

Circular Economy in Region

AI technology from NEC advances regional resource circulation as an important step towards carbon neutrality.



Together with industry, government, academia, and citizens, Reducing CO2 emissions through regional resource recycling



Promoting a citizen-led
recycling lifestyle



Employing AI for high quality
recycling of all materials



Generating high value-added
products and local jobs

Aluminum recycling in the future

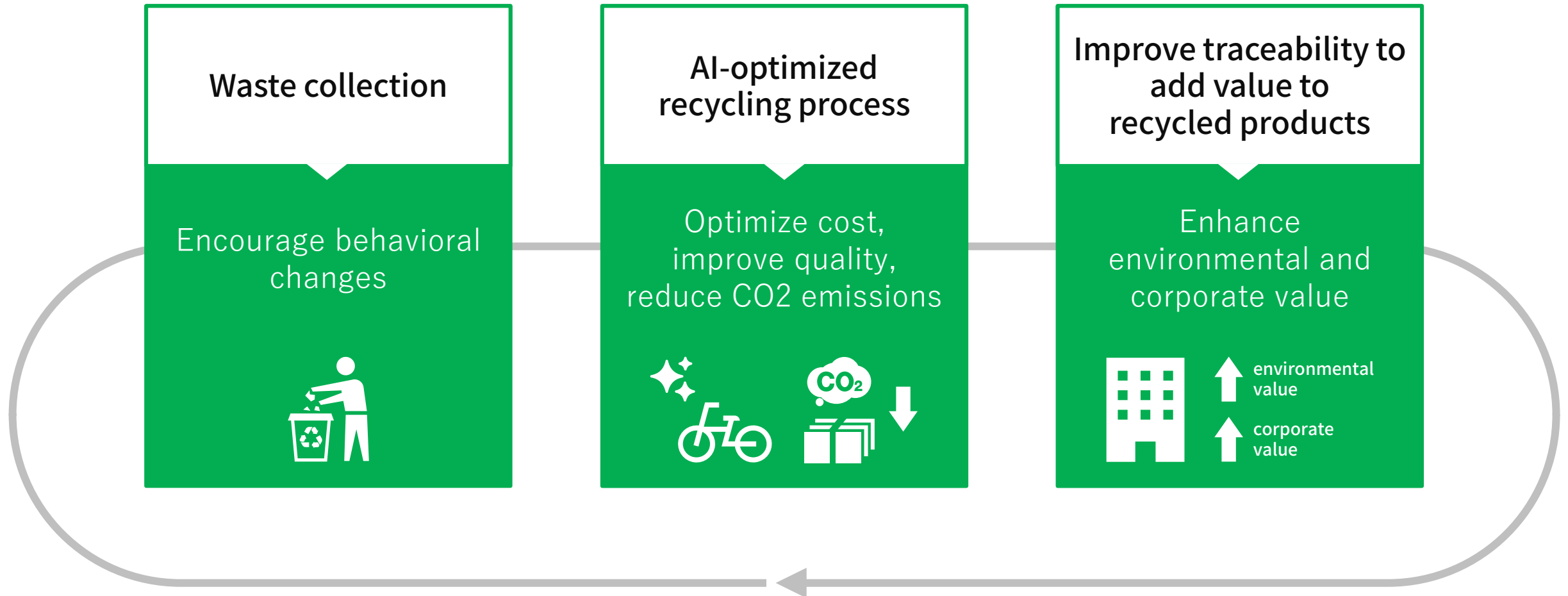
Future upgrade
recycling strategies



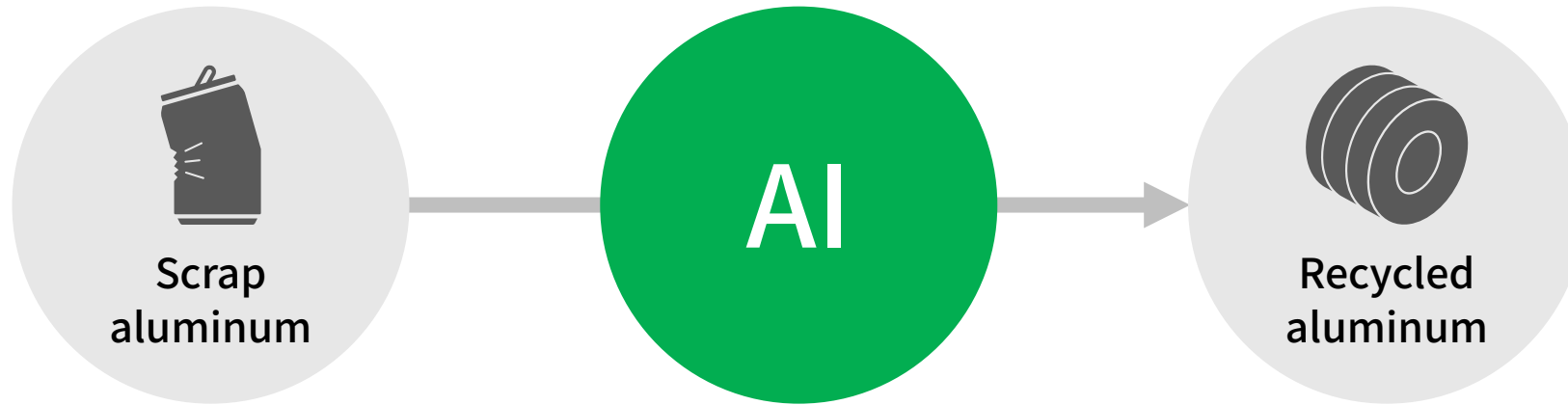
Current recycling
practices



Stabilizing regional resource supply through aluminum recycling



Using AI to optimize the aluminum refining process



Difficult to remove other chemical elements from the aluminum



