

INTRODUCTION OF COPPER RECYCLING PLANT

**SANRITSU MACHINE INDUSTRY
CO.,LTD**

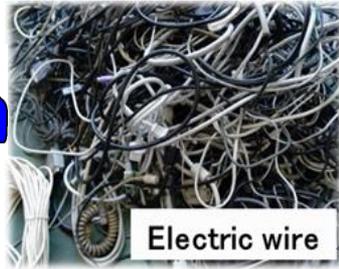
ABOUT US

- Sanritsu Machine Industry is contributing to a recycling society by reuse of valuable metal resources through waste electrical wire recycling treatment equipment.
- In the future, we will strive continuously to develop new products and improve our technologies, with the aim of being an “Only One” manufacturer that can propose unique solutions to niche markets, by taking advantage of our original know-how and experience.

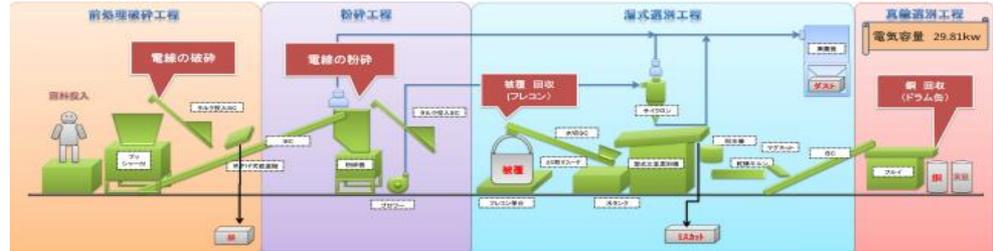


WIRE HARNESS RECYCLING FLOW

Wire Harness Recycling from ELV (End of life vehicle)



Electric wire



Wet-Type Gravity Concentration



Copper Nuggets

SMELTER&REFINERY



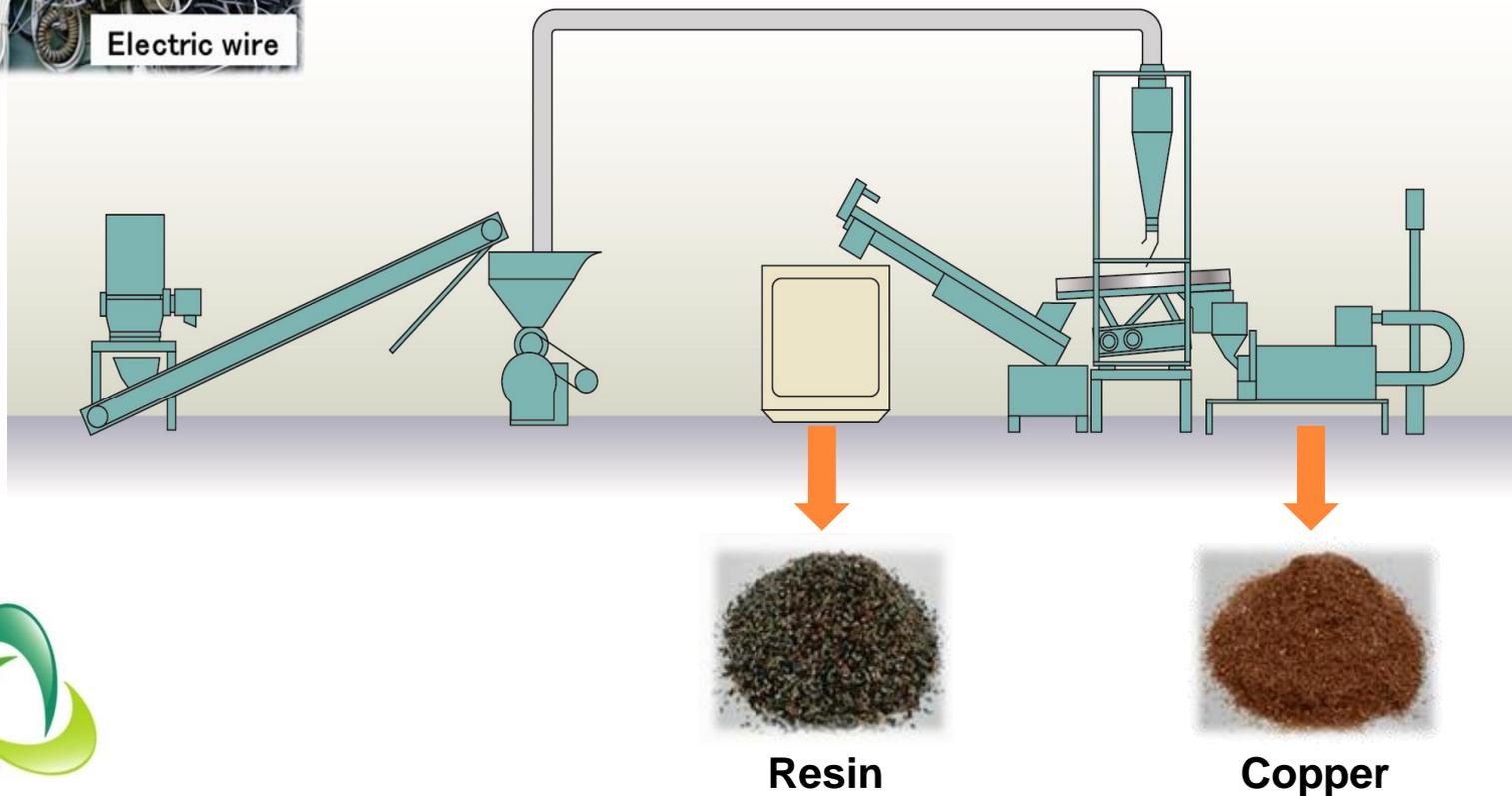
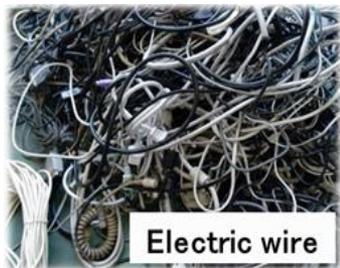
Copper Ingots



