

IR Business Briefing

Electronic Component Material Business

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June 1, 2016

Forward-Looking Statements

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.

Information in these statements reflects assumptions about such variables as economic trends and currency exchange rates.

Forward-looking statements incorporate known and unknown risks as well as other uncertainties that include, but are not limited to, the following items.

- Economic trends in the U.S., Europe, Japan and elsewhere in Asia, particularly with regard to consumer spending and corporate expenditures.
- Changes in exchange rates of the U.S. dollar, euro, and Asian currencies.
- The Furukawa Electric Group’s ability to respond to rapid advances in technology.
- Changes in assumptions involving financial and managerial matters and the operating environment.
- Current and future trade restrictions and related matters in foreign countries.
- Changes in the market value of securities held by the Furukawa Electric Group.

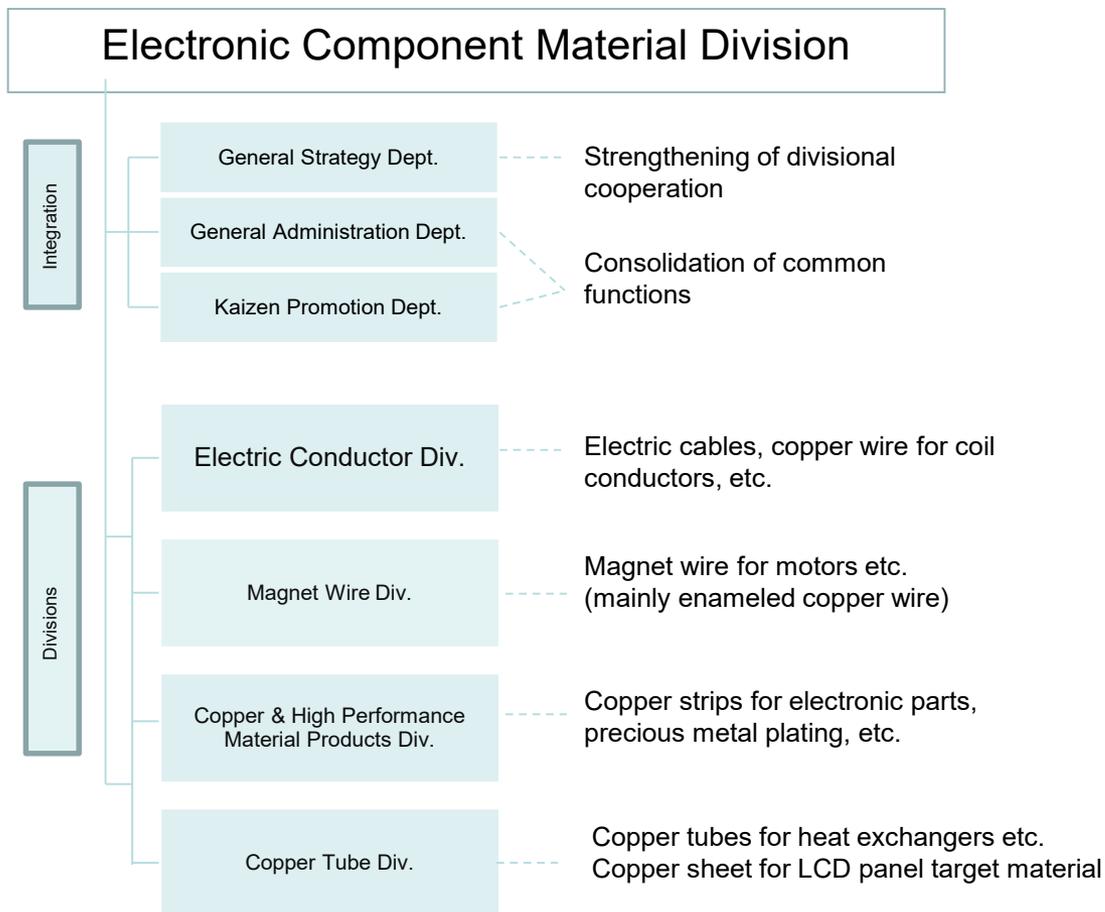
Due to the above factors, actual sales, earnings, and other operating results may differ significantly from Looking Statements in these materials. In addition, following the release of these materials, Furukawa Electric Group assumes no obligation to publicly announce any revisions to forward-looking statements in these materials

