

# Business Briefing Automotive Products business

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Furukawa Electric Co., Ltd.

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Projections of future sales and earnings in these materials are "forward-looking statements."

Management offers these projections in good faith and on the basis of information presently available.

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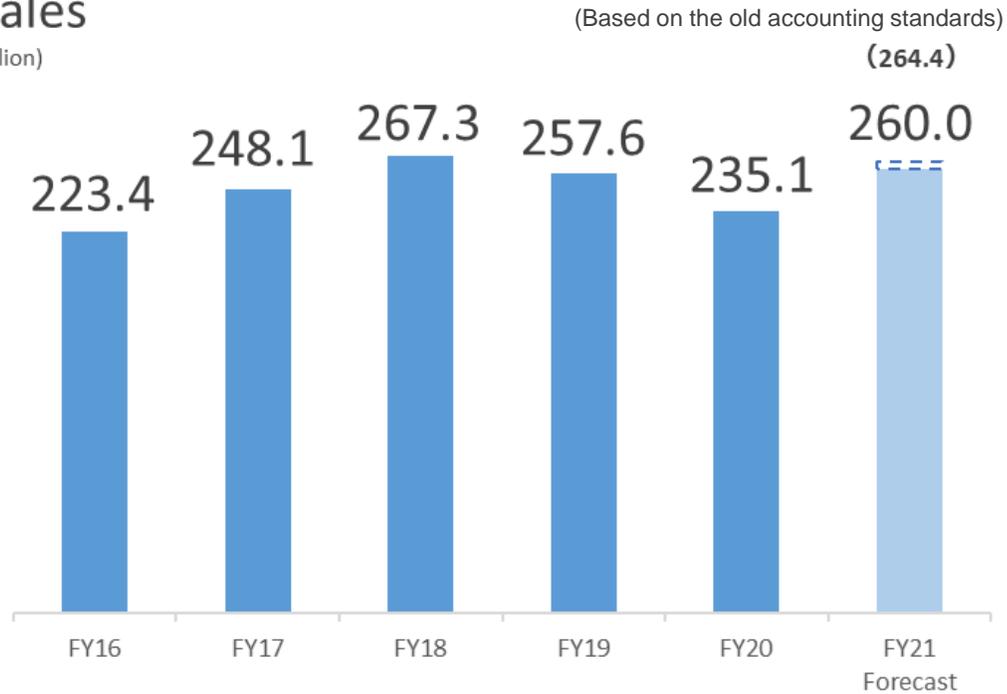
- 1. Review of the 2020 Medium-term Management Plan and key issues in 2021**
- 2. Future business strategies**
- 3. Initiatives for SDGs with a focus on carbon neutral**
- 4. Appendix – Product overview**

# Review of the 2020 Medium-term Management Plan and key issues in 2021

※Including battery business of the listed subsidiary Furukawa Battery Co., Ltd.

## Net sales

(JPY billion)

