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JX Metals Corporation

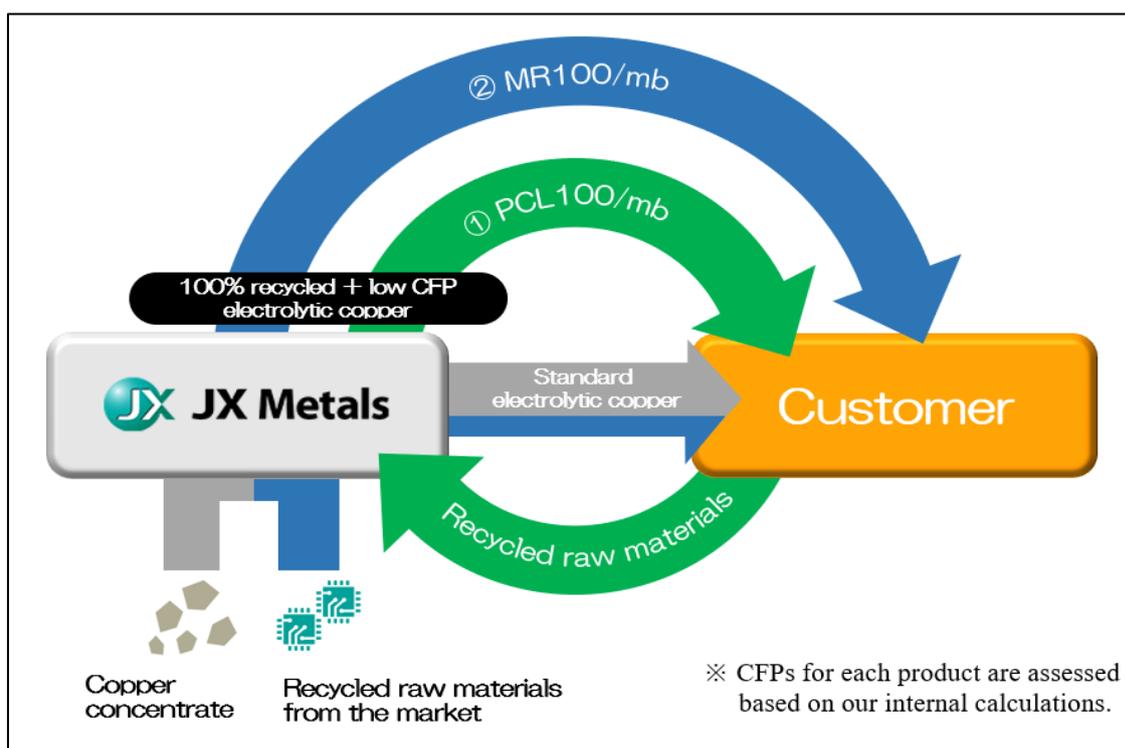
## New Proposal for the 100% Recycled Electrolytic Copper Supply Model

~Resource recycling co-created with customers~

JX Metals Corporation (President: Hayashi Yoichi; hereinafter referred to as “the Company”) will launch 100% recycled electrolytic copper applying the mass balance method in cooperation with a third-party organization.

Based on our Sustainable Copper Vision <sup>(\*)1</sup>, JX Metals has been promoting Green Hybrid Smelting <sup>(\*)2</sup> as well as pursuing an optimal copper supply scheme for the market from multiple perspectives such as resource recycling, decarbonization, stable supply of copper, clear traceability of raw materials, and economic reasonableness, in response to a wide range of customer needs. The mass balance method <sup>(\*)3</sup> has already been applied for 100% biofuels, 100% recycled plastics and aluminum, and we have decided to commercialize 100% recycled electrolytic copper using this method.

The Company proposes the following two types of 100% recycled electrolytic copper applying the mass balance method. Both are the first attempts in the domestic copper smelting industry, and in particular, (1) is an advanced proposal under which the Company and our customers co-create solutions to the social issues of resource recycling and decarbonization.