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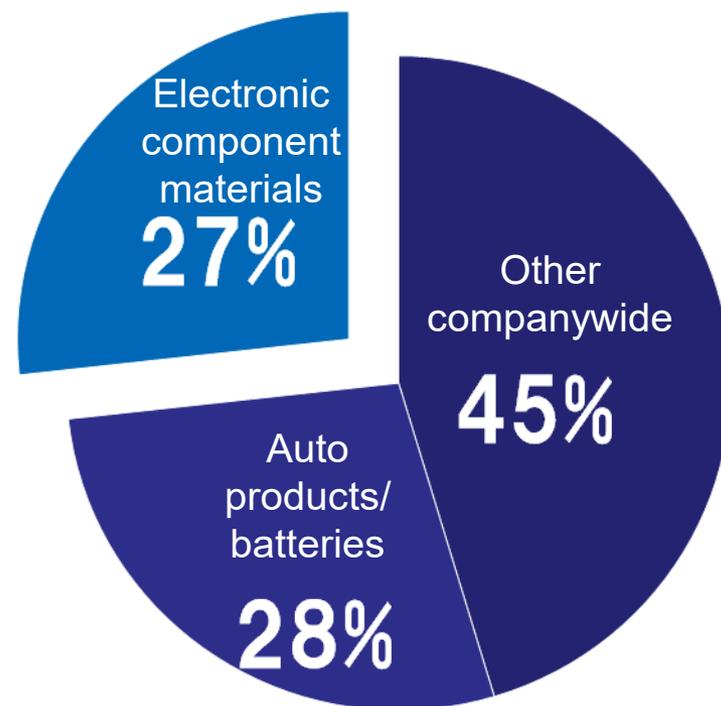
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Furukawa Electric Co., Ltd.

Electronic Component Material Division launched with the aim of enhancing cooperation and consolidating shared functions of 4 strongly related business divisions (especially electric conductors & magnet wires, and copper foil & copper tubes)



Sales (based on 2016 forecast)



Will handle many copper raw materials and contribute to a wide range of markets as a “material supplier” using the product technologies of Furukawa Group companies

Lateral cooperation

Broaden & integrate view of client and market information and speed up market-in



Improve product proposal & technical development capabilities

Vertical cooperation

Sharing of quality information
Effective use of materials
Sharing of unique technologies



Stable quality, stable supply
Speed up various improvement activities

Material Supply (Development into Group Products)

Copper wire



Oxygen-free copper



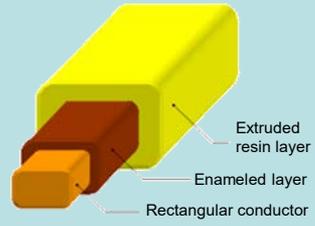
Strips



Plated strips



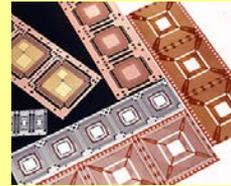
Copper tubes



Enamel wire
(High Voltage wire)



Shielding strips



Semiconductor frames

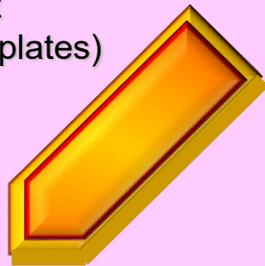


Harness terminals

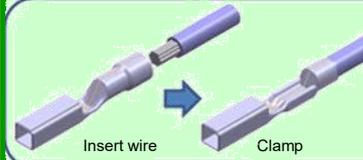


Heat pipes

Target
(thick plates)



