



From Waste to Asset: SuperBin's Scalable Circular Economy Model for Cities

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CIRCULAR TRANSITION AWARD

Highly Commended

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A large, sprawling pile of garbage, including plastic bags, bottles, and other debris, dominates the foreground and middle ground. Numerous birds, likely scavengers, are perched on the trash and flying in the hazy, overcast sky above. The scene is somber and highlights environmental issues.

Where do we live now?

Linear economy vs. Circular economy

LINEAR ECONOMY



RECYCLING ECONOMY



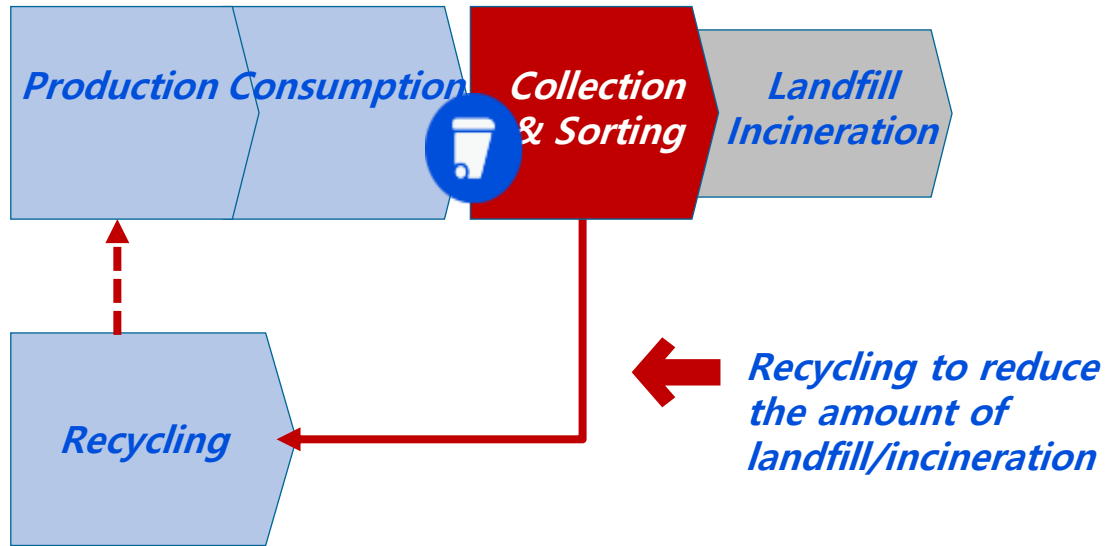
CIRCULAR ECONOMY



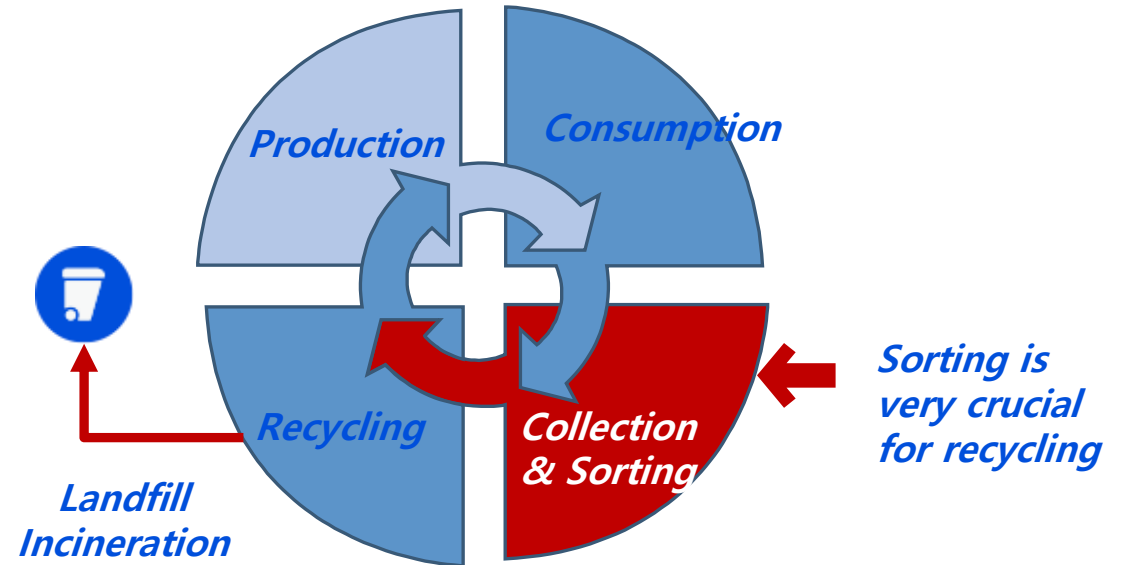
CC by Circular Flinders

Linear economy vs. Circular economy

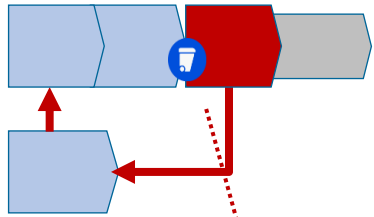
Linear economy in current urban areas



Circularity in urban areas ✓

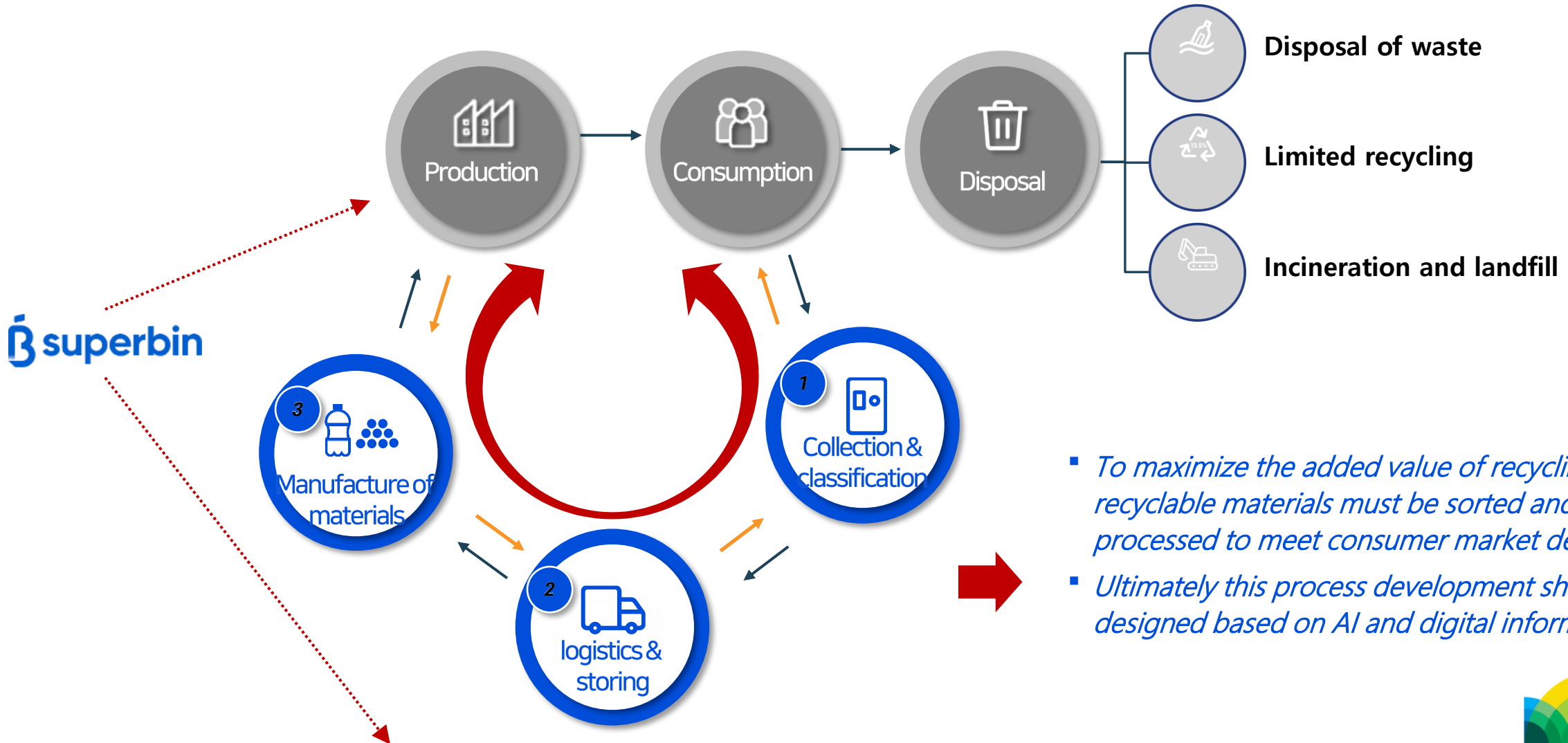


Linear economy in current urban areas



SuperBin's Circular Economy Model / Overview

“Ensure that the final destination of recyclables connects strongly to the materials industry.”



