

## **Business Briefing**

Automotive Products Business

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### FURUKAWA ELECTRIC CO., LTD.



- 1. Business strategy directed at 2030
- 2. Provide products that drive the evolution of automobiles
- 3. Evolution of the global production network
- 4. Initiatives for expanding the customers and markets
- 5. 2025 Mid-term plan Net sales, operating income and planned net sales by product
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Appendix – Product overview



1. Business strategy directed at 2030

# (1) Vision 2030



#### Support carbon neutrality and a safe, secure mobility society Achieve both contribution to the SDGs and sustainable growth through the provision of value

Changes in the business environment	Categories	Vision 2030		
<ul> <li>Revenue opportunities</li> <li>Acceleration of vehicle electrification</li> <li>Rapid transformation of vehicles</li> <li>Expanding mobility market</li> </ul>	Promote CN*	<ul> <li>Expand the products with low environmental impact throughout the product lifecycle</li> <li>Promote the use of renewable energy such as solar power and geothermal power</li> <li>Enhance energy saving production through the use of data</li> </ul>		
<ul> <li>Safe, secure next-generation urban planning</li> <li>Risks</li> <li>Changes within society are realized as a</li> </ul>	Realize a safe, secure mobility society	<ul> <li>Contribute to preventing accidents, and create products that support safe, secure mobility</li> <li>Contribute to building social infrastructure that is connected to various mobility services</li> <li>Create new products that combine information, energy and mobility</li> </ul>		
<ul> <li>major menace or risk</li> <li>Extreme demand volatility</li> <li>Confusion within the supply or logistics networks</li> <li>Supply chain disruptions</li> </ul>	Strengthen the ability to respond to change	<ul> <li>Strengthen the predictive management capability and BCM in the overall value chain</li> <li>Rebuild a more resilient supply chain that minimizes geopolitical risks</li> <li>Develop products that enable automation and reduced manpower from the design stage</li> </ul>		

# (2) Business strategy roadmap



(1)Strengthen the ability to respond to change and competitiveness, and transform into a business that can generate stable profits
 (2)Accumulate value that contributes to solving the issues in the mobility society, and both contribute to the SDGs and realize sustainable growth

#### С

## Expand to new market and applications

- Introduce high voltage products to the xEV market
- Peripheral monitoring radar that contributes to safe societies
- Increase SRC sales in Europe and South America





High voltage WH High voltage JB

Peripheral monitoring radar





Create new products that contribute to realizing CN and a safe, secure mobility society



- Develop new products that respond to the new needs resulting from the automobile transformation
- Wire harness that respond to new vehicle structures such as giga cast
- Next-generation SRC with enhanced functions for steer by wire, new cockpits and high speed communications

B



[Provide new value Initiatives for expanding the

of the global production network

customers and markets



# 2. Provide products that drive the evolution of automobiles

- Product strategy roadmap
- Lightweight
- Large current and high voltage
- High speed communications technology (in-vehicle optical communications & V2X)
- High reliability sensing technology

# (1) Product strategy roadmap



# Focus on creating value that solves customer issues such as high speed communications and high output, and increase product value

Aim for CN by improving recycling technology, utilizing renewable energy and improving the production methods

Products	Main points	2025 2030-		
Wire harnesses	High speed communications, lightweight, fewer wires Automation	In-vehicle optical communications exceeding 10 G/sHigher speed metal communicationsAutomation (Support BCP, improve quality and costs)		
High voltage products	Higher output (high voltage/ large current) Noise countermeasures	Contribute to improving fuel/electricity efficiency through well-differentiated technology, and respond to the growing xEV market		
SRC (Steering roll connector)	Products that support high speed communications and new functions Products that support next- generation cockpits	Support CAN communications         Support high speed communications and steer by wire           Respond to new requirements such as stowable steering columns		
BSS <sup>®</sup> (Lead battery state sensor)	Functional safety/ASIL compliant	Progressing toward commodification Improve sensing performance		
Peripheral monitoring	NCAP compliant Improved algorithms and robustness	Promote new NCAP compliance         Support advances in ADAS systems           Support grueling environments (undeveloped areas, snow)         Support advances in ADAS systems		
Combined domains, New products	Connected to infrastructure V2X communications control system In-vehicle wireless communication/ power supply	Traffic monitoring radar       Next-generation urban planning & safety systems         Products for V2X systems         Products for in-vehicle wireless applications		