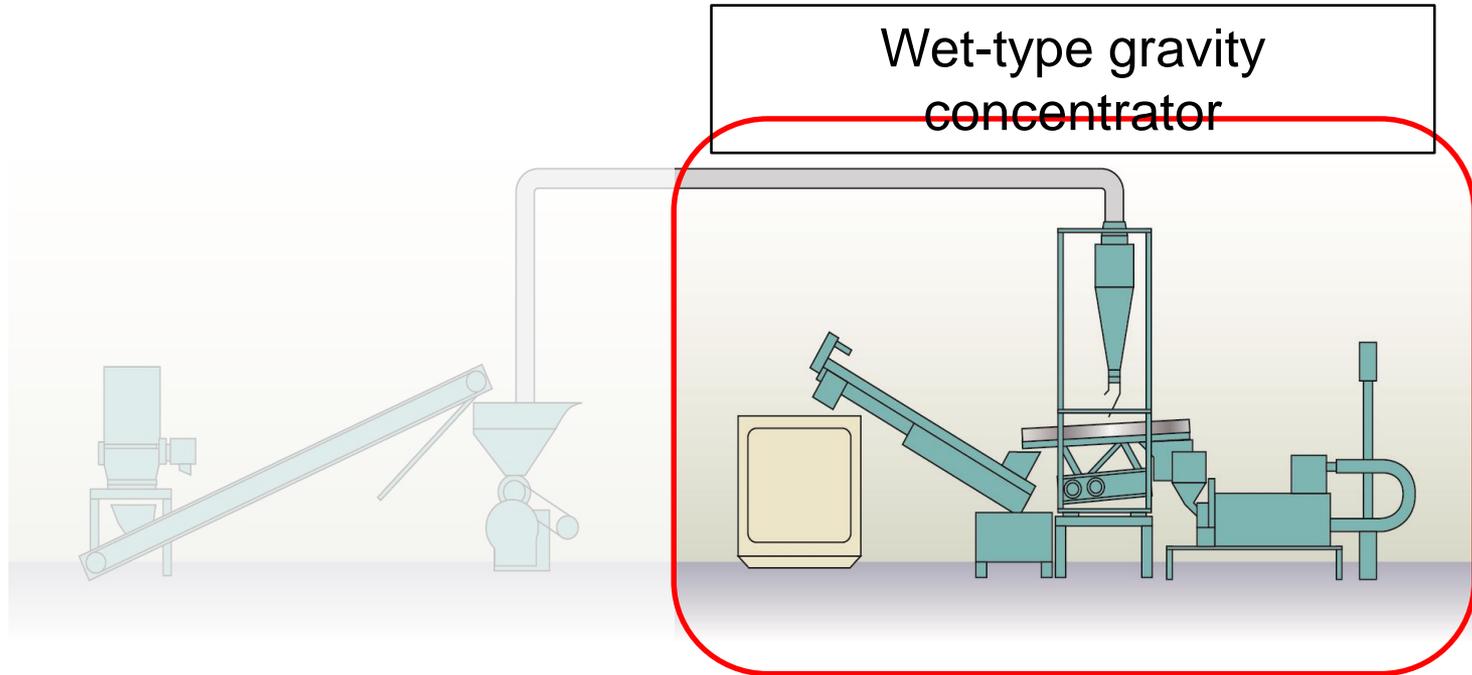
PRODUCT FOR WIRE HARNESS RECYCLING

Separating process

Wire harnesses are charged into the Crusher. After crushing, the material is separated into copper and resin by the Classifier.



Wet-type separating process (Our key technology)

