GREEN WHALE Global®

The Practical Green Solution Provider

Green Whale Global Co., Ltd. 2025.

Problems - The Two Sides of Plastics

Benefits to Humanity

- Provides unparalleled convenience to people
- Plays an essential role in healthcare, education, and daily life
- Continuous improvement in performance and usability

Serious Environmental Threats

- Marine ecosystem destruction: millions of tons of plastic in the ocean
- Microplastic pollution: impacts plants, animals, and human health
- Accelerates climate change: plastics are a potent greenhouse gas source
- A global challenge: cannot be solved with local measures

Green Whale Global's Commitment

> ***"We are here to solve this problem."***
>
> **GWG recognizes the urgency of the plastic crisis and presents innovative, sustainable and practical solutions.**

Market Opportunity-Growth of Eco-Friendly Bioplastics

ESG & Regulatory Pressure

ESG and Regulatory Pressure

By 2025, ESG will no longer be optional but a core requirement for business operations.

EU Impact

EU guidelines and global standards are reshaping how companies disclose sustainability efforts.

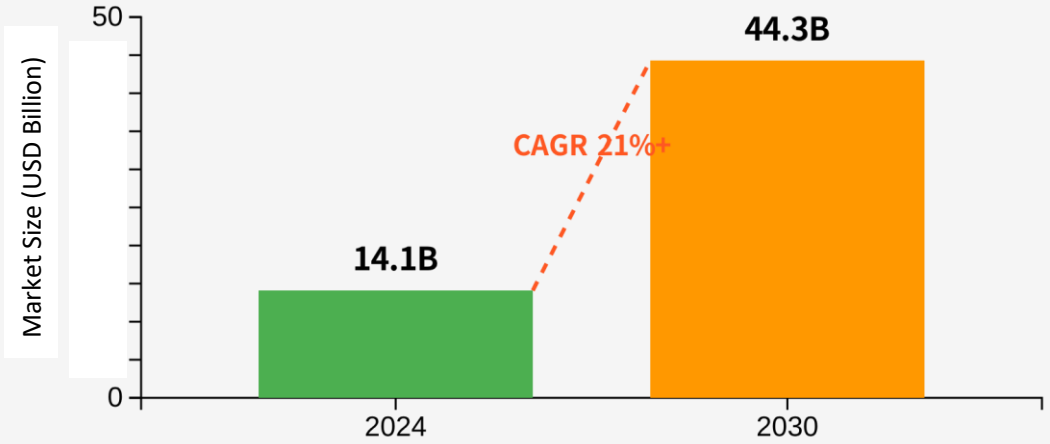
Expanded Reporting

Since 2023, ESG reporting is mandatory even for SMEs and non-listed firms under CSRD.

Sustainable Packaging

From 2025, EU requires packaging to be reusable, recyclable, or designed for safe disposal.

Eco-Friendly Bioplastics Market Growth



Global Market Growth

Global market expected to grow from $14.1B in 2024 to $44.3B by 2030.

High CAGR

CAGR projected at over 21%.

Regional Trends

- Asia-Pacific : China, Japan, India, Korea are investing heavily in bioplastic infrastructure and R&D.
- Europe : Leading in regulations, especially single-use plastic bans and circular economy initiatives.
- USA : Multinational companies are integrating bioplastics into their product lines to achieve ESG goals.