- *To maximize the added value of recycling, recyclable materials must be sorted and processed to meet consumer market demands.*
- *Ultimately this process development should be designed based on AI and digital information.*

태백시 superbin

쓰레기도 돈이다.
재활용도 놀이다.

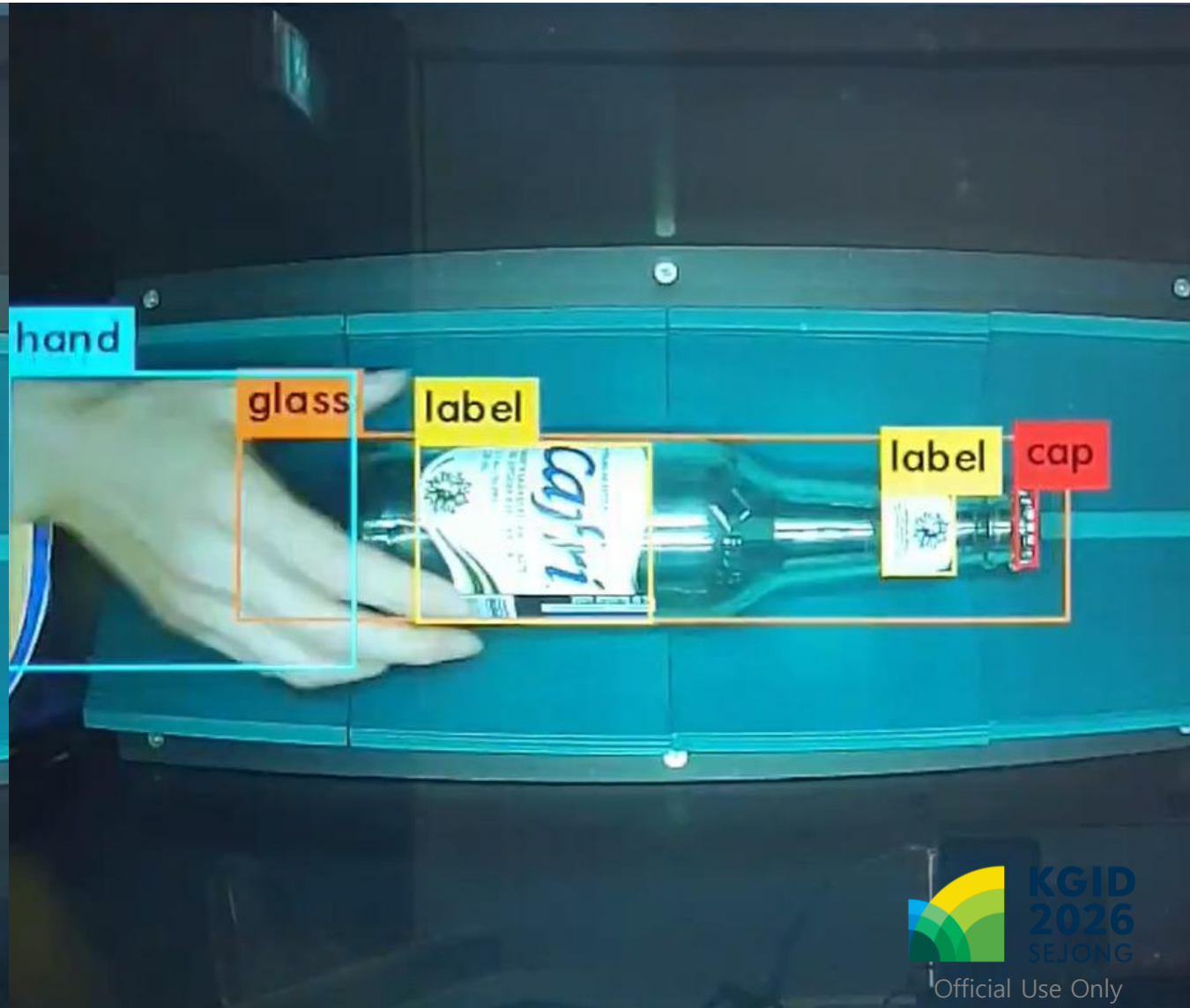
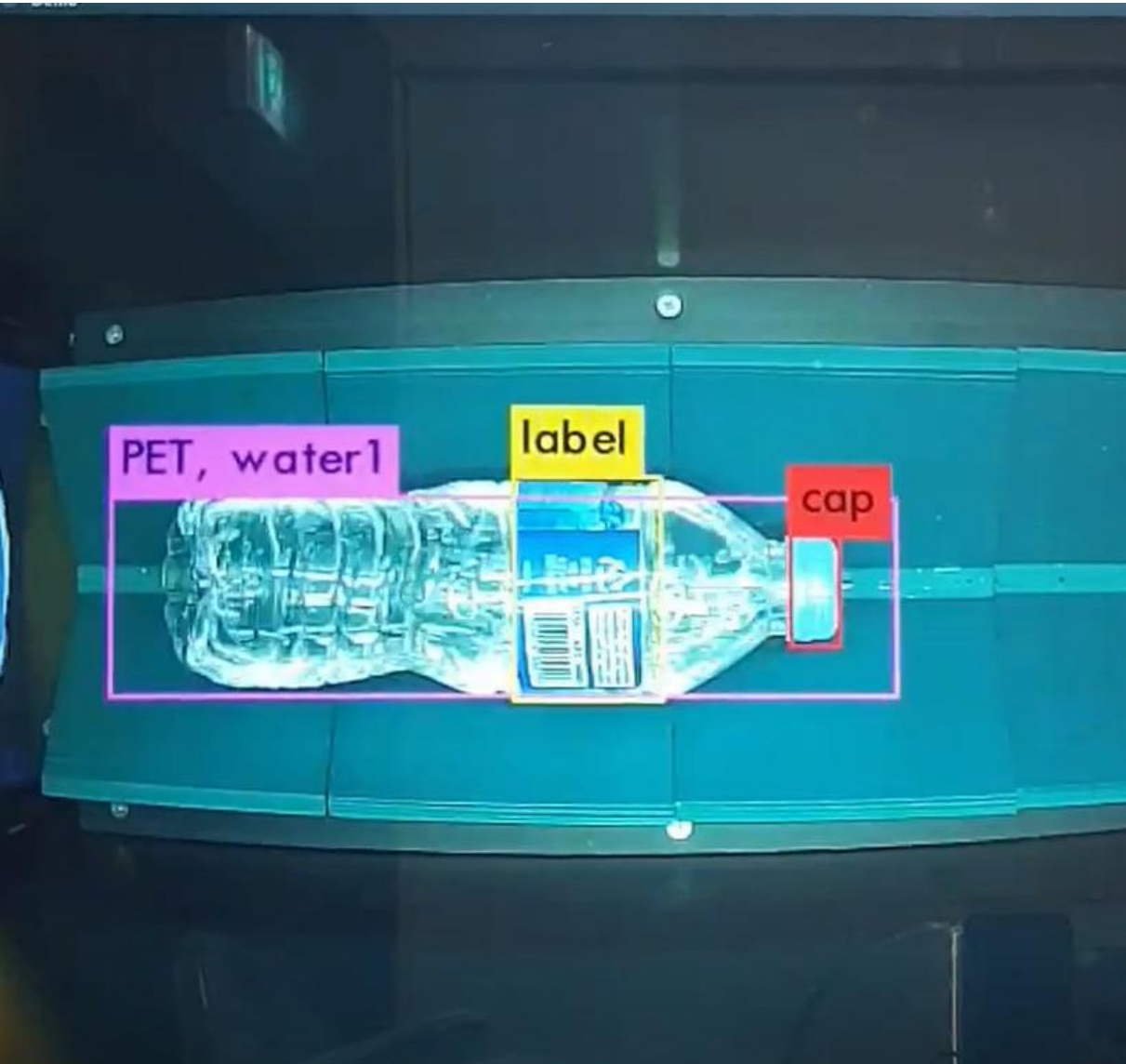