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# (2) Lightweight



Demand for aluminum wire harnesses (aluminum wires and Alpha Terminals<sup>®</sup>) will further increase in response to increased vehicle weight resulting from shift to xEV



<Major changes in EV>

- •Engine system  $\Rightarrow$  Electric motor
- Fuel system
- Vehicle weight

Low

voltage

WH

- $\Rightarrow$  Battery pack (xEV)/ Hydrogen tank (FCEV)
- ⇒ 10-30% heavier (\*Survey by Furukawa Electric)





Annual Alpha Terminals® production volume



#### Cumulative vehicle models that use aluminum WH



Figures from FY2024 are a forecast

# (3) Large current and high voltage



Leverage the company's technological strengths (processing technology & materials capabilities) to optimize the high voltage products that will increase following the vehicle system changes in xEV





<Major changes in EV>

- Engine system
- Fuel system
- Vehicle weight
- Electric motor
  - Battery pack (xEV)/ Hydrogen tank (FCEV)
  - 10-30% heavier (\*Survey by Furukawa Electric)

<Respond to the growing EV market>

#### High voltage system products are expected to increase following the change to vehicle systems

- Rapid charging/ higher motor output  $\Rightarrow$  High voltage WH using large current connectors and electrical wire
- WH and high voltage products in the battery pack
- WH and high voltage products in the FC (fuel cell) system











High



voltage JB

#### (4) High speed communications technology (in-vehicle optical communications & V2X)



In line with the increased vehicle layout freedom enabled through the shift to xEV, respond to next-generation mobility that will be realized through advances in autonomous driving and connected technology



### V2X

- Contribute to realizing next-generation mobility through V2X communications that link vehicles with everything
- Leverage the router technology and wireless communications technology to build a system for low latency, high quality V2X communications

#### Vehicle-infrastructure communications (Image)



# In-vehicle optical communications

Respond to high speed, large volume communications required for EV electromagnetic noise, connected and autonomous driving through in-vehicle optical harnesses with speeds exceeding 10Gb/s





IEEE/ISO compliant standard optical harness

Start shipping samples for evaluation in FY2026
 Aim to start mass production around 2030



#### Multi-connection harness with optical fiber and power cable

Our cable/connector with a unique structure reduces space requirements and makes assembly easier

# (5) High reliability sensing technology



### Safe, secure and convenient

#### **Contribute to safety**



 ✓ Use radar to detect danger that is difficult to see with a camera (Peripheral monitoring in construction equipment and industrial vehicles)
 ✓ Support side monitoring and merging onto expressways





#### **People-oriented cities**

 Use radar to monitor infrastructure, such as preventing driving in the wrong direction on expressways







# Peripheral monitoring radar



**BSS**® (Lead battery state sensor)



#### Make mobility universal to all people

✓ BSS<sup>®</sup> prevents dead batteries and safely activates the xEV system









# 3. Evolution of the global production network

- Production and supply network
- Wire harness automation

## (1) Production and supply network



Through an optimum allocation that balances cost competitiveness and BCM, establish a production and supply network that can withstand change



- ▶ Produce in Asia→ Pass through supply
- Respond with pass through supply from the optimum region

#### [China market]

- ► Local consumption of local production
- In addition to production and supply, shift to a full-service business that includes sales, design and procurement

#### [Japan and North America market]

- **>** Produce in Asia $\rightarrow$  Pass through supply + Produce in Mexico
- Promote automation (Easy to produce / Easy to automate design)
- For aluminum wire harnesses, optimum production (Produce in Asia→ Expand production in Mexico)
- For high voltage products, local consumption of local production through the local procurement of electrical wire and other components + promoting automation



