

Reinventing Food Waste Processing for the Modern Home

From dried by-products to complete resource circulation

AIoT Food Waste Processor

with Integrated Collection Platform

ECLE



에코드인

We provide an **AIoT food waste processor** optimized for **1-3 person households**, and operate a **closed-loop resource circulation platform** that **collects and upcycles dried by-products into animal feed..**

One-Stop Food Waste Processing, Reinvented through Product Innovation

“No Cleaning”
Food Waste 
Processing

“New”
Effortless
Collection

“Full Circulation”
By-product
Upcycling

Problem

1-2 Person Households Who Find Household chores challenging

Percentage of People Who Find Food Waste Disposal Inconvenient

85%

Household Survey on Food Waste Disposal Inconvenience

#1 : Odor/Hygiene Issues in Storage

#2 : Effort Required for Disposal

Deep interviews with 30 individuals and a survey of 201 respondents living in 1-3 person households.



“ Due to the rise of food delivery, food waste generated by 1-3 person households has increased by *3x.

* 배달음식 음식물배출 조사, 자원순환사회연대, 2022

Dissatisfaction with Existing Food Waste Processors

Dissatisfaction Level of Existing Device

64%

Pain Points of Existing Food Waste Processors

#1 : Cleaning and Maintenance

#2 : Odor Before & After Processing

#3 : High Device Cost

Survey Results from Ongoing Pilot Service with Current Food Waste Processor Users



“ Traditional food waste processors require too much effort and are inconvenient to use..

Increasing Municipal Disposal Costs ↑

Food Waste Recycling Rate

🇺🇸 40% ↓

🇰🇷 ** 50% ↓

Food Waste Processing Cost per Ton

Incineration 73M KRW



Landfill 23M KRW On the Rise

Source: Korea Environment Corporation (KECO) Website & Academic Papers

*Actual Recycling Rate

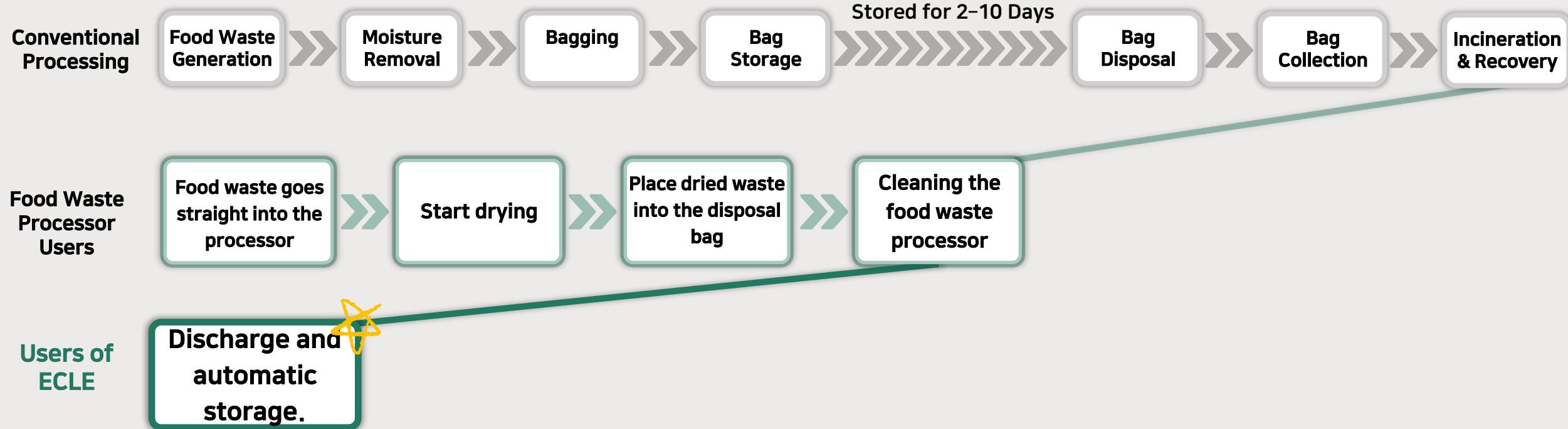


“ Most of the processing cost comes from moisture handling, drying, and secondary processing.

Solution

A no-clean food waste processor that enables convenient in-home disposal.

Replacing 8 Food Waste Processing steps with a Single Action.