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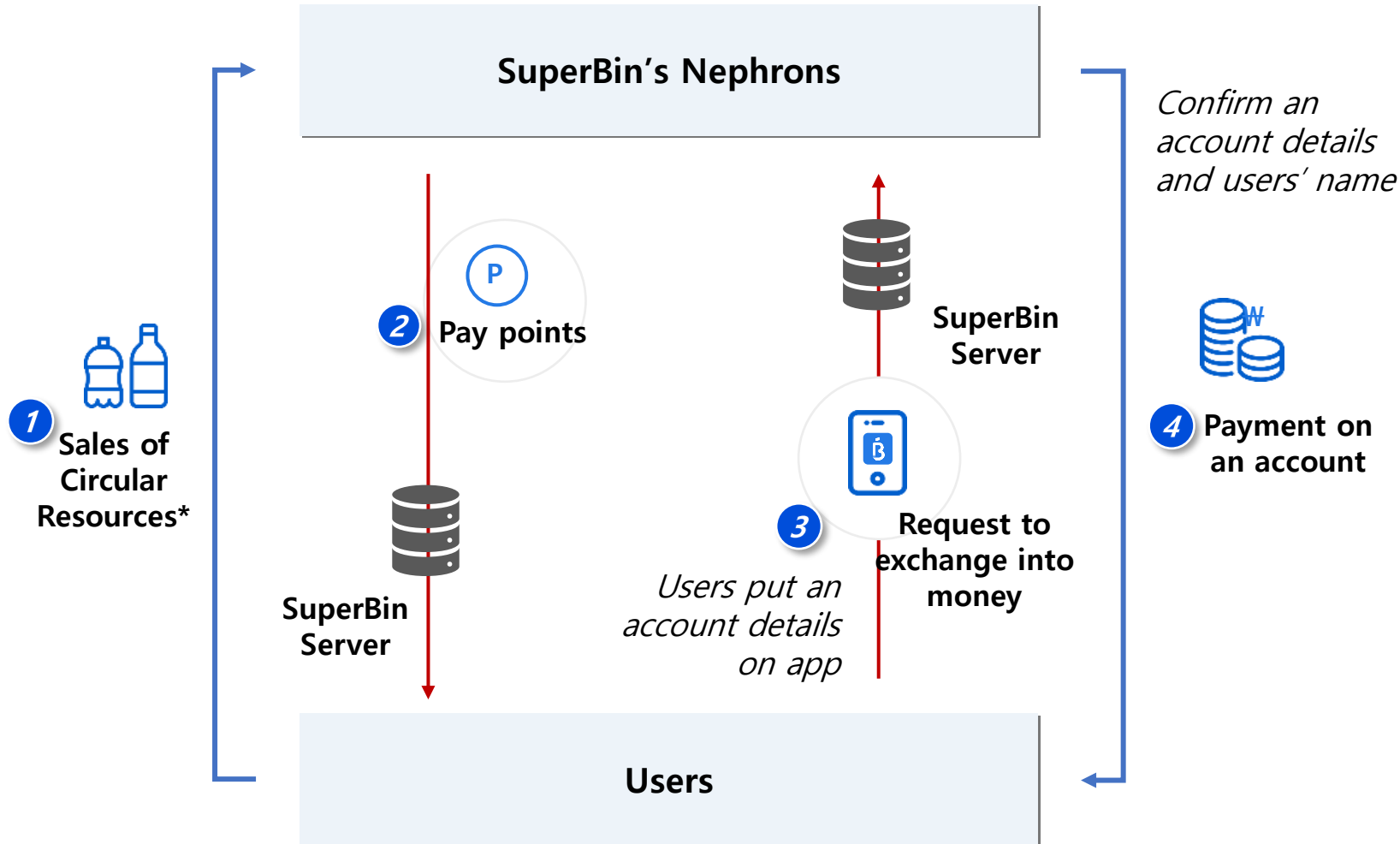
SuperBin's Circular Economy Model / Technology applied

"AI enables us to identify granular information about recyclables and elevate sorting to a new level of precision."



SuperBin's Circular Economy Model / Operation

"Introducing the world's first digital marketplace where citizens can directly sell recyclable materials."