#### [ASEAN + India market]

► Local consumption of local production

(Establish a system that can withstand the impact of foreign currency exchange volatility)

## (2) Wire harness automation



Realize local consumption of local production through *monozukuri* that does not rely on people, and reduce lead time and logistics risks





# 4. Initiatives for expanding the customers and markets

- Response to customers (markets)
- New markets

## (1) Response to customers (markets)



#### Increase sales targeting Japanese OEM for WH and both Japanese OEM and foreign OEM/ Tier 1 suppliers for functional products

#### [Europe market]

- Acquire new SRC orders for foreign OEM
- Continue to further increase sales centered on functional products

#### [China market]

- Aim to acquire new orders for high voltage and other products targeting next-generation NEV of Japanese OEM
- Conduct sales activities to acquire new SRC orders for foreign OEM

# in the core

#### [Japan and North America market]

- Promote the response to automation, BCM and CN, and respond to the firm needs of Japanese OEM centered on HEV
- Work to increase sales of functional products to foreign OEM in conjunction with South America and Europe

#### Functional automotive products





#### [South America market]

• Leveraging the cost competitiveness of producing in Asia, currently conducting sales activities to acquire new SRC orders for foreign OEM

#### [ASEAN + India market]

- Establish a system that responds to the local strategy of Japanese OEM
- Currently conducting sales activities to acquire new SRC orders for foreign OEM
- Continue to increase sales of functional products and high voltage products

# (2) New markets



In addition to OEM, form partnerships with diverse stakeholders, and expand the business to include mobility and infrastructure

## **Growing EV market**

 Based on the accumulated materials technology, form partnerships with OEM and Tier 1 suppliers





High voltage WH High voltage JB

EV mobility + Resource recycling



## **Realize carbon neutrality**

 Contribute to building social infrastructure that is connected to various mobility services through the accumulated in-vehicle technology





### Mobility & infrastructure markets

 By linking the radar products utilizing the features of millimeter waves and V2X devices utilizing router technology, contribute to increased safety and security of each type of mobility

#### Logistic warehouses







Construction equipment and industrial vehicles





## 5. 2025 Mid-term plan

 Net sales, operating income and planned net sales by product

## **2025 Mid-term Plan net sales and operating income**



\*Including the batteries business



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## Net sales by product





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# 6. Initiatives for the SDGs and achieving Vision 2030

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## Promoting carbon neutrality (1)

Promote CN throughout the product lifecycle of "manufacturing", "carrying" and "using", and expand the products with low environmental impact

- Expand the lightweight and high voltage components
- Create new materials and products with low environmental impact (3R: Reduce, Reuse, Recycle design, materials and reduced number of components)





## **Promoting carbon neutrality (2)**



Promote CN throughout the product lifecycle of "manufacturing", "carrying" and "using", and expand the products with low environmental impact

- Expand the lightweight and high voltage components
- Create new materials and products with low environmental impact (3R: Reduce, Reuse, Recycle design, materials and reduced number of components)
- Accelerate the initiatives for effectively utilizing and recycling resources



## **Promote PIR & PCR**

#### **PIR: Post industrial recycling**

Reuse material losses occurring within the processes and Furukawa Electric group

### PCR: Post consumer recycling

Utilize materials recycled from the market

## **Promoting carbon neutrality (3)**



#### Promote the use of solar power, geothermal power and other renewable energy sources

• Successively expanding the production sites that use renewable energy (as of 2024)



#### Enhance efficient, energy-saving production through the use of data

- Automatically calculate CO<sub>2</sub> emissions tied to the products
- Improve energy use per unit of production by increasing productivity
- Promote the installation of energysaving equipment





# Thank you very much for your attention







opportunities

.

risks

volumes

.