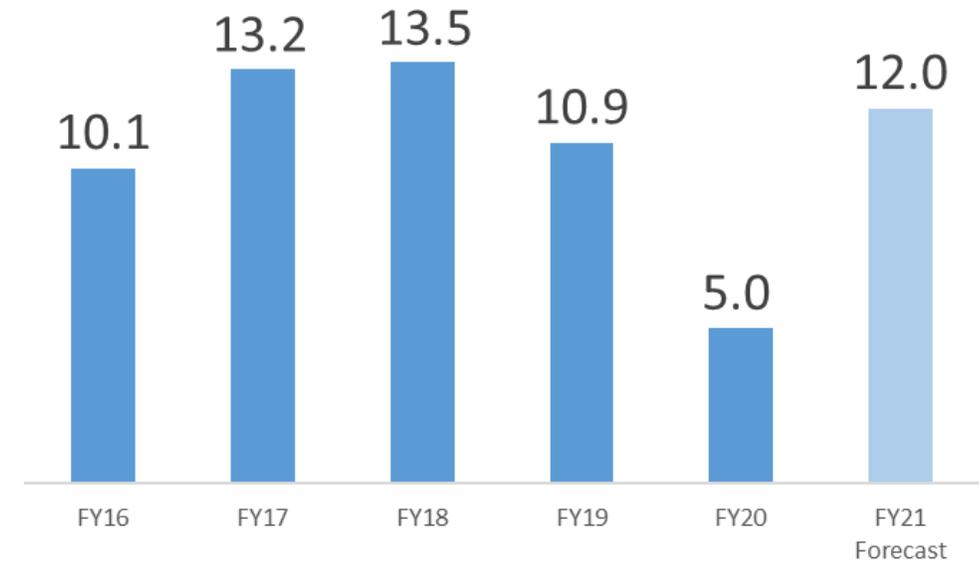


### 【Review of the 2020 Medium-term Management Plan】

- Leveraging the advantages of aluminum W/H, acquired new orders for global vehicle models, and established a foundation for contributing to profits
- Added multiple layers to the supply chain
- Unable to achieve the profit target in the final year of the 2020 Medium-term plan (COVID-19)

## Operating income

(JPY billion)



### 【Important issues in FY21】

- Definitely invest in expanding W/H production (establish a profit foundation)
- Definitely start mass production (reap the profits)
- Respond to the risk of customer volatility due to a shortage of semiconductors and plastic
- Establish a foundation for carbon neutral

In response to the demands to protect the global environment and ensure safety, contribute to power supply management, lightweight, safety and vehicle electrification through product lineups that include materials technology

**Safety / security**

**Protect the earth Environment**



**Protect well-being Convenient / Useful**



Vehicle electrification, autonomous driving, connected, sharing

### Social issues:

Realize a carbon-free society  
Realize more resilient traffic infrastructure  
Reduce traffic accidents

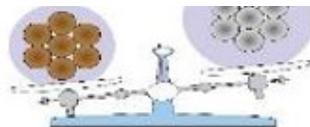


### Energy management



Power systems

### Lightweight



Wiring systems

### Response to safety



Safety / convenience systems

## Power systems



**BSS®**  
(Lead battery state sensor)



High voltage harnesses  
High voltage components

## Wiring systems

Aluminum wire harnesses  
and  $\alpha$  terminals  
(corrosion-proof terminals)



SRC (Steering roll connector)



Products using flat cable  
(SDH/LSH)

## Safety / convenience systems



Peripheral monitoring  
radar

Carbon neutral

**For xEV**

**Aluminum wire harnesses +  
Functional components**

## <Wire harnesses>

Lightweight

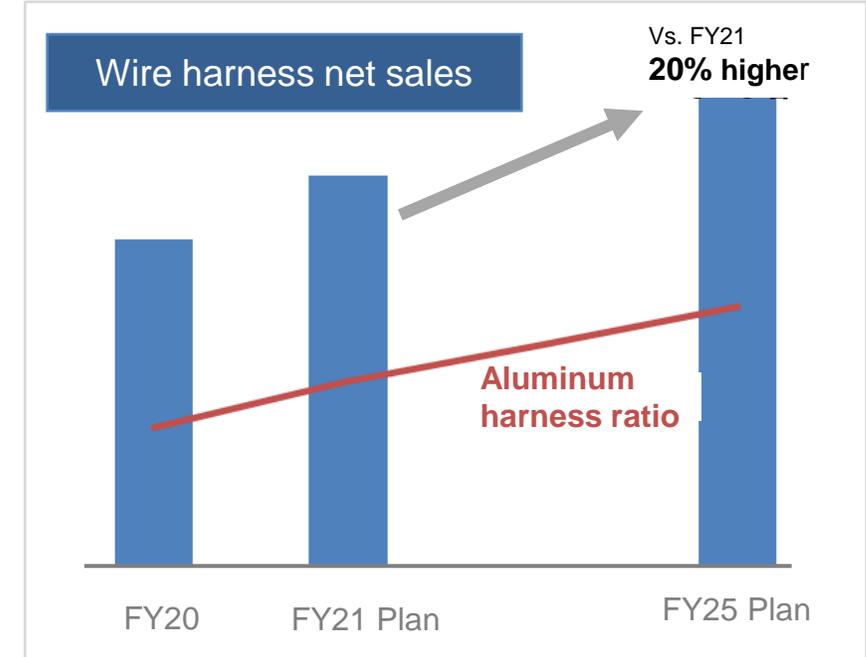
**【Strategy】** Respond to customer needs for lightweight, increase the opportunities to acquire wire harness orders, and leverage the contribution to profits to expand sales of aluminum wire harnesses and  $\alpha$  terminals.

