September 8, 2025

Panasonic Corporation
JX Advanced Metals Corporation

Co-Creating a Circular Scheme for Copper Recovery from Used Home Appliances

— Enhancing Traceability of 100% Recycled Copper and Returning It Back into Products —

Panasonic Corporation Living Appliances and Solutions Company (Hereinafter "Panasonic"), and JX Advanced Metals Corporation (Hereinafter "JX") will jointly launch a circular scheme to recycle copper scrap recovered from end-of-life home appliances and reuse it in Panasonic Group products, starting from September 2025.

In recent years, the Japanese government has been promoting a "circular economy" (*1). This scheme is positioned as a new value-creation model that contributes to decarbonization by fostering collaboration between the manufacturing and recycling industries to strengthen domestic resource recovery and the use of recycled materials.

The Panasonic Group has long been engaged in the collection and recycling of end-of-life appliances under the Home Appliance Recycling Law in Japan. As part of this effort, copper scrap recovered from the four specified categories of appliances under the law (air conditioners, televisions, refrigerators, and washing machines) has traditionally been sold to smelters and other companies, where it was recycled into electrolytic copper and subsequently used as raw material for copper foil, wires, and tubes. However, the exact amount of recycled electrolytic copper reused in Panasonic's own products has not been accurately traceable. To address this, Panasonic will utilize JX's newly introduced material flow management system within its copper smelting process (*2), enabling precise and reliable use of electrolytic copper equivalent to the amount of copper scrap supplied by Panasonic.

This electrolytic copper can effectively be regarded as being derived solely from scrap, requiring no large-scale fuel or electricity consumption for ore mining and other processes. Consequently, it is considered to generate significantly lower greenhouse gas emissions compared to conventional electrolytic copper. According to JX's estimates, this results in a reduction of approximately 2–3 tons of greenhouse gas emissions per ton of electrolytic copper. With this approach, Panasonic Group will be able to procure electrolytic copper with a significantly lower carbon footprint (CFP) than before, ensuring a stable supply for use in copper components across its products.

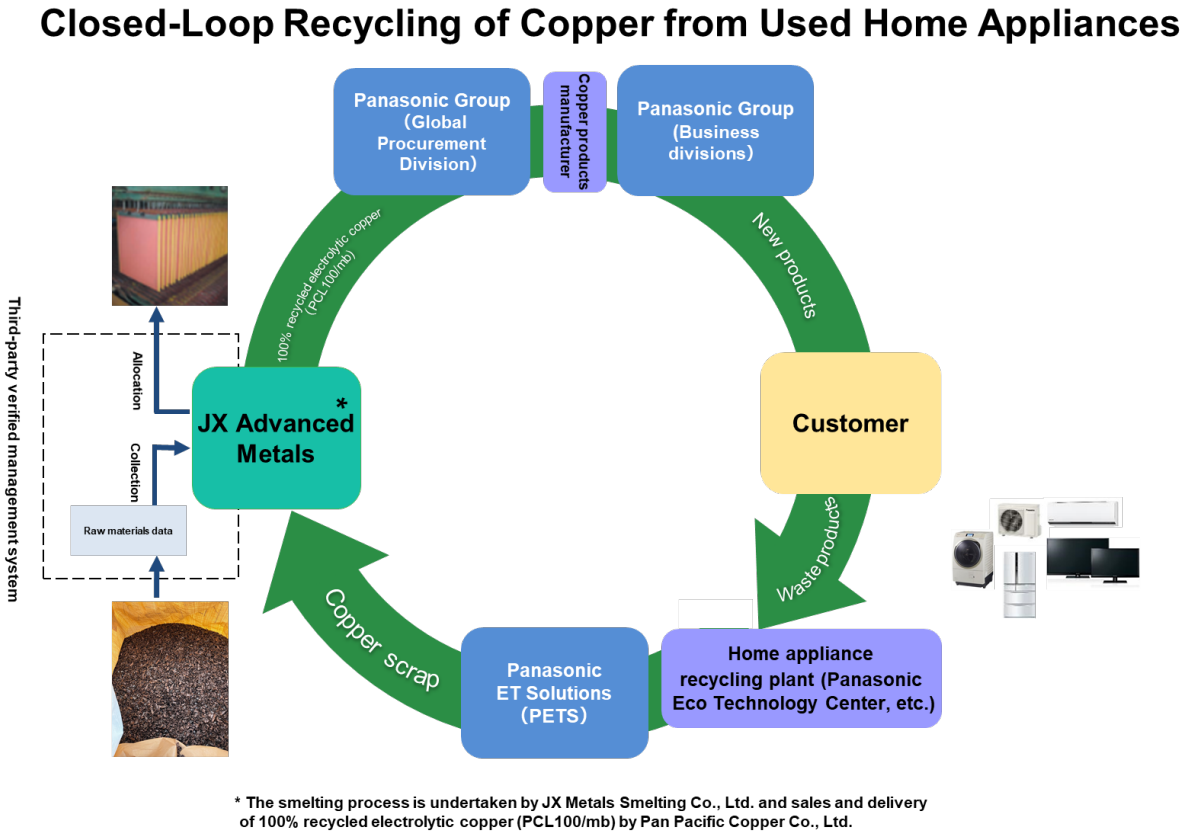
Looking ahead, Panasonic will reinforce its copper scrap collection system through appliance recycling, while JX will advance recycling technologies and material management systems to further increase the recycling ratio of electrolytic copper. Together, both companies will contribute to realizing a circular economy as partners co-creating resource circulation.