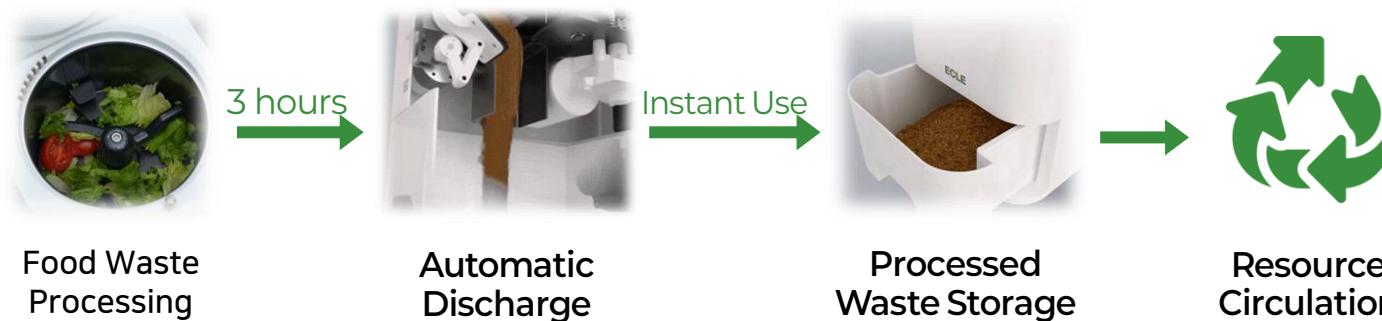
“ECLE” – The world’s first food waste processor with automatic storage

A user-friendly food waste processor brand pursuing resource recycling.

Conventional Disposers



ECLE Food Waste Processor



AIoT Food Waste Processor

Convenience with AIoT. Resource recycling through by-product collection.

H/W Overview



Storage container enables disposal without cleaning

Applied the world's first storage-to-transfer mechanism

- ✓ Heat-drying reduces waste volume by more than 90%.
- ✓ Only one cleaning per month for a 3-person household (1/30 of the conventional frequency)
- ✓ Mixed-flow exhaust enables deodorization and low power use *

Effective performance powered by AI and IoT.

- ✓ Automatically detects moisture, weight, and user patterns
- ✓ IoT control, collection service integration, and carbon point rewards

* High efficiency with 220-230W low power usage

AIoT Food Waste Processor

Convenience with AIoT. Resource recycling through by-product collection.

H/W Overview



Proven market demand with 100M KRW in pre-launch sales

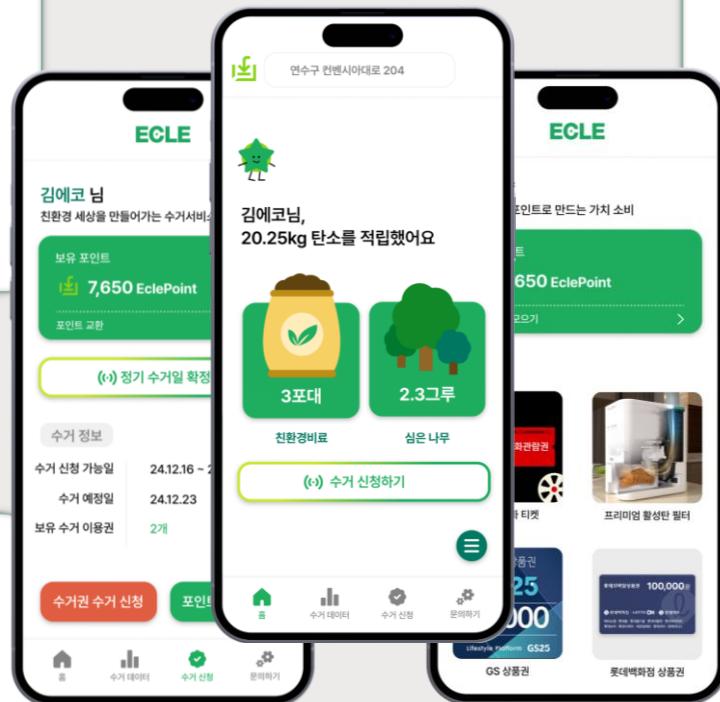
- ✓ Achieved 100M * KRW in pre-launch sales and continued post-launch performance
- ✓ Bulk purchase inquiries from public institutions, including Jirisan National Park
- ✓ Partnership proposals received from companies such as Pulmuone and Cheongho Nais

Product and platform IP protected through patent filings

- ✓ Patent filed for dual vortex exhaust technology and storage-container transfer technology
- ✓ Patent filed for a hardware-based waste collection–resource recycling–revenue service model

Device control enabled through IoT.