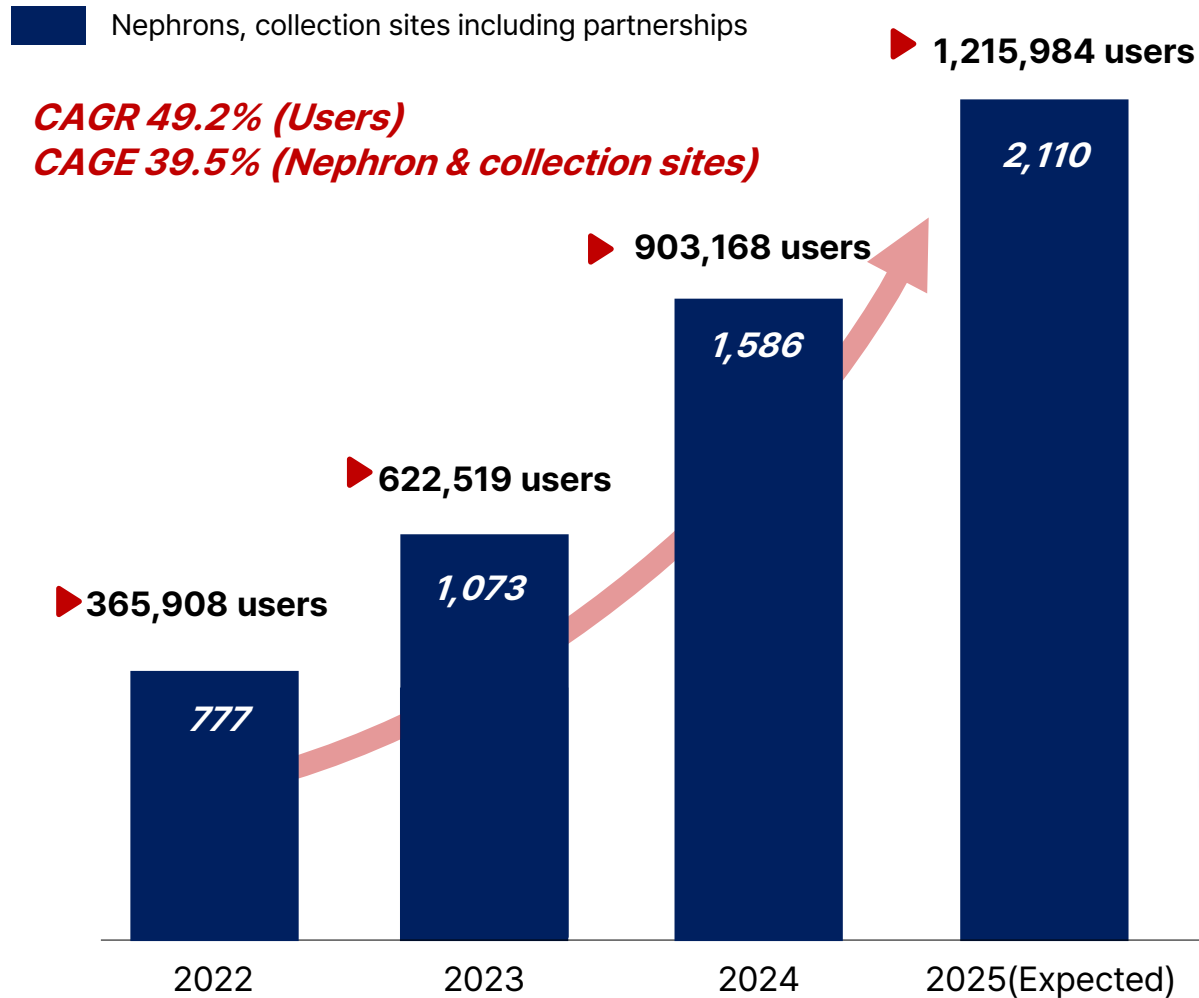


* Sales of Circular Resources : recycling resources which are collected and rewarded by Nephron or SuperBin More.