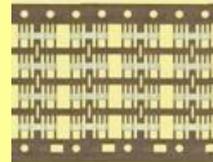
SRC conductors



Anticorrosive (α)
terminals



Superconducting wires



Condenser frames



Wire harnesses

Electric
conductors

Japan
Steadily increasing,
centered on
construction electrical
sales

Overseas
Growth expected, but
overseas local gaining
power in same
business

Key
products
Growing demand for
oxygen-free copper,
high-function alloys

Magnet wires

Japan
Driven by EV/HV,
expected to be firm for
now

Overseas
Promote High Voltage
Wire for automobile
market

Key
products
Ribbon wire,
High Voltage Wire

Copper strips

Japan
Wrought copper
production peaked at
approx. 800,000 t / year

Overseas
Increase status of local
customers in China,
Taiwan, South Korea

Key
products
Increased sales for
heat dissipation
applications, pure
copper plate

Copper
tubes

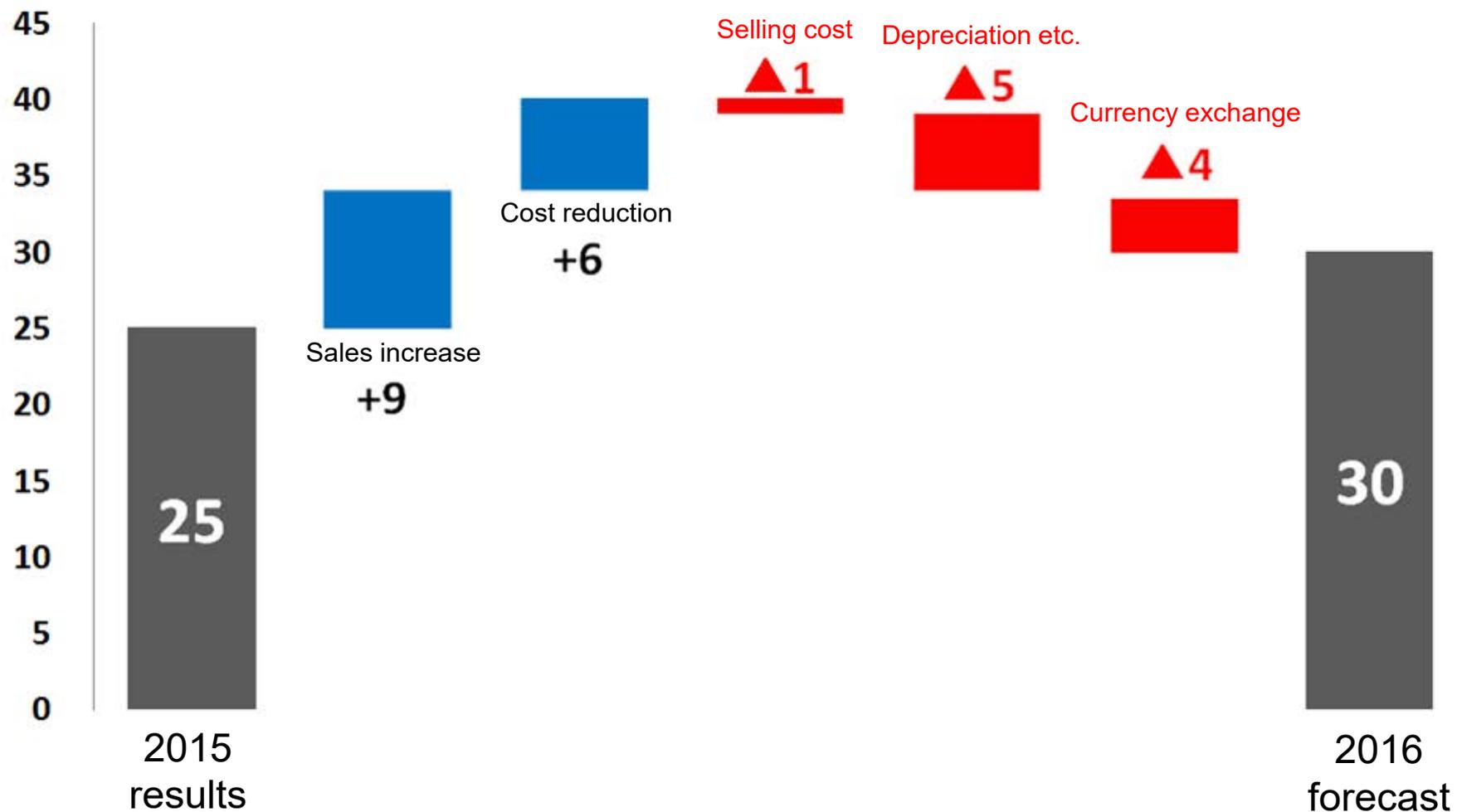
Japan
AC related products are
firm, while there are
concerns over impact
of change to aluminum