- ✓ Remote operation and emergency stop control.
- ✓ Real-time device error monitoring.



By-product Collection Service

- ✓ Monthly collection service for dried food waste by-products.
- ✓ Earn points through by-product collection service.

ECLE
By-Product Collection Platform

Provides carbon emission and food waste data.

- ✓ AI-based analysis of food waste output.
- ✓ Access carbon emission report.

Points and Reward System

- ✓ Earn points by using the device and collection service.
- ✓ Local competition and municipal campaign-based rewards.

How to Use the Collection Service: 3 Steps

One-Stop disposal made Easy with IoT technology and device automation



1. Receive disposal notification via the app

2. Place the dried waste in the designated box

3. Leave it at your door for pickup

Differentiation

We differentiate ourselves from existing market players across multiple dimensions.

	ECLE	smartcara	reenicle	shelpur
Automatic Storage Mechanism	O	X	X	X
* User Handling Time (Including Cleaning Time)	Within a minute	5~10 minutes	5~10 minutes	5~10minutes
Cleaning Requirement	Not required	required	required	required
Low Power Consumption / Short Operating Time	About 1/5 of competitors' time	700W/5+ hours	500W/ 12+ hours	High
Integrated IoT & AI Capabilities	O	X	X	X
Pricing	Under 400,000 KRW	Over 500,000 KRW	Over 700,000 KRW	Low-cost Chinese models

"A brand that replaces conventional food waste processors with a completely new method and technology."

Revenue Model

We build a scalable business model that enables **Sustainable Revenue Growth**.

Device Sales & Subscription

Per device **400,000 KRW**

Monthly fee
(with subscription) **16,900 KRW**



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※ Extended Revenue Streams via Platform

By-product Upcycling

Per household collected

 **40,000 * 원**

Large-Scale Processor Subscription

Monthly per device

 **250,000 원**

Data Licensing & Public Sector Campaign Contracts

-  **Household-level food waste data provision**
-  **Campaign contracts using collection network**

* 2kg of feed can be produced from 3kg of dried waste via BSF (Black Soldier Fly) cultivation; 2.5kg of feed sells for ~40,000 KRW.

Market Overview

Domestic adoption below 10%, global market entering growth phase driven by regulation

TAM | Global food waste management market KRW 85 Trillion

SAM | Domestic 22M households, KRW 3T annually

SOM | 13M single & dual households, KRW 1.95T annually

LAM | High-intent households segment, KRW 311B annually

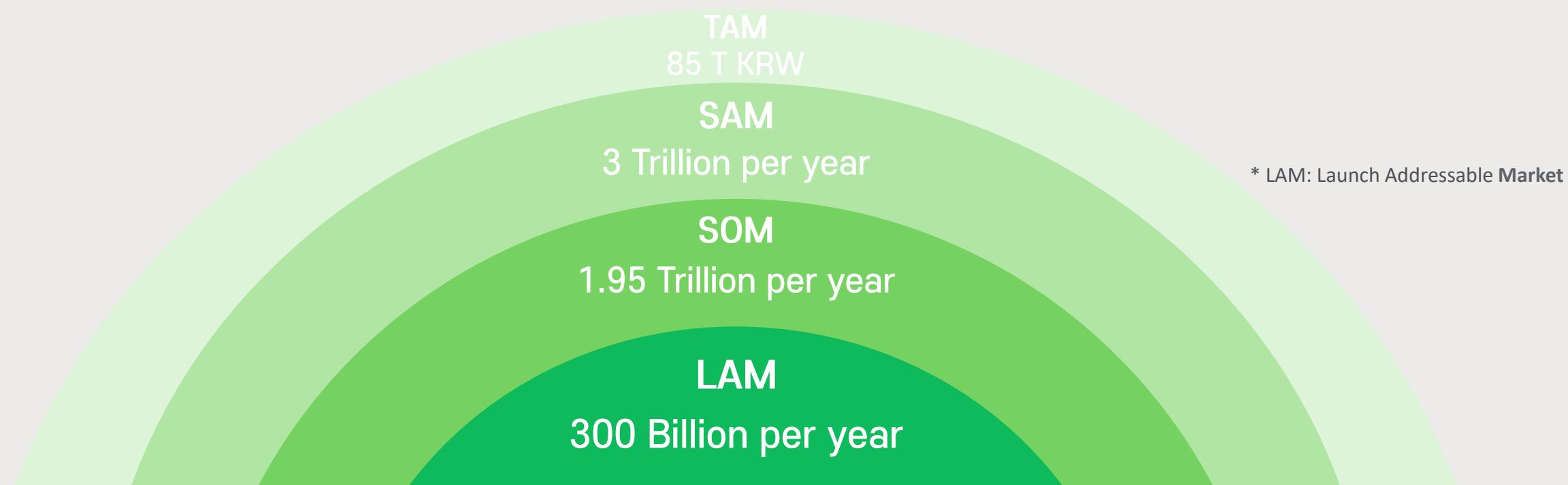
Global food waste processor market expected to reach KRW 85T by 2028 (BCC Research, 2019)