Extracting the best refining process from many patterns

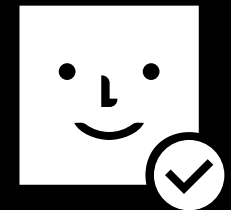


Determining the quality standards for recycling

Image processing
technology backed by

World's No.1

Face Recognition
technology*



*Based on benchmark testing conducted by the U.S. National Institute of Standards and Technology (NIST) <https://jpn.nec.com/biometrics/face/history.html>

NEC's Image processing technology will be used to measure the mount of copper impurities using STEM*

The amount of copper is large, and the required Specifications cannot be met

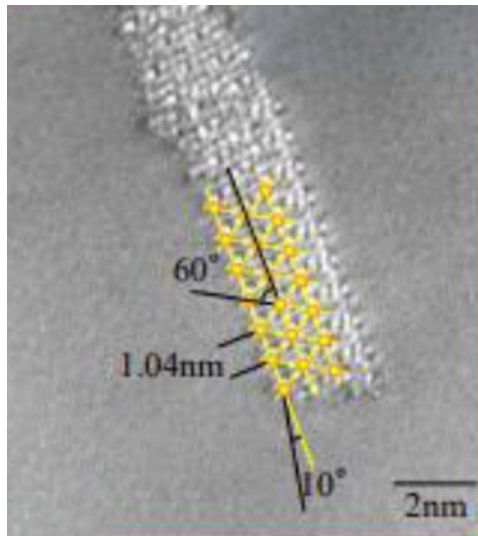


Photo Provided by Toyama University

The amount of copper is small and the required Specifications can be met

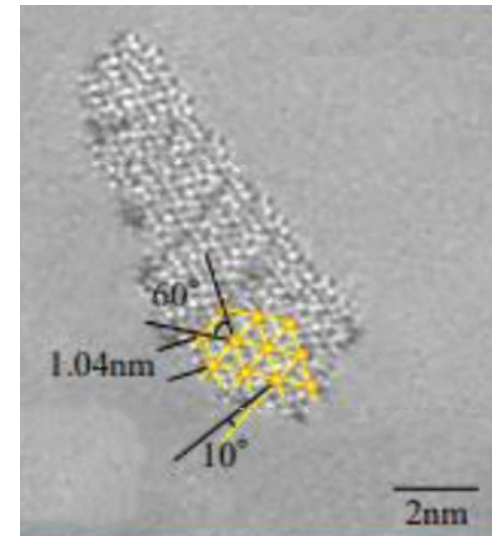
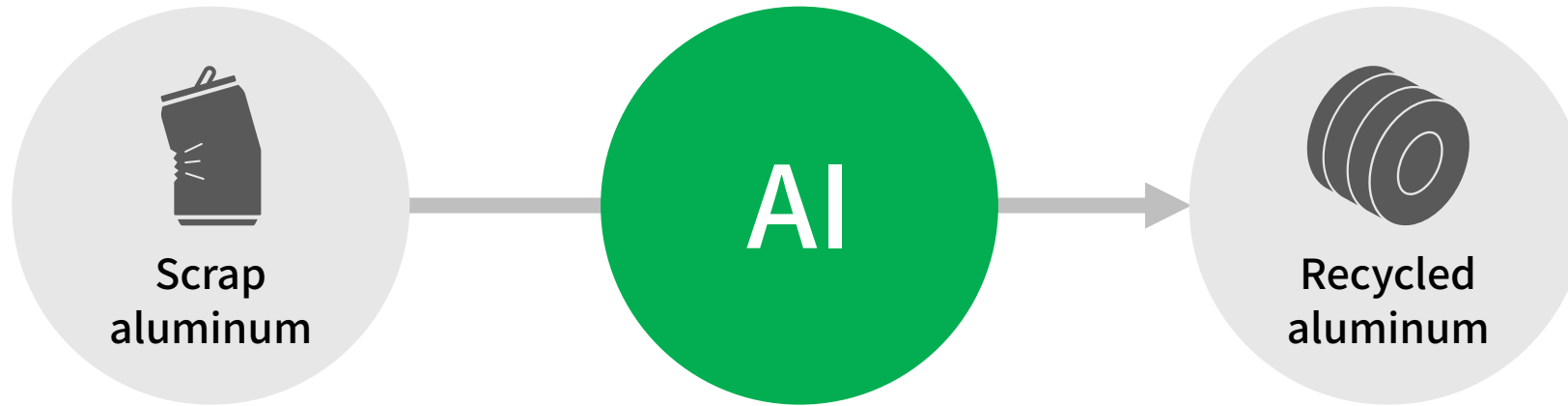