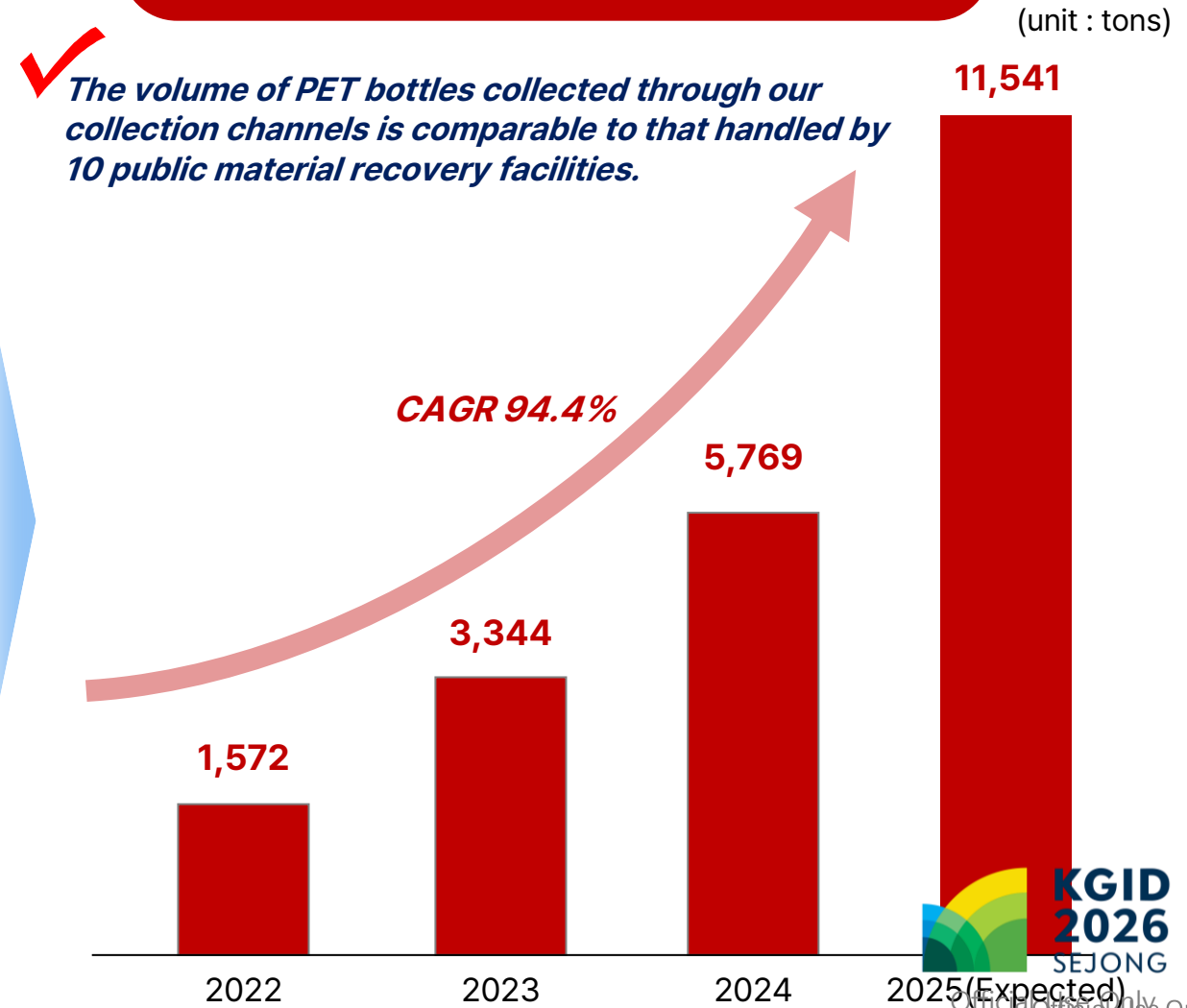
SuperBin's Circular Economy Model / Scalable growth

"Participants has grown rapidly, and as a result, doubling collected volume each year"

Growth of Collection Channels



Growth of Collection Volume



SuperBin's Circular Economy Model / Performance

“Securing world-class quality recycled raw materials and creating new opportunities across the value chain.”

Condition of SuperBin's Recyclable Material (Bale)