LAM penetration rate estimated at 25% based on internal research on high-intent households

12.508M single & dual-person households in 2020

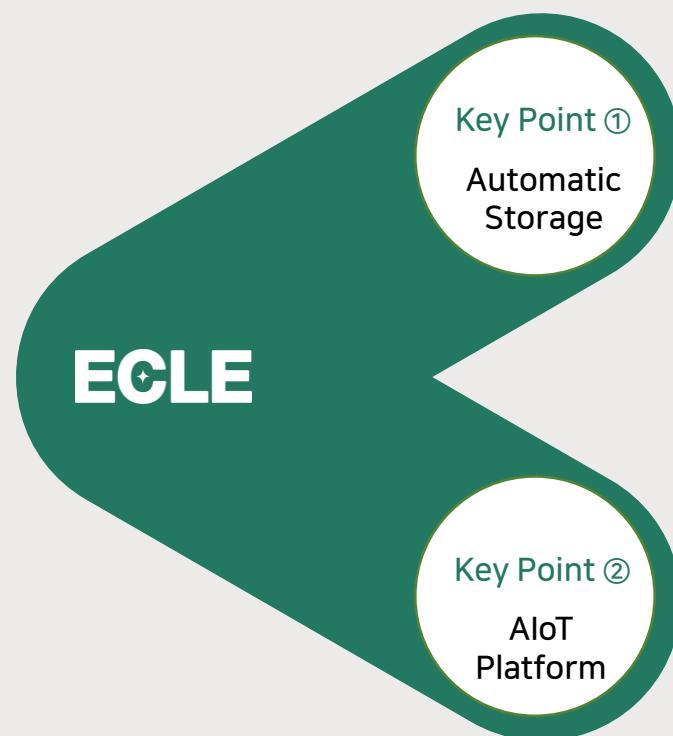
Total households projected to reach 22M by 2025 (KOSTAT Projection)

63.8% of households live in multi-unit housing (2022 Population & Housing Census, KOSTAT)



Key Messaging: Automatic Storage Function, AIoT Platform Capability

A smart food waste processor that handles everything with no cleaning required



Messaging Themes

A processor that handles everything automatically

Low-power processing completed in 3 hours

Smarter processing powered by AI + IoT

No-clean, hassle-free kitchen experience

A solution that protects both the environment and your kitchen

Marketing Channel



SNS Marketing



Offline Marketing



Multi-unit Housing Targeting



Community Word-of-Mouth

Go-to-Market Strategy

We leverage our strength in digital marketing to maximize sales efficiency.

Online



Direct Store & Online Marketplaces

- Optimized D2C store design to increase conversion rates
- Listed on 11 major marketplaces including Coupang



Home Shopping & Live Commerce

- Sales via SME distribution center home shopping channels
- Expandable airtime based on demand



Performance & Viral Marketing

- CTR 6%, CAC < KRW 10,000 via Meta & Daangn performance ads
- Community-based viral activation (mom cafes, blogs, forums)

Offline

Retail Vendor Distribution

- Entry into major electronics retailers through vendors



Local Offline Marketing

- High-frequency exposure via transit & outdoor ads
- **On-site booth events** in apartment complexes for local engagement