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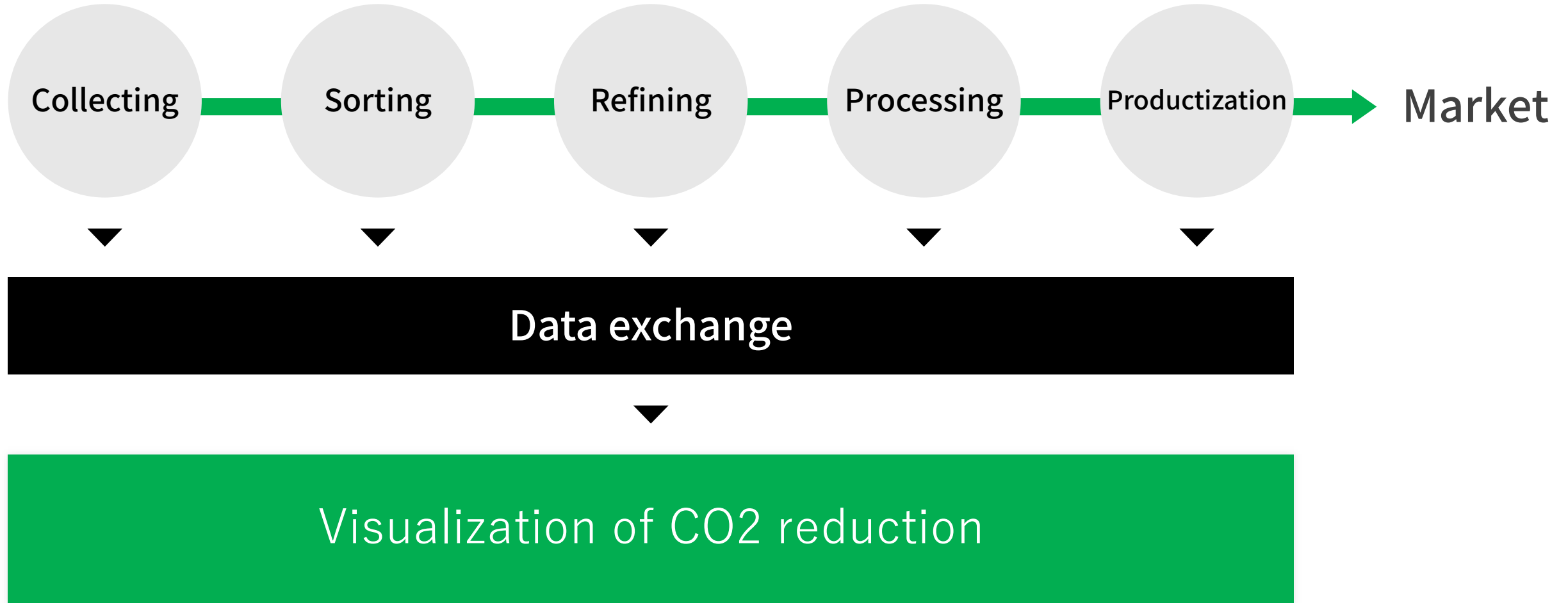
*STEM : Scanning Transmission Electron Microscope

Using AI to optimize the aluminum refining process



Compared to the current process,
CO2 emissions are reduced by 97%

Using blockchain for secure B2B data transaction



Expansion of a circular economy