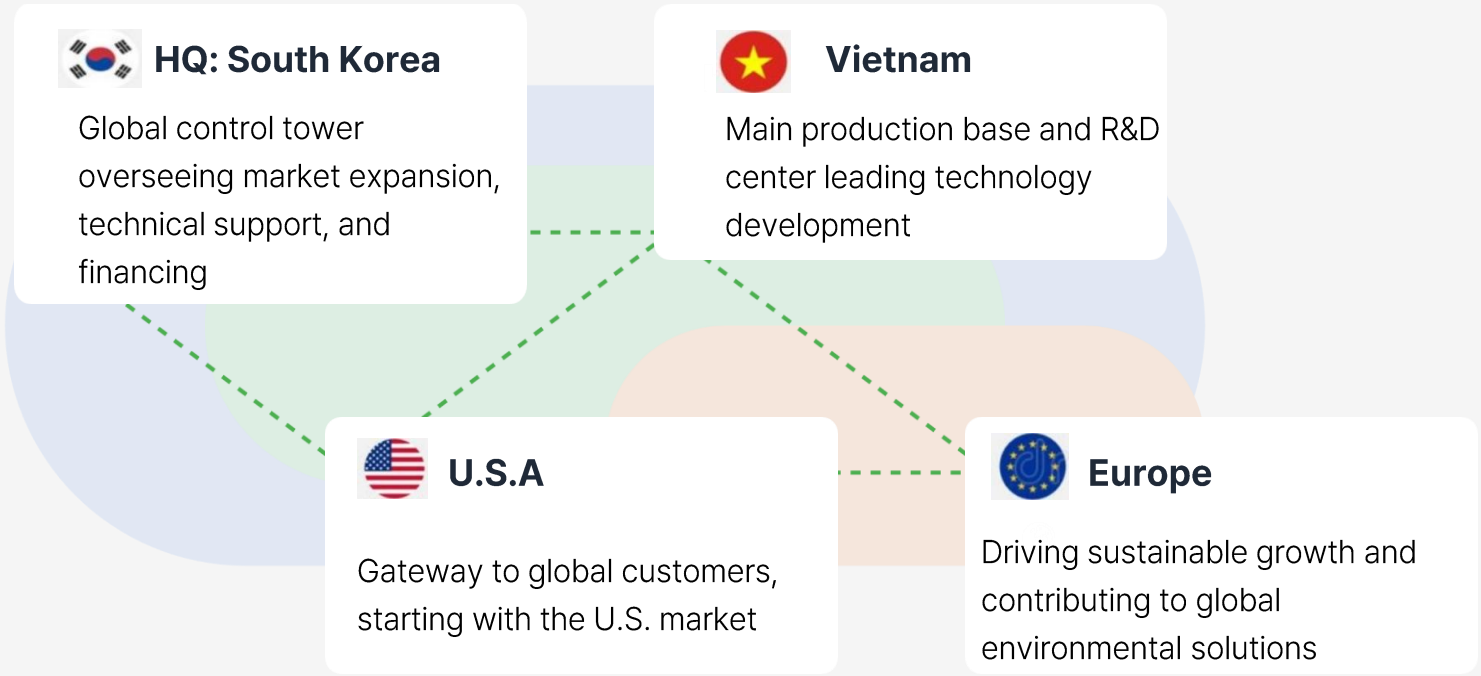
Company Overview –An Innovative with Global Supply Chain

GREENWHALE global®

“ Technology proven in the real world, Solution chosen by the market ”

By analyzing industry-specific regulations worldwide, we offer sustainable materials that fit existing production lines and win market adoption through cost-efficiency

Company Name	Green Whale Global Co., Ltd.
Established:	2019. 3. 18.
CEO	Yoon Tae Kyun
Employees	Total: 25 **(Korea:** 13 / **Vietnam:** 10 / U.S.A: 1 / Europe: 1 **)**
Business Locations	



GWG’s Global Strategy: “Beyond being just a startup, we have built a global supply chain that delivers innovative eco-friendly solutions to markets worldwide. These strategic regional hubs enable Ecoist to achieve sustainable growth and play a key role in addressing global environmental challenges.”

Technology Overview & Differentiation

Selected for Carbon Neutral Commercialization Program (2025, KOSME)
Development of high-dispersibility thermoplastic starch (TPS)-based masterbatch manufacturing technology and its application to low-carbon, eco-friendly plastic solutions

Technology Overview (Core Technical Description)

1. A starch masterbatch is manufactured by **modifying the hydrophilic structure of starch** into a **hydrophobic thermoplastic starch (TPS)** through proprietary conversion technology.

2. The resulting **universal TPS masterbatch** offers **high compatibility** with a wide range of resins, including **biodegradable plastics, olefins**, and **recycled polymers**.

- **Starch Modification Technology** → Converts hydrophilic starch to improve bonding with hydrophobic plastics
- **Cross-Linking Technology** → Bridges physical property gaps between starch and recycled plastics
- **Enhanced Mechanical Strength & Heat Resistance**→ Improves durability and physical properties compared to conventional TPS
- **Compatibility with Existing Plastic Processing**→ Can be applied to current production lines without additional processes

Competitive Edge

Limitations of Competitors

- Mostly rely on physical compounding →Results in poor dispersion, weakened material properties, and simple biomass mixing (Max.15%)
- Biodegradability-focused technologies→ Subject to the inherent mechanical limitations of biomass-based materials
- Primarily serve single-use applications and low value-added industries

- **Structural bonding enabled through chemical cross-linking**
  ※ Formation of chemical chains centered on amylopectin
- **High-strength performance achieved through a combination of modified starch and additives**
- **100% compatibility with existing plastic processing lines (Zero CAPEX required for adoption)**

Demand-driven technology based on market needs and client development requests

Carbon emission reduction effect (LCI evaluation and data in progress)

Core Biomass

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What is Cassava?