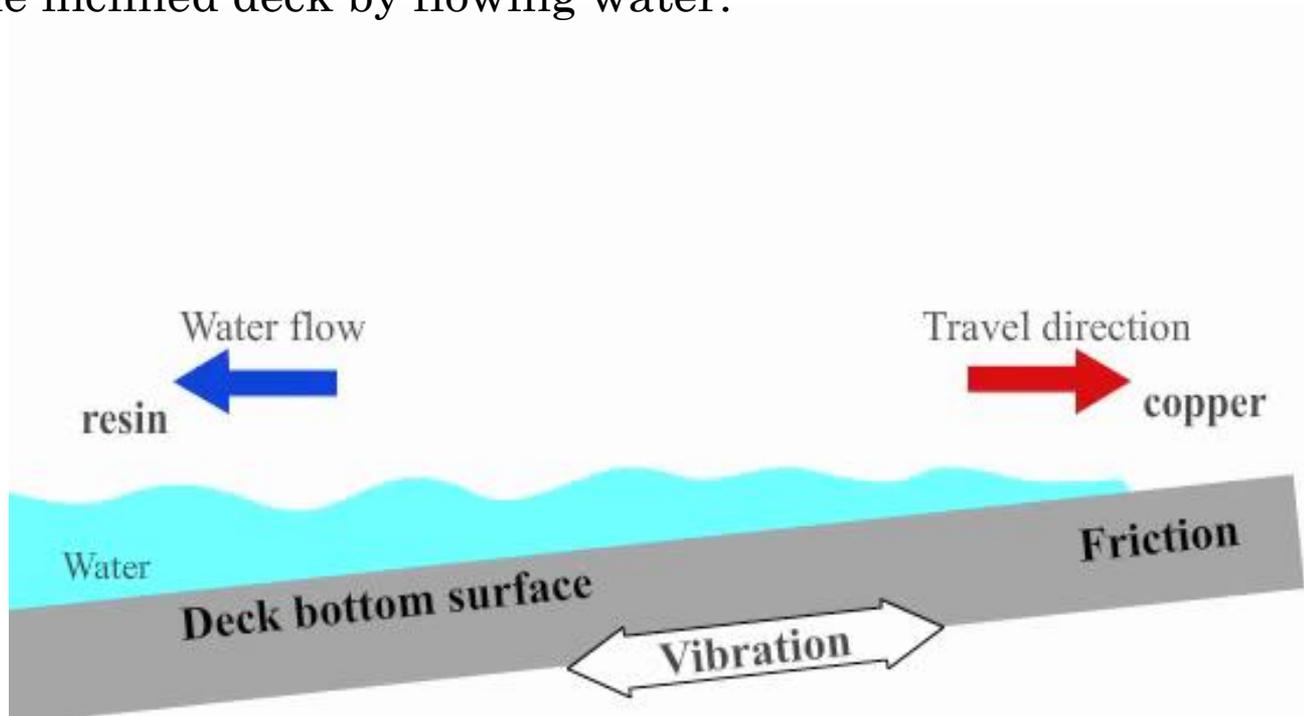


The wet-type gravity classifying method has a high accuracy recovery rate, and copper recovery loss is small.



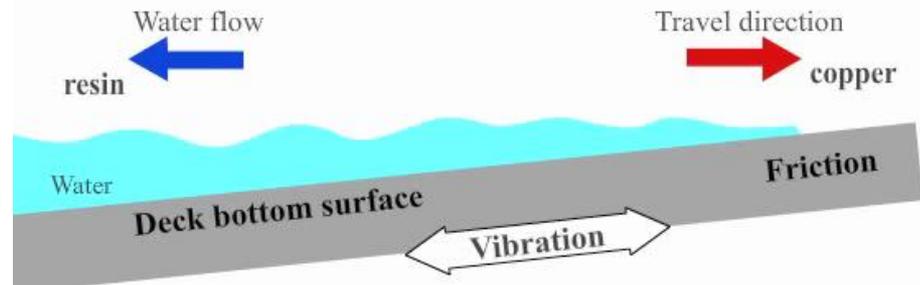