### 【Focus】

- Definitely invest in increasing production of wire harnesses for North America, and reap the profits from 2021.

(Start mass production at FAVV's 3 locations in Vietnam from August)

- $\alpha$  terminals (corrosion-proof terminals) are being used more often as a result of the wide applicability resulting from their high resistance to corrosion.
  - Increase awareness of  $\alpha$  terminals, and align the terminals with the customer's bidding specifications
  - Expand sales to include customers' vehicle models available only in China and the US and also for use in seat harnesses, which require corrosion resistance
- Strengthen the global supply chain as a BCM (create multiple layers).

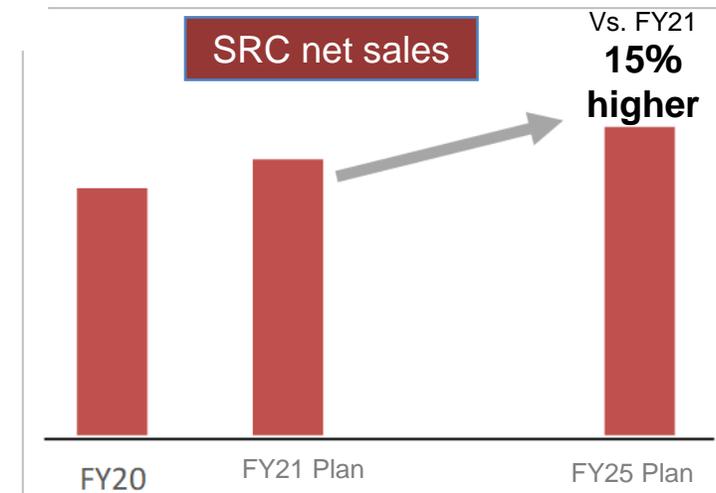
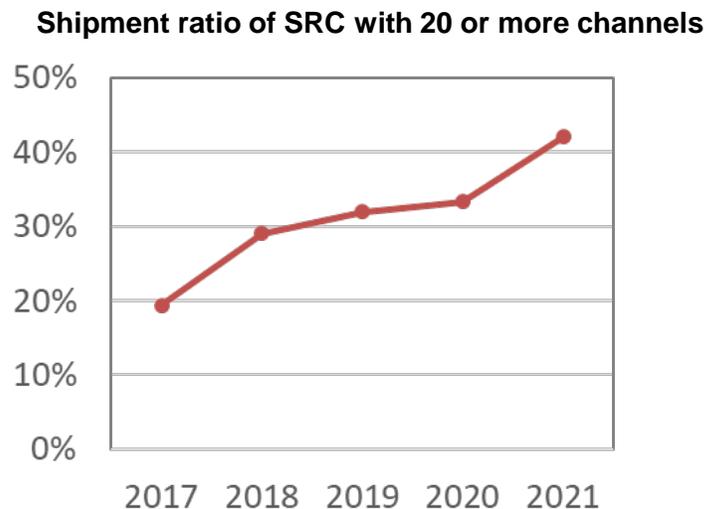


## <SRC (Steering roll connector)>

Safety

**【Strategy】** Leverage the position as the leader in global market share, establish a technology roadmap that responds to higher performance steering, which is evolving along with CASE, and work to expand the business by developing new products that use new technology such as high speed communications and large current/ heat-resistant flat wire.