Go-to-Market Strategy

Customer-Targeted Exposure Using Platform Activation

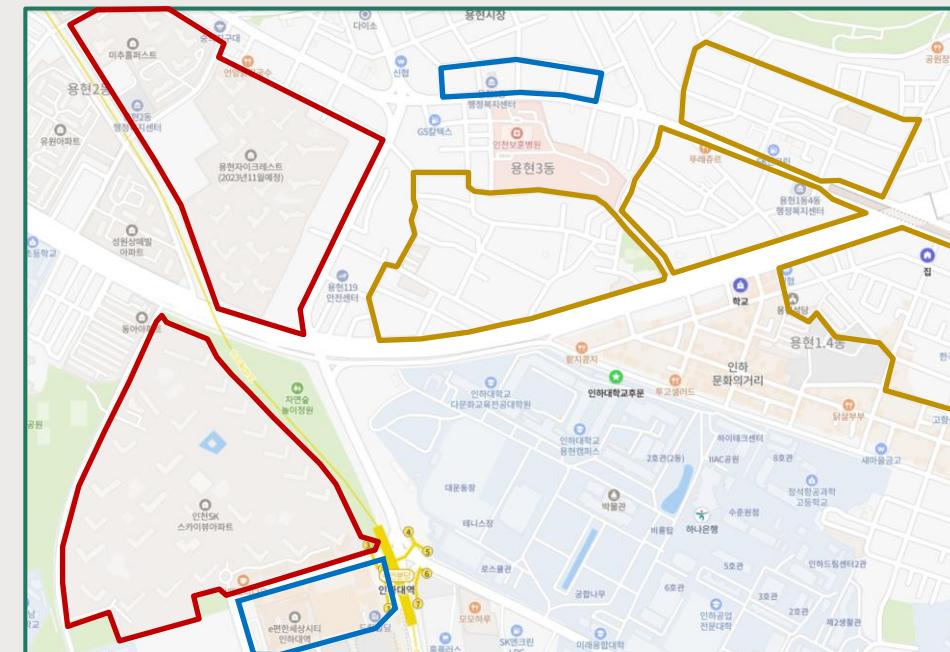
Expose to target customers through customer participation promotions and offline advertising campaigns in densely populated urban areas.

✓ Acquire users through a referral program

- Provide platform benefits to both new and referring users to drive viral growth
- Maintain CAC at KRW 10,000 via consumable and gift-card incentives
- Offer benefits without limits during the initial promotion phase
- **Enables lower acquisition cost when considering variable cost structure**



✓ Target areas with dense officetel, apartment, and housing clusters for efficient, low-cost marketing



Prioritize 1km-radius clusters of **officetels**, **apartments**, and **studio housing** for efficient collection and marketing

Why Dried Food Waste?

“ With a 90% reduction in moisture, dried food waste can be processed and distributed at a significantly lower cost ”



출처: mill

- ✓ **Dried food waste still holds high value**
 - » Through dehydration, food waste is transformed into fertilizer, feed, and eco-friendly additives, creating a sustainable resource cycle. Furthermore, by removing moisture, we drastically reduce processing and transportation costs, making waste management more efficient and eco-conscious.

Food Waste Processing Flow

Dried food waste emitted via app



Collected at lower logistics cost



Recycled into fertilizers, feed, and additives

Limitless Scalability with Powerful Hardware Infrastructure



Building a new value-chain ecosystem that transforms 300g of daily food waste into a circular resource

Dried Residue Collection Service

Regular pick-up service for dried food waste byproducts.
(Operates Recycling Mall offering upcycled fertilizer and vegetable products)

B2B Large-Scale Food Waste Processor

Supplies AI-based processors capable of handling up to 100 servings simultaneously

Byproduct Recycling (Animal Feed)

Converts collected residues into feed for insects (BSF) and premium pet food ingredients
Generates added value through eco-friendly resource circulation

Food Waste Processor for 1-3 Person Households

B2B Weight-Based Collection Service

Offers flexible collection solutions for restaurants and large kitchens, reducing waste management costs through a weight-based pricing model

Building an Urban Food Waste Recycling Platform

From hardware innovation to platform expansion — and ultimately, toward a sustainable SaaS ecosystem

	2025	2026	2027
추진 계획	<p>Pre-launch sales and early distribution Achieve approx. KRW 1.5B in revenue (200 units) Supply units to national parks and campgrounds</p> <p>Full-scale launch and retail expansion Online marketing and direct sales through our own website</p> <p>App feature upgrade & pilot collection platform Launch limited collection platform in select Incheon regions</p>	<p>Launch of new AIoT food waste processor Target: 10,000 units sold, including apartment complexes and shared housing</p> <p>Production of animal feed using collected by-products OEM manufacturing through MOU with local livestock partners</p> <p>Market entry in China, Japan, and North America Subscription model pilot & collection platform expansion</p>	<p>Launch of large-capacity processors Target B2B clients such as schools, cafeterias, and apartment complexes 300+ units deployed nationwide</p> <p>B2B-integrated collection service Launch a bundled collection service combining multiple units for cost efficiency</p> <p>Launch of North America collection platform</p>
Sales target	2,000 units / KRW 8.4B in total revenue	15,000 units / KRW 8.5B in total revenue	Small models: 60,000 units / Large models: 300 units / KRW 30B in revenue