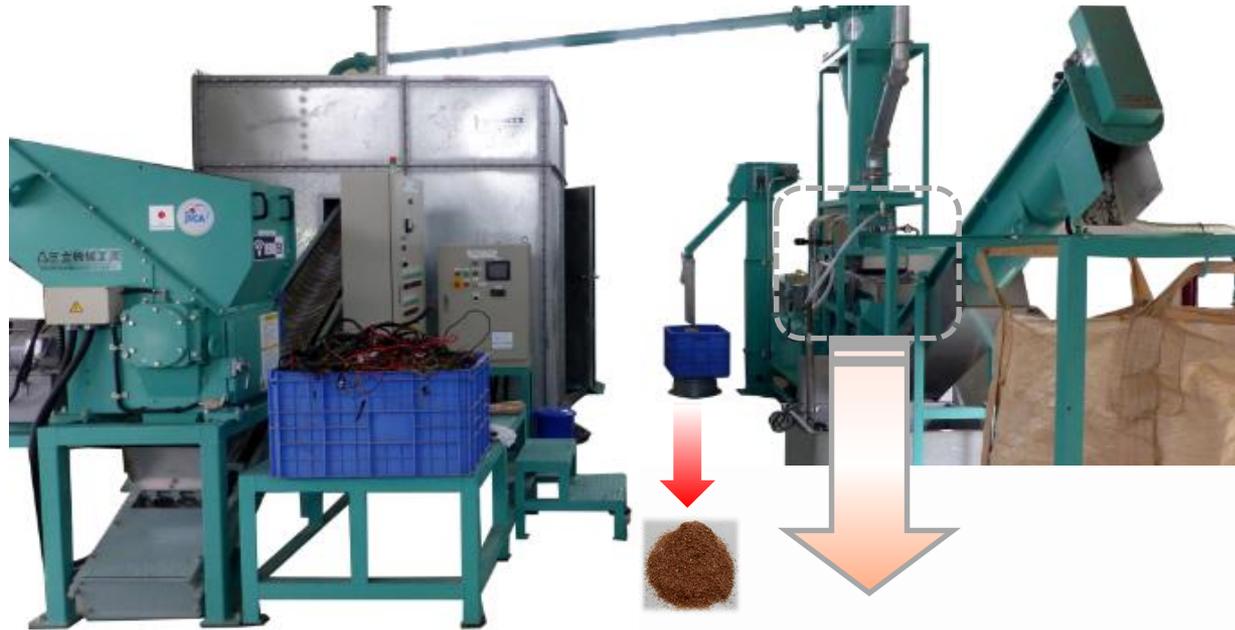
Principle of Wet-Type Gravity Concentration (Thin-Flow Concentration)

Covered wires with a low specific gravity are carried to the lower side of the inclined deck by flowing water.



