CAPEX, Depreciation & Amortization and R&D Expenses

Full-year CAPEX forecast remains unchanged

	FY20_H1	FY21_H1	FY22_H1	YoY change	FY22 Previous Forecasts	FY22 Forecasts	Change from previous forecasts	(Full-year forecast)
	a	b	c	c-b	d	e	e-d	
CAPEX	18.2	16.6	17.8	+1.1	47.0	47.0	—	Increase: Due to foreign currency exchange Decrease: Revise CAPEX execution timing based on market trends
Depreciation and amortization	15.8	17.0	18.9	+1.9	38.0	38.0	—	Limit expenditures by revising the design specifications
R&D expenses	10.4	10.1	11.8	+1.7	24.0	25.0	+1.0	Increase: Due to foreign currency exchange

(JPY billion)

*Announced on May 12, 2022

Lastly, on page 35. This is the forecast for capital expenditures, depreciation, and research expenses.

Capital expenditures and depreciation and amortization remain unchanged. Although there is an increase due to foreign exchange, we will implement trying to control it by reviewing the timing of investments and changes in design specifications.

With regard to R&D expenses, we will continue to promote R&D firmly.

The overseas portion is also affected by foreign currency exchange rates, so there is no change in the content, but the exchange rate has been increased by JPY1 billion.

That is all for the explanation.