Financial Projection (Profit & Loss Statement)

Category	2023	2024	2025	2026	2027	2028
Product Sales Volume	Not launched	Not launched	2,000units	15,000 units	Small: 60,000 units / Large: 300 units	Small: 120,000 units / Large: 5,000 units
Revenue	62	143	850 (Pre-orders approx. KRW 200M)	8,400	29,200	72,000
COGS (Including Development)	13	82	250	2,500	10,000	25,000
Marketing & SG&A	49	53	500	4,000	15,000	25,000
Operating Profit	0.2	7	100	1,900	4,200	22,000
Net Profit	6	3	30	500	1,000	7,000

Follow-up Investment Plan

Additional SEED & Series A funding

Global Expansion→ Series B 유치
North America Market Expansion→ Series C 유치

Investment & Fund Allocation

Product Manufacturing & Production

Food Waste Processor Production

Material and manufacturing costs for 1,000 units **KRW 100 million**

New Product

Development and launch of the 2026 AIoT upgraded model **KRW 50 million**

Online / Offline Marketing

Online Marketing

Digital advertising on Meta, Google, SEO campaigns, etc. **KRW 100 million**

Offline Marketing

Bus and outdoor advertisement Public housing campaign promotions **KRW 100 million**





**From egg to egg —
the start of a truly circular experience**



Function

ECLE H/W



Auto Storage & Discharge System



Multi-Sensor Architecture



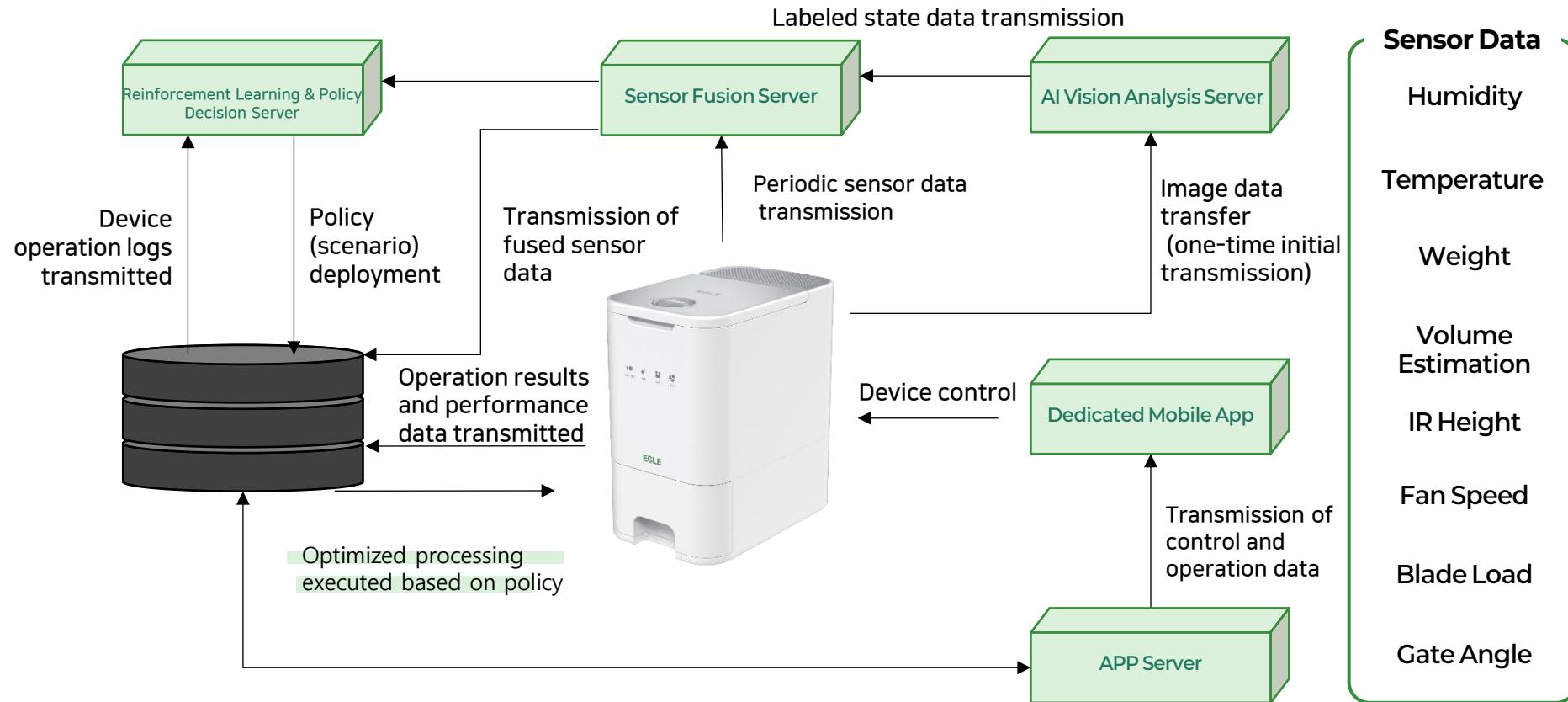
Dual Exhaust System



Detachable Blade Mechanism



Integrated Concept Diagram

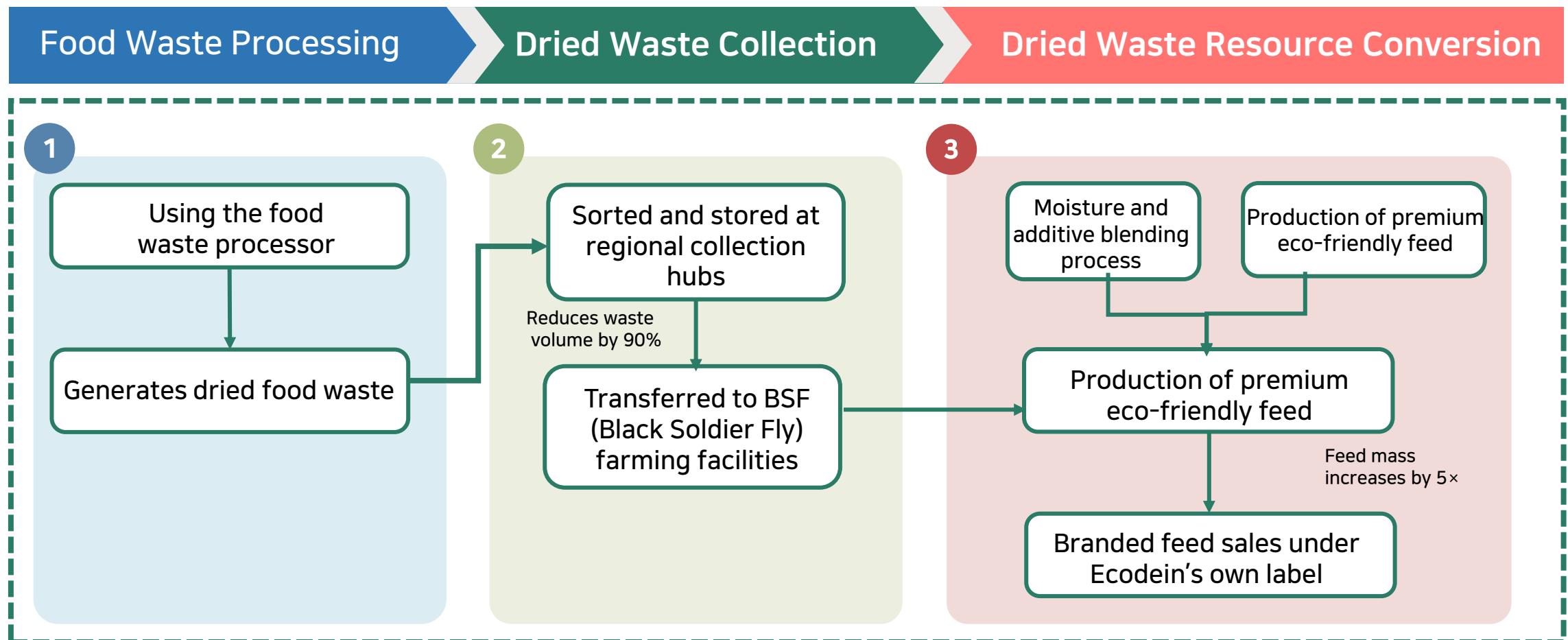


Starting from the B2C market, we are diversifying our revenue streams and building an efficient collection infrastructure.

"Expanding an infrastructure where over 150 collection events occur within a 1 km radius"



A circular resource business that delivers scalable profit for companies and convenience with economic benefits for customers



We are building Ecodein's own food waste processing ecosystem

1.



2.



3.



Establish infrastructure for feed and fertilizer production



Develop fertilizer R&D through household collection and generate revenue via product sales

Expand B2B operations through large-scale food waste processors and service deployment.



Secure a large customer base for monetizable collection services

Operate collection services for apartment complexes and corporate clients.