SUPERIORITY OF WET-TYPE SEPARATION

In comparison with dry-type gravity separation, the wet type boasts excellent separation accuracy of 99% and a high copper recovery rate for wire harnesses and other types of fine wire.



CURRENT PROBLEM ON WIRE HARNESS RECYCLING



Before (50.0kg)

Incineration experiment of waste wire-harness (50kg)



under Incineration



After (27.2kg)



COPPER RECYCLING BUSINESS MARKET IN INDIA

Supply and demand of Copper in India

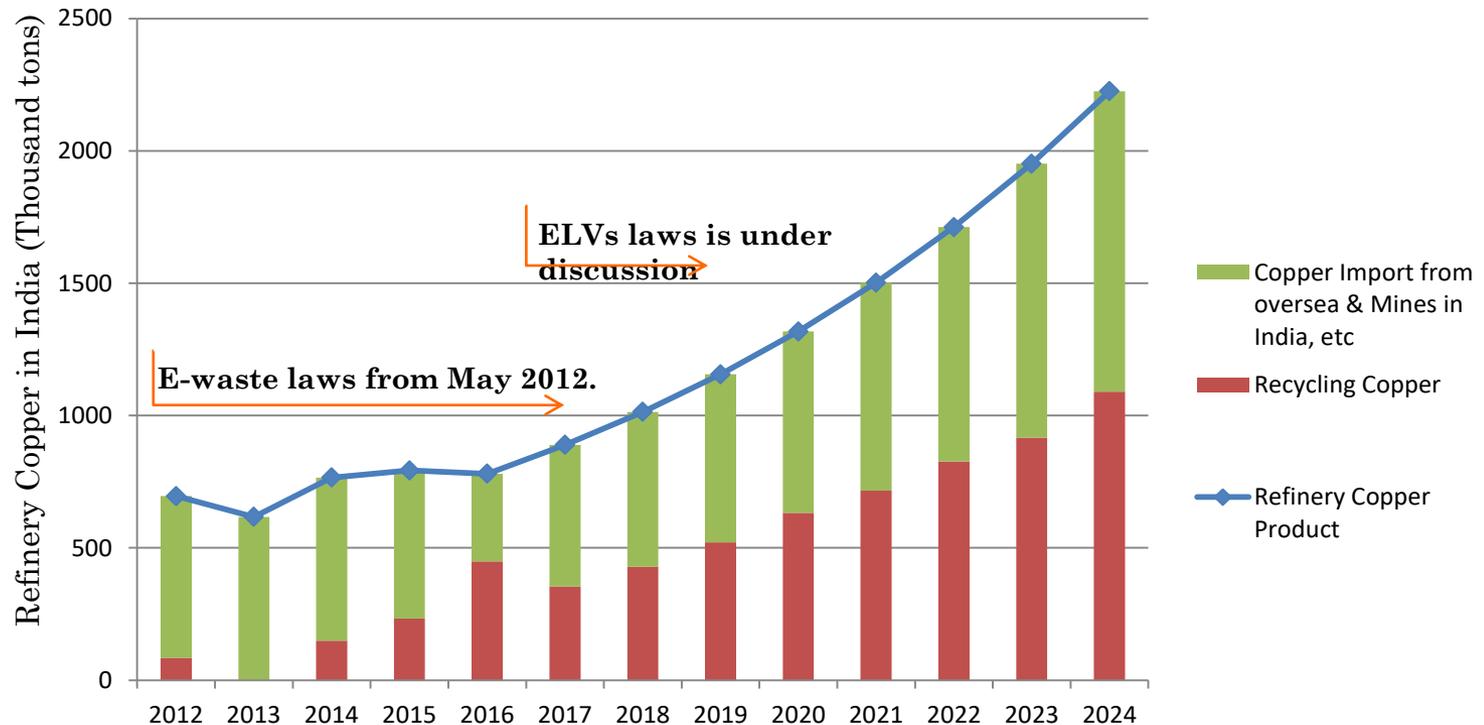


Table Apparent Production of Copper in India 2012 to 2024

Source : ICSG 2016 Statistical Yearbook, ICDC Market Survey on Copper



APPEARANCE OF COPPER RECYCLING PLANT



WN-800, Full Specification Package(with Sound Shield)