Overseas
Cheap items from
China increasingly
distributed

Key
products
Growing applications in
non-AC field

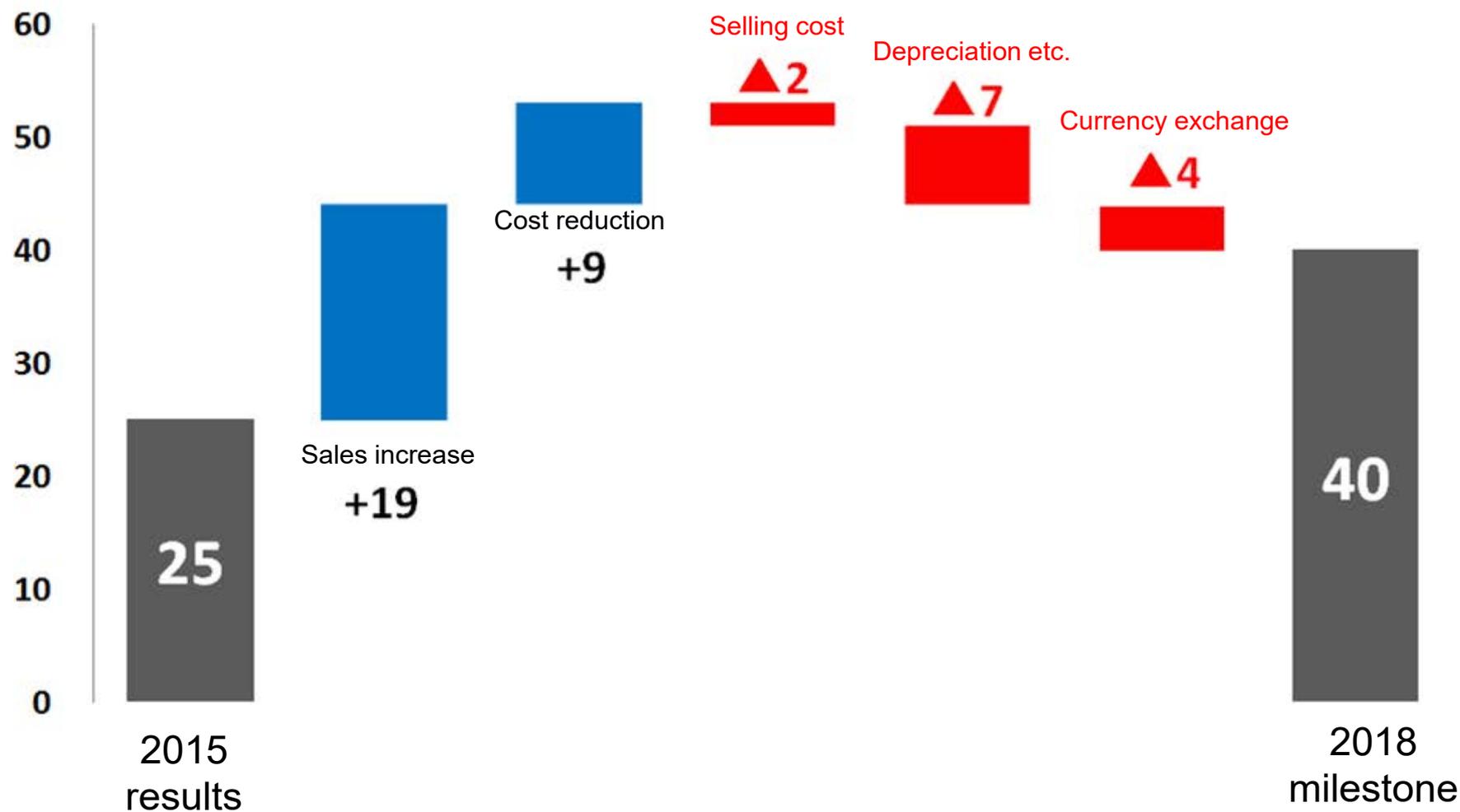
Operating Income (FY2015→2016)