Achieve operational independence and maximize revenue through economies of scale

APPENDIX I Why Insect-Based Feed?

Feed made from Black Soldier Fly (BSF) larvae is
classified as a premium protein source.
In November 2024, BSF farming was officially
approved in Korea.



Source: BBC and various news agencies

✓ Have you heard of BSF — the insect that feeds on food waste?

» BSF-based pet feed helps reduce tear stains and is known as a hypoallergenic, high-quality ingredient. We aim to collect food waste and use it to raise BSF larvae for sustainable feed production

Domestic BSF Market Flow

Previously reliant on imports from Europe

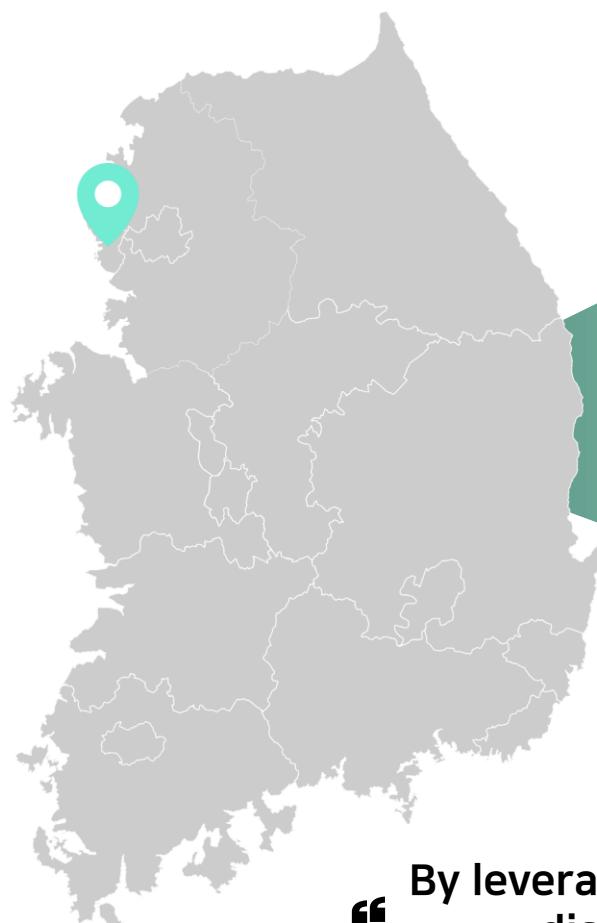


BSF farming approved by Korea's Ministry of Food & Drug Safety (Nov 2024)



Local farms begin integrating BSF into food waste management systems.

We leverage existing parcel delivery infrastructure to reduce initial collection costs and remove entry barriers to the market.



Incheon

1. Direct contracts with courier drivers for pickup and delivery partners
 - » KRW 2,000-2,400 per pickup
2. Launching direct collection service in Yeonsu District (mid-January)
 - » Service rollout after securing 2,000 households

전국

1. Utilize existing parcel delivery networks
 - » KRW 2,500-2,900 per pickup

“ By leveraging parcel logistics networks, we minimize upfront distribution costs and mitigate operational risks ”

Food waste is fed to BSF larvae and converted into nutrient-rich feed.

Food Waste to BSF Feed Conversion Flow

1.



Dried food waste is fed to BSF
(Black Soldier Fly) larvae
(Approx. 5 kg of pre-dried waste, 75% drying efficiency)

2.



BSF larvae produce approx. 2.5 kg of
feed from the processed waste.
(Feed conversion ratio: 90%)

3.



Feed sales generate around KRW 20,000
(approx. USD 15)

“ Capturing just 0.1% of Korea’s 12.5 million single- and two-person households could generate KRW 360 million (USD 270K) in monthly sales. ”

1) Further profit growth is expected through large-scale BSF collection and B2B model expansion.

1) A sustainable profit model achieving break-even with 100 collection events within a 1 km radius, according to a 2022 survey of 96 companies conducted by the Korea Organic Fertilizer Industry Cooperative (July 7-20).

We build a data-driven revenue model through collaboration with local governments.

Municipal Food Waste Processing Contracts

Local farms request food waste processing



Additional revenue generated through processing services

Municipal Collection Service Projects

- 1. Partner with municipalities running food waste processor subsidy programs to provide collection services (cost reimbursement model).**

Pilot projects with Incheon Urban Corporation enhanced credibility and enabled early adoption, providing food waste emission data via IoT and AI.
- 2. Expand collection services to local residents using municipal food waste processors.**

APPENDIX I User Scenario (1 Month Cycle)