Throughput
(treatment capacity)

100- kg/hour (gross)
φ2.5 crushing: 100 kg

Size

10.0(L)x6.0(W) x3.5(H) (m)

Weight

3,000kg



三立機械工業
sanritsu machine



GARC (in Oragadam)



Recycling plant in GARC



Opening Ceremony



GARC WELCOMES YOU
for the Inauguration of
WIRING HARNESS RECYCLING PLANT
(Founded By Japan International Cooperation Agency)

jjica

Inaugurated By
Thiru. SANJAY BANDOPADHYAYA, IAS
Chief Executive Officer & Project Director, NATRIP

On
04th Nov 2016 at 11.00 am

Wiring Harness Copper Wet Plastic Dust

NATRIP
Driving India Into The Future

The panel to introduce our product

COPPER RECYCLING BUSINESS SIMULATION (CASE1)

	Year 1	Year 2-	Remark
Input (Volume of cables)	120kg/day ↑ 20units/day	180kg/day ↑ 30units/day	The capacity of the copper recycling unit WN-800 is estimated to be 1,000kg(= 1 ton) per day. 6kg cables in 1 unit of vehicle
Output (Volume of copper)	72kg/day ↑ 60%	108kg/day ↑ 60%	Approximately 60% of the wire harness is expected to be recovered as copper with high quality
Expected annual revenue	USD200,232/year	USD300,348/year	The price of copper (LME) on 28 Feb. 2022 : USD10 ,909/ton LME price X 85% : the sales price of recovered copper
Expected annual profit	USD142,258/ year	USD230,936/ year	Labor cost and management expenses are deducted (prior to depreciation of equipment)

Working days: 300 days/year

Recovery scenario of investment (**USD272,727** for our equipment WN-800, equivalent to JPY30mil)

Balance between investment and profit	(-) USD130,470	(+) USD100,467	(accumulated annual profit) – USD272,727
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The period to recover the investment of equipment is **1.5 years**.



COPPER RECYCLING BUSINESS POTENTIALITY IN INDIA

Conclusion

- The manufactured volume of the copper recycling unit WN-800 is estimated to be 100kg per hour.
- Copper recycling facility is expected to cost some JPY 30,000,000 (USD 272,727) and to recover the investment within the period from 4 months to 1.5 years in 2 cases scenarios.
- In 2024, among Copper Recycling commerce in India, We estimate that the market size of copper recycling from Wire harness of Automobile is about 2.5 billion dollar, and the market size of the whole copper recycling is about 6.4 billion dollar.



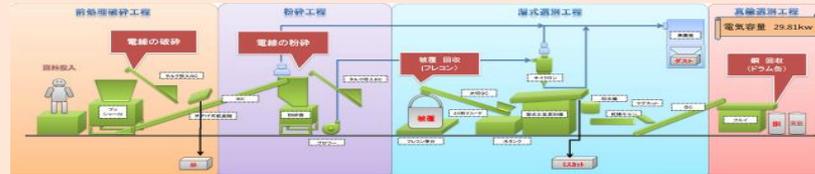
COPPER RECYCLING BUSINESS MODEL WITH SANRITSU

The Advantages of Confidentiality → Strategy

Closed system of Wire Harness Recycling from ELV



Electric wire



Wet-Type Gravity Concentration



Wire Harness with socket and IC circuit can be processed with minute adjustment of crusher



Copper Nuggets



三立機械工業
sanritsu machine

+ Fuse Boxes

(Separation)

Added recycling value

SMELTER&REFINERY





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sanritsu machine industry co.,ltd

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