Condition of Bales from Public Sorting Centers





im factory

수퍼빈(주) | 아이엠팩토리



im
factory

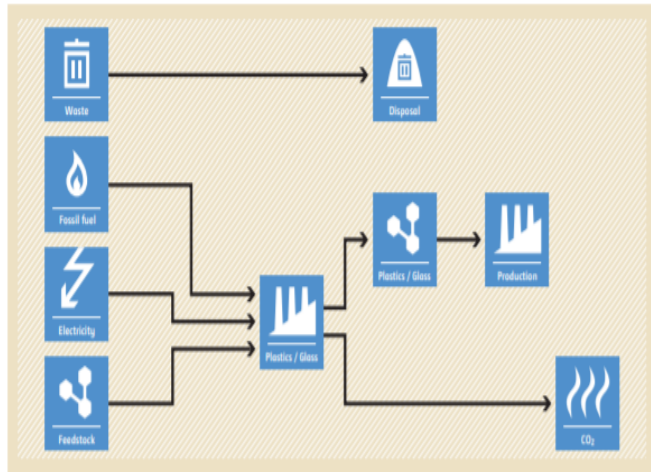


SuperBin's Circular Economy Model / Carbon emission reduction

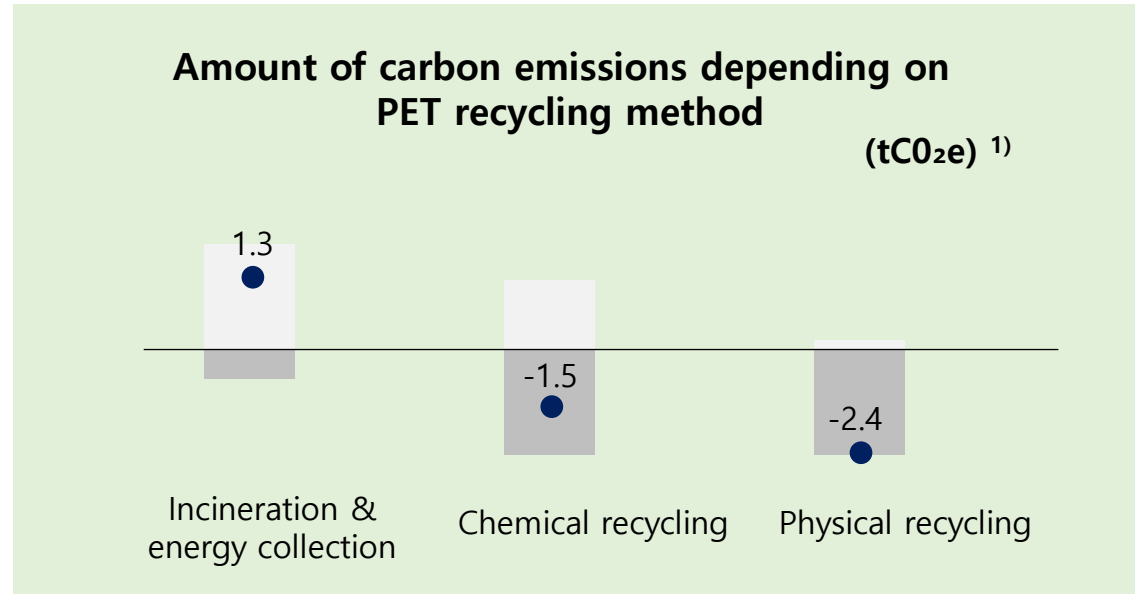
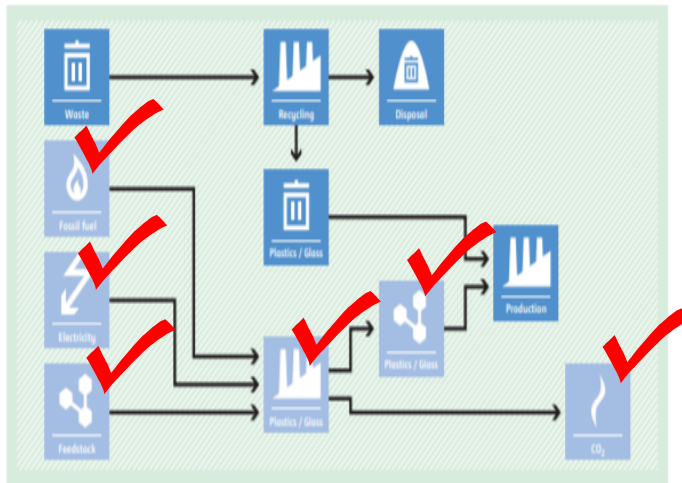
"Reduced production of virgin materials through recycled inputs, Lower natural resource extraction, Decreased waste generation"

Green House gases reduction evaluation method-AMS-III.AJ (ver.07)

Before the project
(Baseline)



After the project



- **Baseline emitted amount – Project amount = amount of GHG reduction**
- **Physical recycling which is the main pivot of the circular economy** reduces new plastics and stimulates circulation of resources, consequently, creates businesses and provides a benefit for sustainability
- For an efficient physical recycling system, the **collection system with efficiency and time & investment is necessary**, ultimately, a shift in perception from consumers and actions are required

1) tones (t) of carbon dioxide (CO₂) equivalent (e)

Source: Boston Consulting Group, A Circular-Solution-to-Plastic-Waste-July-2019 Report from Samsung Securities Co., 2021.03,

SuperBin's Circular Economy Model / Social Impacts

“For the first time globally, we integrated a cultural space into an active recycling production facility.”







SuperBin's Circular Economy Model / Symbiotic Relationship

"Our shared responsibility to enhance a symbiotic relationship between citizens and animals"











RESOURCE RECOVERY IN THE CITY



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