**【Focus】** In addition to capturing demand in regions where the market is growing as a result of air bag regulations, increase added value by responding to more channels (higher number of flat cables) following the evolution of safety functions (power supply of the vibration motor for lane departures warnings) and heated steering. In addition, currently developing products directed toward the next generation of automobiles.



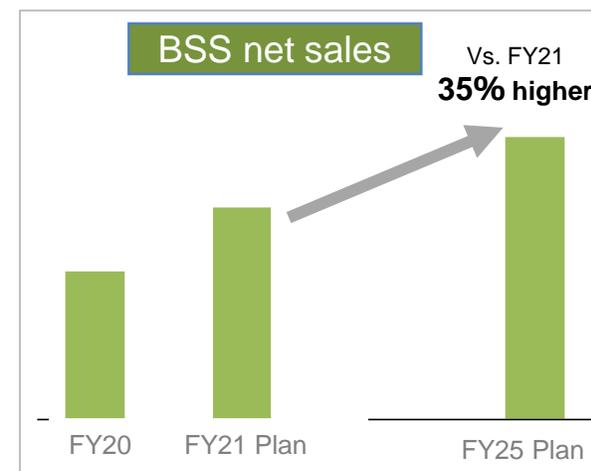
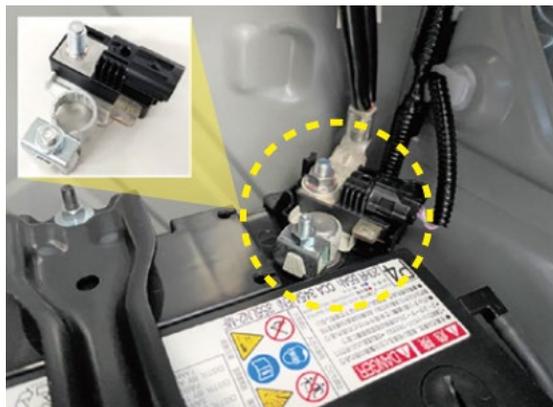
## <BSS® (Lead battery state sensor)>

Safety/ Energy management

TNGA...Toyota New Global Architecture

**【Strategy】** Following the accelerated shift among all OEM toward vehicle electrification in order to promote carbon neutral, the use of BSS that contributes to higher fuel efficiency and improved power source quality will dramatically increase. After launching as a Toyota TNGA component, will expand to electric vehicles (including light and commercial vehicles) of other OEM. Also, by developing next generation functions such as failure detection, establishing technological superiority in service and kotozukuri and launching 3<sup>rd</sup> generation products before competitors, provide value that will lead to achievement of the SDGs targeted by customers.

**【Focus】** Enter MaaS by leveraging increased performance that enables detection of battery failures and exchange notifications.



# Future business strategy (6)

## <Peripheral monitoring radar>

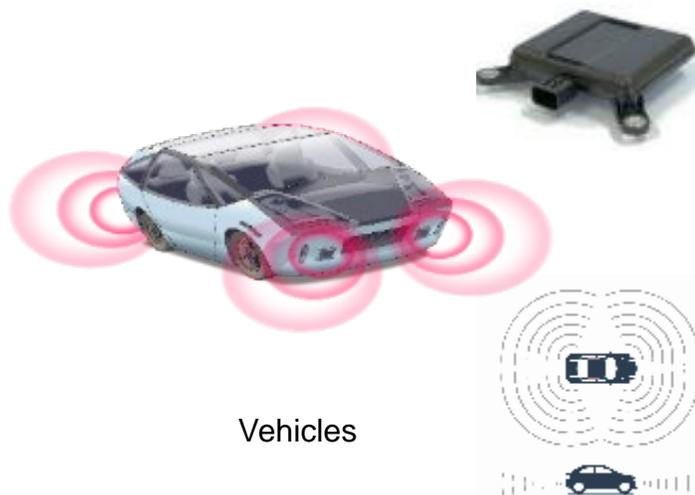
**Safety**

**【Strategy】** Expand the applications of next generation high performance products developed for vehicles. Leveraging the fact that the radar is negligibly affected by rain, snow and fog, increase the competitive position in new markets by equipping flexible software (algorithm) that appropriately detects customer needs in new markets such as agricultural machinery, construction machinery and traffic infrastructure.