(Fig. 1) Supply model for 100% recycled electrolytic copper

### **(1) PCL100/mb (Partnered Closed Loop 100% mass balance method)**

This product enables the copper incorporated in the customer's products to be reintegrated back into the customer's own products. Specifically, the equivalent amount of copper contained in recycled raw materials, such as those from end-of-life products collected by the customer, is returned as 100% recycled electrolytic copper. This can be described as closed horizontal recycling.

Traditionally, we have supplied the market with electrolytic copper by mixing recycled raw materials with copper concentrates. Therefore, the smelting and recycling process itself is not different under this scheme. However, this scheme, which applies the mass balance method, enables us to supply 100% recycled electrolytic copper with the same high quality as before, clear traceability of raw materials as they are supplied by customers, and superior CFP (\*4, 5).

### **(2) MR100/mb (Mixed Recycle 100% mass balance method)**

This product supplies 100% recycled electrolytic copper using the mass balance method, based on recycled materials collected from the market through the JX Metals Group's recycled material collection network. Even though it is not closed horizontal recycling, it has the same characteristics as (1) in other respects.

The Company plans to launch this product in 2024 and sell it from Pan Pacific Copper (President: Hori Kazuhiro), and has already started discussions with some customers on a trial basis. In addition, in order to realize products using the mass balance method, the Company has established its own chain of custody standard, based on the chain of custody standard of ISO 22095, and with reference to that of the ASI (\*6) and The Copper Mark (\*7). The Company is currently undergoing certification work by a third-party on the adequacy of the management system for implementing this concept.

The Company has also launched the “Cu again” project, which aims to promote the social implementation of this product. “Cu again” expresses the wish that electrolytic copper (Cu), after completing its role in society, will be returned as scrap and recycled repeatedly to support future society.

The logo design also expresses the image of aiming for infinite ( $\infty$ ) circulation together with every party involved in the resource circulation of copper.



(Fig. 2) Logo design of “Cu again”

Going forward, the company will continuously contribute to the realization of a sustainable society through the various measures stated in the Sustainable Copper Vision in our integrated business operations of advanced materials, metal smelting, recycling, and resource development.

\*1 For details of the Sustainable Copper Vision, please refer to the press release of 3 August 2022, [“Sustainable Copper Vision: JX Metals Aims to Supply Sustainable Copper”](#) and the attached file [“Sustainable Copper Vision: JX Metals Aims to Supply Sustainable Copper.”](#)

\*2 The JX Metals Group is promoting “green hybrid smelting” at its Saganoseki Smelter & Refinery, which utilizes both recycled raw materials and copper concentrates and requires almost no fossil fuels, with the aim of increasing the recycling ratio to 50% by 2040. The smelter has already completed the introduction of CO<sub>2</sub>-free electricity and is manufacturing electrolytic copper and other materials using a low-CFP smelting process and 100% recycled electrolytic copper. Using the mass balance method is expected to provide further advantages in terms of CFP.

For more information, please refer to

<https://www.jx-nmm.com/english/company/industry/metal-recycling/#anc04>

\*3 When raw materials with different properties are mixed, this method allocates these properties to certain parts of products according to the input ratio of the raw material with a certain property.

\*4 We are the first company in the domestic copper smelting industry to have completed the calculation of the carbon footprint of electrolytic copper and obtained third-party certification for the results. For details, please refer to the press release dated 7 July 2023, [“Calculation of Electrolytic Copper Carbon Footprint and Third-Party Assurance of Results.”](#)

\*5 The CFP can be considered to be smaller than that of our existing products because copper raw material can be regarded as being derived only from recycled raw materials rather than from copper concentrates, which account for a large proportion of the CFP of electrolytic copper (based on our calculations).

\*6 The ASI (Aluminium Stewardship Initiative) Chain of Custody Standard is as follows:

<https://aluminium-stewardship.org/asi-standards/chain-of-custody-standard>

\*7 The Copper Mark Chain of Custody Standard is as follows:

<https://coppermark.org/standards/chain-of-custody-standard/>