- Cassava is a tuber-based root crop grown along the tropical coffee belt across continents.
- Drought-resistant and sustainable, it is widely available and cost-effective globally.
- It is a dietary staple in South America and Africa due to its abundance and low cost.
- Cassava is the main ingredient in tapioca, used in bubble tea (boba) and desserts in Southeast Asia, China, and the U.S.
- In Korea, it is commonly used to produce bioethanol and soju alcohol base.

What are Advantages?

ECO Cassava is the most resource-efficient crop in terms of water, land, and energy use per unit of yield.

PRICE Its supply exceeds demand, making it easily accessible and extremely affordable worldwide.

*Cassava: ~$0.19-$0.43/kg Potato: ~$0.23-$0.42/kg Corn: ~$0.20-$0.21/kg

TAILORED Compared to other crops, cassava has a higher amylopectin content in its starch, making it well-suited for bioplastic production and ideal for customized processing.

Our Practical Solution & Brand- Ecoist® & Halastic™

Ecoist® Portfolio

Eco-friendly bio-based resin products compatible with existing plastic processes.

Eco-friendly

"A unique company delivering eco-friendly plastics: biodegradable, recyclable, and bio-based materials for carbon reduction and neutrality."

Ecoist® Terra

Biodegradable resin blended with cassava starch, offering excellent blow moldability, surface finish, and wall stability. Drop-in compatible with existing molding lines, preventing microplastic, soil, and marine pollution.

Ecoist® Revo

Developed from post-consumer recycled plastics, reducing carbon footprint while maintaining eco-friendly performance. Supports circular economy and cost efficiency.

Ecoist® Nova

Bio-based polyethylene with the same chemical structure as petroleum plastics. Provides identical physical properties, is recyclable, and contributes to carbon neutrality.

Ecoist® Boost

Performance-enhancing TPS formula combining biodegradable and natural polymers. Improves durability, increases organic carbon content, supports carbon reduction, and chemically bonds with conventional plastics.

Halastic™ Uniqueness

The world's first bioplastic certified as Halal.

Meaning of Certification

Meets strict Halal requirements ensuring product safety, quality, and integrity beyond religion and culture.

Certification Standards

Free from pork-derived substances, alcohol-based ingredients, and other non-Halal additives; prevents cross-contamination during production.

Market Potential

Access to the rapidly growing Halal consumer market worldwide.

Corporate Solutions

Trusted material for companies entering Halal markets across food, cosmetics, pharmaceuticals, and more.

Core Technology - TPS / Compounding / Polymerization

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TPS (Thermoplastic Starch)

A bio-based plastic derived from renewable starch, biodegradable and eco-friendly.

PCR (Post-Consumer Recycled)

Recycled plastic reprocessed from collected, cleaned, and reformed consumer waste.

Bio-Polymer (Bio-based Poly)

Produced from biomass-derived ethylene through polymerization, delivering carbon-neutral performance while maintaining the physical properties of conventional PE.

Compatibility with Existing Processes

GWG's materials can be processed on existing plastic production lines (e.g., blow molding, injection molding) without equipment changes, minimizing upfront investment.

✓ Reduces the initial investment burden for manufacturers

Excellent Material Properties

Optimized blends achieve high strength, surface finish, and stability comparable to or exceeding conventional plastics.

✓ Overcomes the limitations of mechanically recycled plastics, achieving properties comparable to virgin plastics

Cost Competitiveness

While bioplastics may cost more than conventional plastics, combining TPS with PCR reduces raw material costs and energy use, enhancing competitiveness.

✓ Optimizes production costs through advanced material technology and efficient process management

Applications

This integrated technology can be applied to a wide range of eco-friendly products, including cosmetic containers, detergent bottles, and refillable packaging.