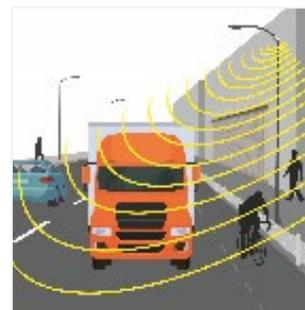
**【Focus】** Start mass production of next generation products for vehicles from the start of 2022 and mass production for construction and agricultural machinery from June 2021. Also, currently working to expand the applications to include traffic infrastructure.



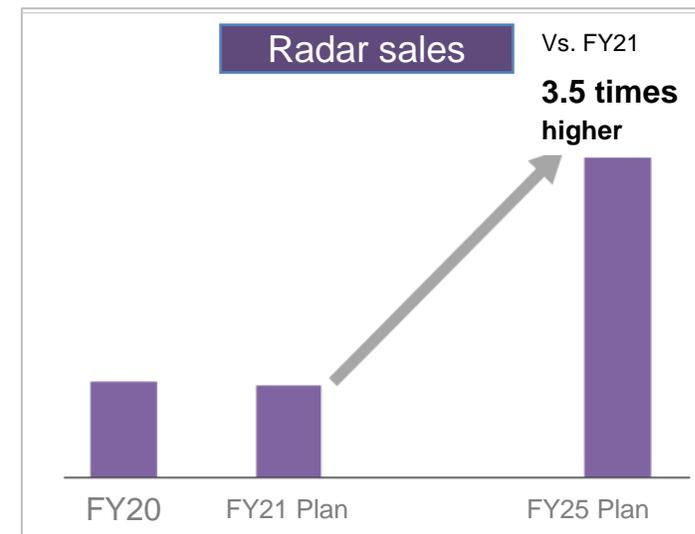
Agricultural machinery



Vehicles



Traffic infrastructure (Prevent driving in the wrong direction)



## <New products strategy>

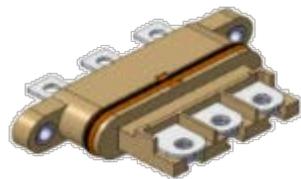
**Vehicle electrification/ Energy management/ Safety**

**【Strategy】** Expand sales of high voltage products in Japan, China and India where the electric vehicle markets are expanding directed to achieving carbon neutral. In order to strengthen the development of new technology and new products that contribute to CASE and the evolution of mobility, utilize the original technology accumulated by the Furukawa Electric Group and develop products that are well-differentiated and competitive. Also, promote research and development aimed at reducing CO<sub>2</sub> emissions during the entire product lifecycle.

**【Focus】** In addition to high voltage harnesses for HEV, aim to expand sales of high voltage harnesses, high voltage terminal blocks and high voltage junction boxes for ZEV (EV/FCV). At the same time, expand the lineup of high voltage connectors and other products. Develop products that support large volume communications resulting from software first vehicle development and advances in autonomous driving (Ethernet power cable, connectors, optical fiber), as well as wiring technology (wireless technology, etc.) that also supports additional and changing equipment, such as MaaS vehicles.