(Unit: ¥100 million)



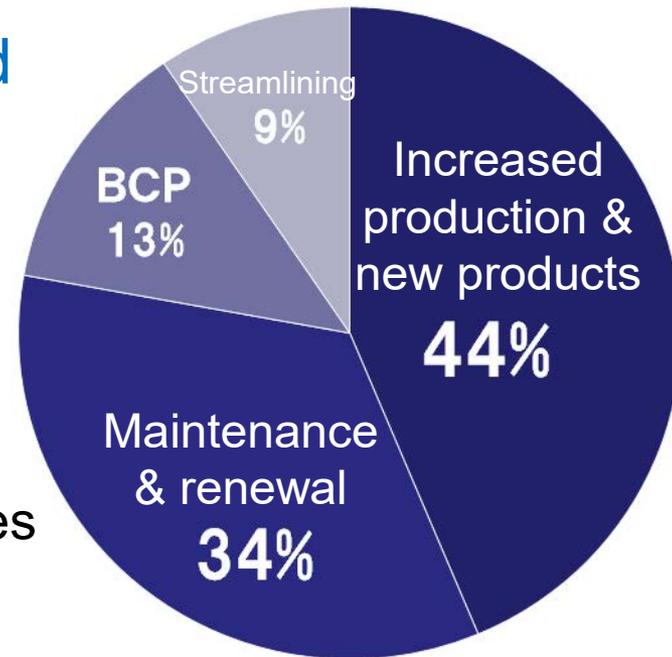
Operating Income (FY2015→2018)

(Unit: ¥100 million)



Focus on investment for increased production of key products

- ✓ Expand oxygen-free copper products
- ✓ Increase high-performance magnet wires



Increased production & new products	Copper strips: Meet increased production of thick plate Magnet wire: Investment for increased production of ribbon wire, High Voltage Wire
BCP	Meet quake resistance & snow resistance in buildings, focusing on Nikko etc.

Electronic Components

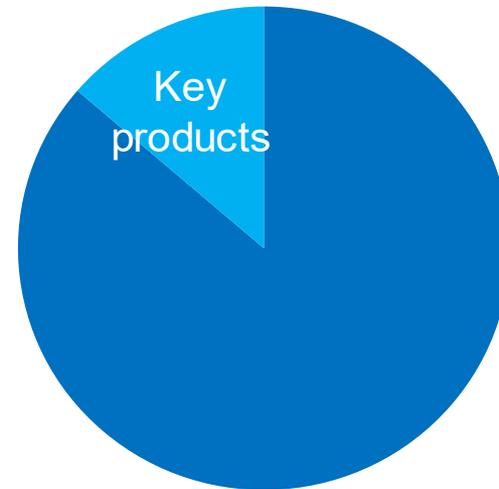
Electronic component materials

- ✓ Expand oxygen-free copper products
- ✓ Increase high-performance magnet wires (ribbon wire, High Voltage Wire)
- ✓ Shift to high value-added products

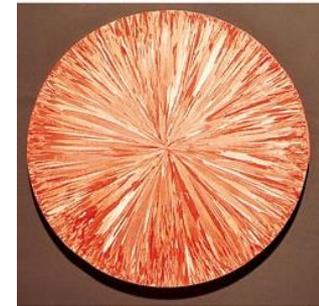
2015 results



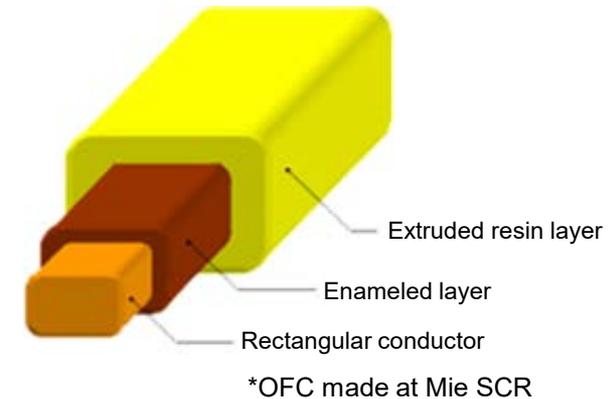
2018 milestone



Manufactured world's only oxygen-free copper ingots with high-efficiency shaft furnace
JIS C1011 (oxygen-free copper for electronic tubes) approval
application pending