Industry Applications

GWG's materials are being adopted as innovative eco-friendly solutions across diverse industries, creating successful application cases.

With compatibility to existing processes and excellent material properties, GWG collaborates with leading companies in automotive, cosmetics, fashion, food, agriculture, electronics, and healthcare to deliver sustainable value.




Automotive
Hyundai Motor Group EV material
Eco-friendly materials applied to vehicle parts, durability and safety.

Fashion
Musinsa, EMIS and much more
Sustainable packaging & eco-friendly hangers

Beauty and Cosmetic
Kolmar, Taejin Chem., LG H&H and more
Eco-friendly cosmetic containers & packaging

F&B
Gongcha, Yoshiharu, Reborn, Highland and more
Safe, reusable food packaging

Agriculture
Kyung Nam Do (Korea Government)
Biodegradable films & eco-packaging

Electronics
Yangwoo Elec. Romote Solution
Sustainable casings & components

Medical
Developing customers
Safe, eco-friendly medical supplies

Official Recognition – Government-Endorsed Innovation

These prestigious government and international awards validate GWG's technological excellence, innovation capacity, and leadership in sustainability—strengthening trust with customers, partners, and investors.

Minister of Trade, Industry and Energy Award

Awarded by Korea's Ministry of Trade, Industry and Energy (MOTIE).

Recognizes GWG's excellence in advancing green technology and contributing to industrial sustainability.

Highlights the company's role as a national leader in eco-friendly innovation.

Minister of SMEs and Startups Award

Awarded by Korea's Ministry of SMEs and Startups (MSS).

Acknowledges GWG's outstanding technological innovation and growth potential as a green startup.

Demonstrates credibility and recognition at the government level, strengthening trust with customers and investors.

CES Award "Innovation"

Awarded at CES (Consumer Electronics Show), the world's largest IT & electronics exhibition.

Recognized GWG's technology not only for eco-friendliness, but also for innovation and future potential.

Demonstrates uniqueness, technological leadership, and market impact.

These international certifications and awards clearly demonstrate that GWG's technology stands at the highest global level in sustainability, product performance, and innovation—providing strong trust to customers and investors.

Technological Credibility – International Certifications

Green Whale Global's technology has been validated by internationally recognized institutions.
Our eco-friendly materials go beyond simple alternatives, meeting strict global standards with innovative solutions.

TÜV Certification

TÜV AUSTRIA: A leading independent testing and certification body validating industrial and household biodegradability.

Certified for natural decomposition and compost ability under specific conditions.

Provides strong credibility in supply chain management of eco-friendly products.

GPA Certification

Awarded by the Green Plastic Alliance (GPA) as the first certification in Korea's eco-plastics sector.

Recognized as setting the benchmark for technological excellence and standards in the domestic market.

Acknowledged as the highest level of eco-plastics technology in Korea.

Green Tech Certification

Acknowledges GWG's technology as a leading solution in the eco-friendly plastics sector, meeting strict national standards for innovation and sustainability.

Official certification granted by the Korean government to technologies that contribute to environmental sustainability and carbon reduction.

Confirms GWG's role as a certified green technology provider, supporting expansion into public projects and international markets.

These international certifications and awards highlight GWG's excellence in sustainability, product quality, and innovation, providing strong trust to customers and investors.

Proposal & Highlights – “Play in Harmony with Nature”

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Exclusive Investment Opportunity

We provide the only material that meets
regulatory, market, and customer demands.
As a solution to the global plastic problem,
we invite investors to join us in creating sustainable future value.

Regulatory Alignment

Responding to global ESG and carbon neutrality regulations, with even stricter standards ahead

Eco-Friendly Market Growth

The global bioplastics market is expected to grow from USD 14.1B in 2024 to USD 44.3B by 2030.

Customer Needs

Rising demand for eco-friendly products, while maintaining compatibility with existing plastic production lines.

Partnership Value

Strategic partnership with POSCO International accelerating global market entry.

Value We Deliver to Investors

- Innovative green technology
- Access to global markets
- Sustainable profitability
- Creation of social value

Investors who are participating our Vision

“Play in Harmony with Nature”

Ministry of Environment

HYUNDAI MOTOR GROUP

Enriching Your Tomorrow Hanwha Asset Management

Hana Financial Group

KIBO

FOREST PARTNERS

And more


THANK YOU
GREENwhale® GLOBAL