High voltage harness



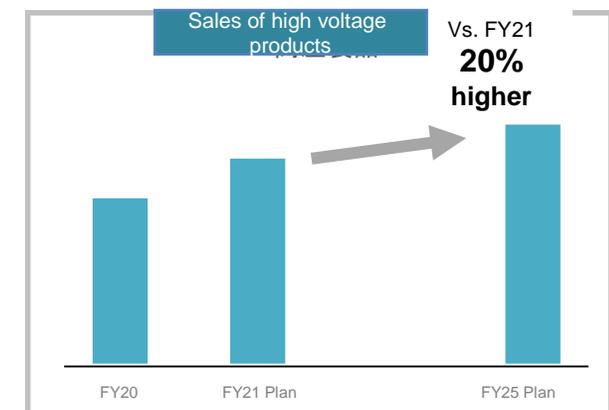
High voltage terminal block



High voltage junction box



High voltage connectors



## (1) Develop and expand green products

- Expand sales of products (aluminum W/H, BSS, high voltage components, etc.) for lightweight, power supply management and vehicle electrification (high voltage)
- Develop new green products (next generation wiring system, future power cable, etc.)  
⇒ Conduct 3R (Reduce, Reuse, Recycle) design, and reduce materials and component use
- Promote measures for the overall business (logistics, partners, etc.)

## (2) Deepen the energy efficient production methods

- Formulate plans for realizing factories with both good energy management and high productivity through the use of IoT  
Promote efforts at the Mie Works and Shiga head office to make energy use visible
- Shift to LED, high efficiency air conditioning, solar powered street lights, etc.

## (3) Promote the use of renewable energy such as solar power (install generation facilities)

- Start generating solar power at the Mie Works (from 4/15)
- At the Shiga head office, consider solar power based on a self-invested format  
(Plan to start generating power in February 2022)
- Already validated the climate change risks as part of the TCFD scenarios, and currently preparing to disclose the FY2021 information

# Initiatives for SDGs with a focus on carbon neutral

Promote initiatives that contribute to reducing CO2 emissions throughout the value chain.

## Raw materials

## Production

## Product uses

Aluminum substrate

Aluminum drawing stock

Aluminum conductor wire

Aluminum wire harnesses

Contribute to reducing CO<sub>2</sub> through the use of aluminum wire harnesses



Raw materials made using hydroelectric power (Indonesia)

TMS (Indonesia)

FAPV (Vietnam)

FAPV (Vietnam)

Copper substrate

Original copper alloys

α terminal, etc.

Wire harnesses & components

Nikko Works

Mie Works

FALP (Philippines)

Geothermal power

Hydroelectric power (Furukawa Nikko Power Generation)



Solar power



FURMEX (Mexico)

Solar power

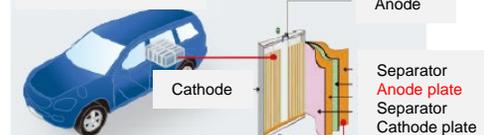
FME (India)

Solar power

Contribute to reducing CO<sub>2</sub> through the use of copper foil for lithium-ion batteries