[Outline of the Scheme]

Panasonic ET Solutions Co., Ltd., a subsidiary of Panasonic, will collect copper scrap extracted from end-of-life appliances at home appliance recycling plants across Japan. The collected scrap will be supplied to JX, which will recycle it into electrolytic copper.

JX will appropriately manage the volume of copper contained in the Panasonic-derived copper scrap, under a third-party verified management system (*2) based on standards such as ISO 22095. By applying a mass balance method (*3), which also accounts for processing losses, JX will produce 100% recycled electrolytic copper (PCL100/mb (*4)) that can be regarded as derived from scrap supplied by Panasonic.

This low-CFP electrolytic copper will then be purchased by the Panasonic Group, processed, and once again used in Panasonic Group manufacturing.



(*1) Ministry of Economy, Trade and Industry: “Growth-Oriented Resource Autonomy Economic Strategy (Summary)”
https://www.meti.go.jp/press/2022/03/20230331010/20230331010-1.pdf *Japanese only
Ministry of the Environment: “The Fifth Fundamental Plan for Establishing a Sound Material-Cycle Society (Summary)”
https://www.env.go.jp/content/000242562.pdf *Japanese only
(*2) A management system of the processing and distribution process (Chain of Custody) that reliably implements material flow management of recycled raw materials and electrolytic copper produced from recycled raw materials, which is a prerequisite for the operation of the mass balance method.
JX Advanced Metals news release dated July 3, 2024 (https://www.jx-nmm.com/newsrelease/2024/20240703_01.html). *Japanese only
In addition, as of early September 2025, prompt compliance with ISO 13662, which is still in the process of standardization, is also planned.
ISO 22095 is an international standard that defines general terminology and models for Chain of Custody.
ISO 13662 is an international standard that stipulates requirements and guidelines for applying the mass balance method in Chain of Custody.
(*3) The mass balance method is an approach whereby, when a product is manufactured from a mixture of raw materials with different characteristics, a particular characteristic is allocated to a portion of the product in proportion to the input amount of raw materials with that characteristic.
(*4) 100% recycled electrolytic copper produced by JX using the mass balance method.
JX Advanced Metals news release dated January 31, 2024 (https://www.jx-nmm.com/english/newsrelease/fy2023/20240131_04.html).

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