Business environment – Main revenue

New opportunities from diversification of

vehicle functions resulting from advances

in CASE, including xEV, MaaS, and

responding to requirements for

[2025 Mid-term Plan (Road to Vision 2030 – Transform and Challenge -) Basic policy] As decarbonization accelerates toward realizing carbon neutrality, evolve the existing products and create new businesses in response to the requests for low environmental impact and safety, and contribute to energy management, lightweight, response to safety and electrification.

#### [Business environment, strengths and issues]

Strengths as a division

•

automobile technology

Strengthen the response to BCM, and promote automation for achieving the

stable supply of high quality products

[Main business strategy for achieving the 2025 Mid-term Plan] (WH) Expand the application of aluminum wire harnesses leveraging the superiority and high reliability of the Alpha Terminal<sup>®</sup>, and promote lightweight Technological capability to create (SRC) Development that responds to high speed communications and the products that combine the group's evolution of automobiles accumulated core technology and (BSS) Improve fuel efficiency and power consumption, and secure power supply reliability

- modularization Directed at advances in electrification (Radar) Increase adoption of high performance next-generation products for Increase the products for the acceleration directed at CN, products with low toward EV directed at achieving carbon vehicles (including response to cybersecurity)/ Enter the construction environmental impact, such as products neutrality, products with low that contribute to lightweight and energy equipment, industrial vehicle and traffic infrastructure markets environmental impact and future wiring management through aluminum wire (High voltage products) systems that respond to vehicle safety harness (Alpha terminals®) manufactured Utilize the company's technological strengths (processing and materials using green energy capabilities) to respond to the increased use of high voltage components following the changes to vehicle systems resulting from the shift to large Business environment - Main menaces and Issues as a division current/ high voltage and EV Increased geopolitical risk Creation of next-generation products that Reduce traffic accidents, Realize a carbon-free society and . Social issues Realize more resilient traffic infrastructure Promotion of automation and reduced combine information, energy and mobility through co-creation with partners manpower AFFORDABLE AND
  - 3 GOOD HEALTH AND WELL-BEING **9** INDUSTRY, INNOVATION AND INFRASTRUCTURE 12 RESPONSIBLE CONSUMPTION 13 CLIMATE ACTION

Sudden changes to customer production

Sustained high raw material prices

# **Appendix** – **Products overview**



	Automotive products							
	Wire harnesses	High voltage products	Functional products					
Safety	•	•	•	•	•			
Lightweight	•	•		•				
Electrification	•	•		•				
Carbon neutral	•	•	•	•	•			
Main products	<ul> <li>Aluminum wire harness</li> <li>Corrosion-proof terminal (Alpha Terminal®)</li> <li>Products using flat cable</li> </ul>	<ul> <li>High voltage WH</li> <li>High voltage JB</li> <li>High voltage busbar products</li> <li>Large current, high voltage connectors</li> <li>WH inside the battery pack</li> </ul>	<ul> <li>SRC (Steering roll connector)</li> </ul>	<ul> <li>BSS<sup>®</sup> (Lead battery state sensor)</li> </ul>	<ul> <li>Peripheral monitoring radar</li> </ul>			
Main applications	<ul> <li>Wiring inside vehicles</li> <li>Electrical supply and signal transmission for sliding doors and long slide seats</li> </ul>	<ul> <li>Wiring for xEV vehicles</li> <li>Power supply wiring for xEV vehicles</li> </ul>	<ul> <li>Airbags</li> <li>Audio, cruise control controls</li> </ul>	<ul> <li>Vehicle power management</li> </ul>	<ul> <li>Advanced driver assistance systems (ADAS)</li> </ul>			
Main customers	● Japanese OEM	● Japanese OEM	<ul> <li>Japanese OEM / Tier 1 suppliers</li> <li>Foreign OEM / Tier 1 suppliers</li> </ul>	● Japanese OEM	<ul> <li>Japanese OEM</li> <li>Construction equipment manufacturers, etc.</li> </ul>			