▶ Bus bars for power distribution, cable shielding, rectangular wire, oxygen-free copper



▶ We utilize this excellent quality by applying it in **metallic superconducting wire**

Expand industrial products that use oxygen-free copper



Long rectangular tubes



Copper tubes for power cables and electronic parts

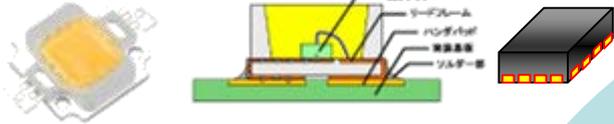


Heat pipes

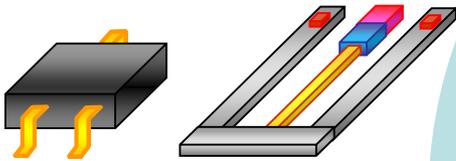


Leakage coaxial cables

LED, QFP

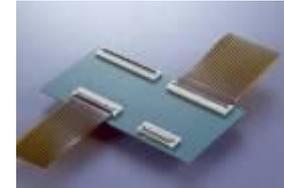


Sensor frames



Lead frames
(EFTEC-64T)
(MF202)

Substrate to substrate
connector

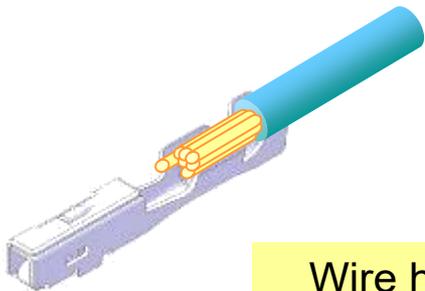


Communications
connectors
(EFCUBE series)
(EFTEC-97)

Memory sockets



Automotive
connectors
(low insertion
Cu-Sn plated)



Wire harness
terminals

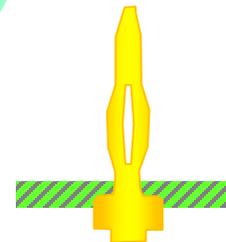


Power
connectors
(EFTEC-550T)
(EFTEC-550E)

Supply terminals



Press-fit



High Value-Added Products

- **High-performance conductor for magnet wires**
OFC: Low-cost oxygen-free copper wire with high surface quality for rectangular magnet wiring
Expand production capacity to meet rising demand

- OFC: Oxygen-free copper wire made at Mie SCR



- **High-function copper alloy wire**
UHD: Conductor used in smartphones, tablets, medical cables
Increase capability to extend applications,
enhance sales structure

- UHD: Ultra high drawability products, combine high conductivity with high strength (high flexibility)