Contribution of the copper foil to the electric vehicles

Lithium-ion battery



For lithium-ion batteries NC-WS electrolytic copper foil

Recycled copper

Electrolytic copper foil

Reduce CO<sub>2</sub> through the use of recycled material

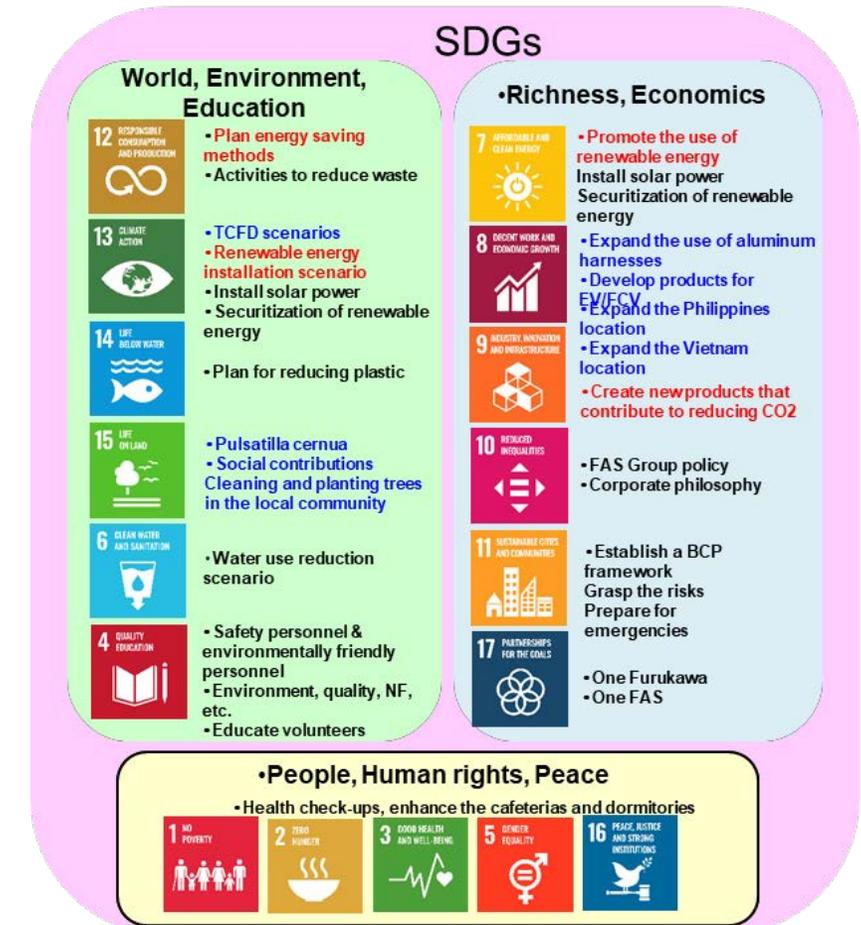
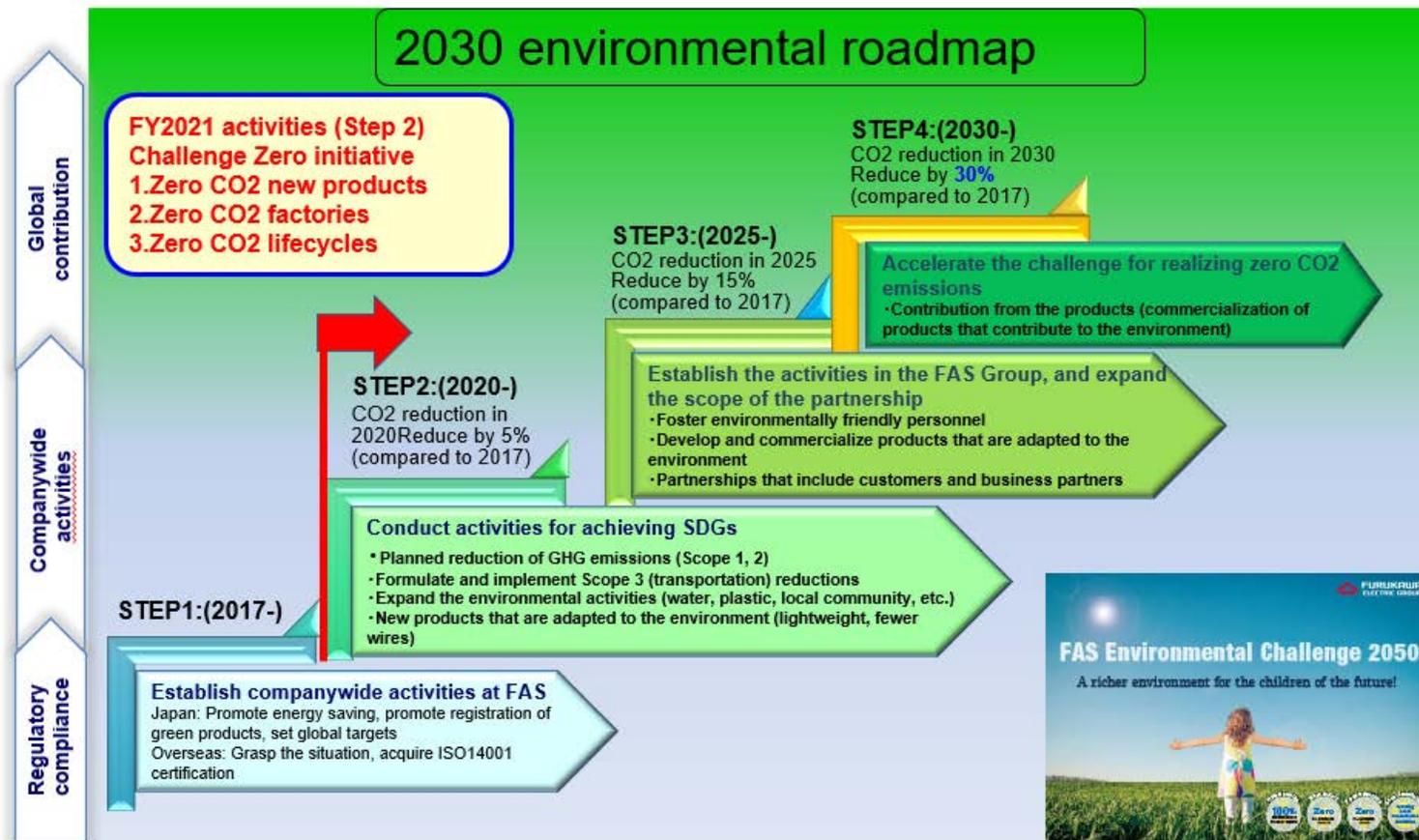
Copper Foil Division

Solar power



# Initiatives for SDGs with a focus on carbon neutral

- Currently conducting activities in accordance with the 2030 environmental roadmap.
- Currently promoting SDGs/ESG.
- Working to achieve “Zero CO2 new products”, “Zero CO2 factories” and “Zero CO2 lifecycles”.



Thank you very much  
for your attention.

***Bound to***  ***Innovate***

## 【FY2021 (Year zero of the 2025 Medium-term Management Plan) basic policy (directed toward achieving Vision 2030)】

As component use increases as a result of the shift toward autonomous driving and vehicle electrification as part of CASE, provide value that will lead to achievement of the customer's targeted SDGs through the development of next generation products and establishment of technologically superior service and kotozukuri. In addition, we will contribute to advances in vehicle safety and autonomous driving. Also, from FY2021, we will steadily reap the benefits and accumulate profits from the investments made in mass production.



### 【Strengths as a division】

- Well-balanced product portfolio that also supports advanced technology
- Product development capability utilizing the original technology accumulated within the group
- Superiority of aluminum wire harnesses and α terminals
- Multi-layer supply chain

### 【Issues and initiatives】

- Strengthen the production network in Asia
- Quickly establish new products
- Global advances in automation and improvements to monozukuri

### 【Future outlook】

While promoting initiatives for SDGs with a focus on carbon neutral, we will grow the business and secure profits by carrying out activities aimed at expanding sales of products for lightweight, power supply management and vehicle electrification (aluminum W/H, BSS®, high voltage components, etc.), developing green products (next generation wiring system, future power cable, etc.), achieving both good energy management and high productivity through the use of IoT and promoting the use of solar power and other renewable energy.

### 【External environment – Main revenue opportunities】

- New opportunities arising from the revolution in mobility
- Growing product needs for green vehicles

### 【External environment – Main risks】

- Supply chain disruption resulting from country risk and climate change risk
- Falling prices as a result of increased global competition



# Appendix – Product overview

	Automotive Products					
						
Safety	●	●	●	●		
Lightweight			●	●	●	
Electrification			●		●	●
Carbon neutral	●	●	●	●	●	●
Products	•Quasi-millimeter wave radar	•Steering roll connector (SRC)	•Lead battery state detection sensor (BSS)	•Products using flat cable	•Aluminum harnesses •Corrosion-proof terminal (α terminal)	•High voltage products
Applications	•Advanced driver-assistance systems (ADAS)	•Connector for airbags	•Vehicle power source management	•Electrical supply and signal transmission for sliding doors and long slide seats	•Reduce the weight of vehicle wiring	•Wiring for electric vehicles
Customers	•Japanese automobile manufacturers	•Tier 1	•Japanese automobile manufacturers	•Automobile manufacturers	•Japanese automobile manufacturers	•Japanese automobile manufacturers