Market needs

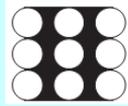
Our technology

Products

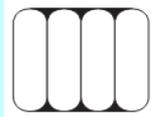
Compact

Metal processing technology

Space factor
approx. 78%



approx. 96%



Rectangular
wire

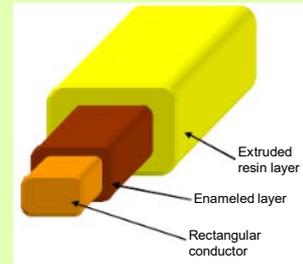
Ribbon wire

for smartphone
inductors



High Voltage Wire

For HV-MG



Heat resistant

Polymer technology

Wire enamel technology

polyamide-imide
insulation

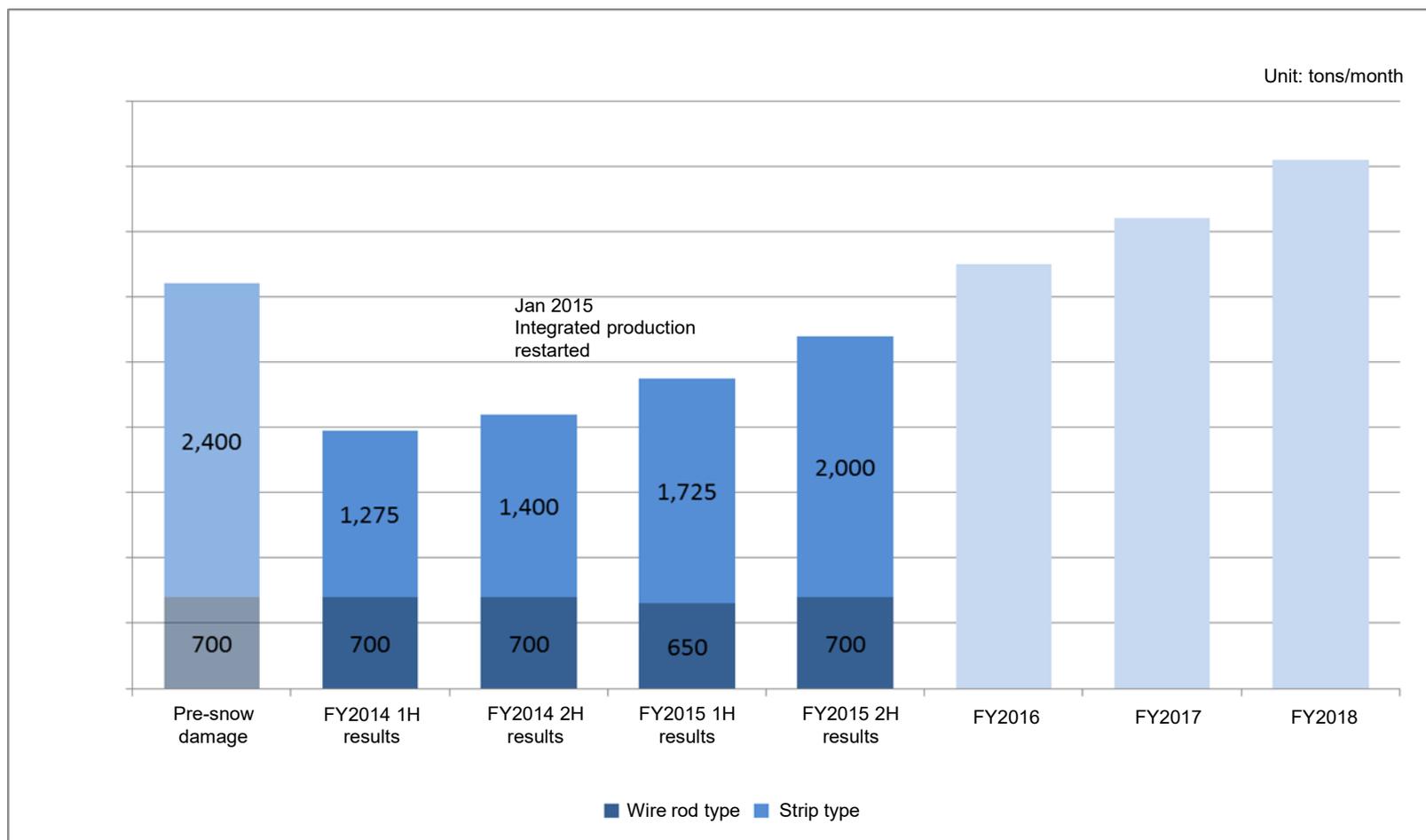
High voltage

Polymer technology

Extrusion technology

Covered with
extruded super
engineering plastic

Sales Recovery at Nikko Copper Rolling Plant



Having fallen to 60% of its pre-snow damage level, sales volume bounced back strongly after the restart of integrated production in January 2015 and recovered to 89% of its pre-snow damage level by Q4 of FY2015. Sales volume in FY2016 is expected to reach 105% of its pre-snow damage level.

Bound to  *Innovate*