PLUG AND PLAY

november 18-20 2025

SILICON VALLEY SUMMIT

#PNPTCSiliconValley

Join us at pnptc.com

PLUG AND PLAY

SV SUMMIT

K Green day: Korean Sustainable future startup showcase

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PLUG AND PLAY

November 18-20 2025



OPENING REMARKS

Elina Gorji

Director

Plug and Play GOAL

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PLUG AND PLAY

November 18-20 2025

GOAL Agenda

12:30 PM	**Welcome Remarks by Ministry of Climate, Energy and Environment**
12:35 PM	**Keynote by Matthew Claxton**
12:40 PM	**Startup Pitches**
1:15 PM	**GOAL Program Award Announcement**

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PLUG AND PLAY

November 18-20 2025

GOAL SV Team



Amir Amidi

Managing Partner



Elina Gorji

Program Director



Yui Koda

Program Manager



Inhee Choi

Sr. Program Manager



Hazel Kim

Program Intern

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November 18-20 2025



WELCOME REMARKS

Myeong-Kyoo Cheong

Director, Global Green Project Team

Ministry of Climate, Energy and Environment

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November 18-20 2025



KEYNOTE

Matthew Claxton

Partner, Sustainability

Plug and Play Tech Center

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PLUGANDPLAY

PNP<>AEPW Scale for Impact Program Overview



Matthew Claxton
Partner - Sustainability
mclaxton@pnptc.com

Plug and Play: The World's Largest Innovation Platform

100K+ STARTUP ECOSYSTEM

2000+ PORTFOLIO

25+ INDUSTRY VERTICALS

620+ CORPORATE PARTNERS

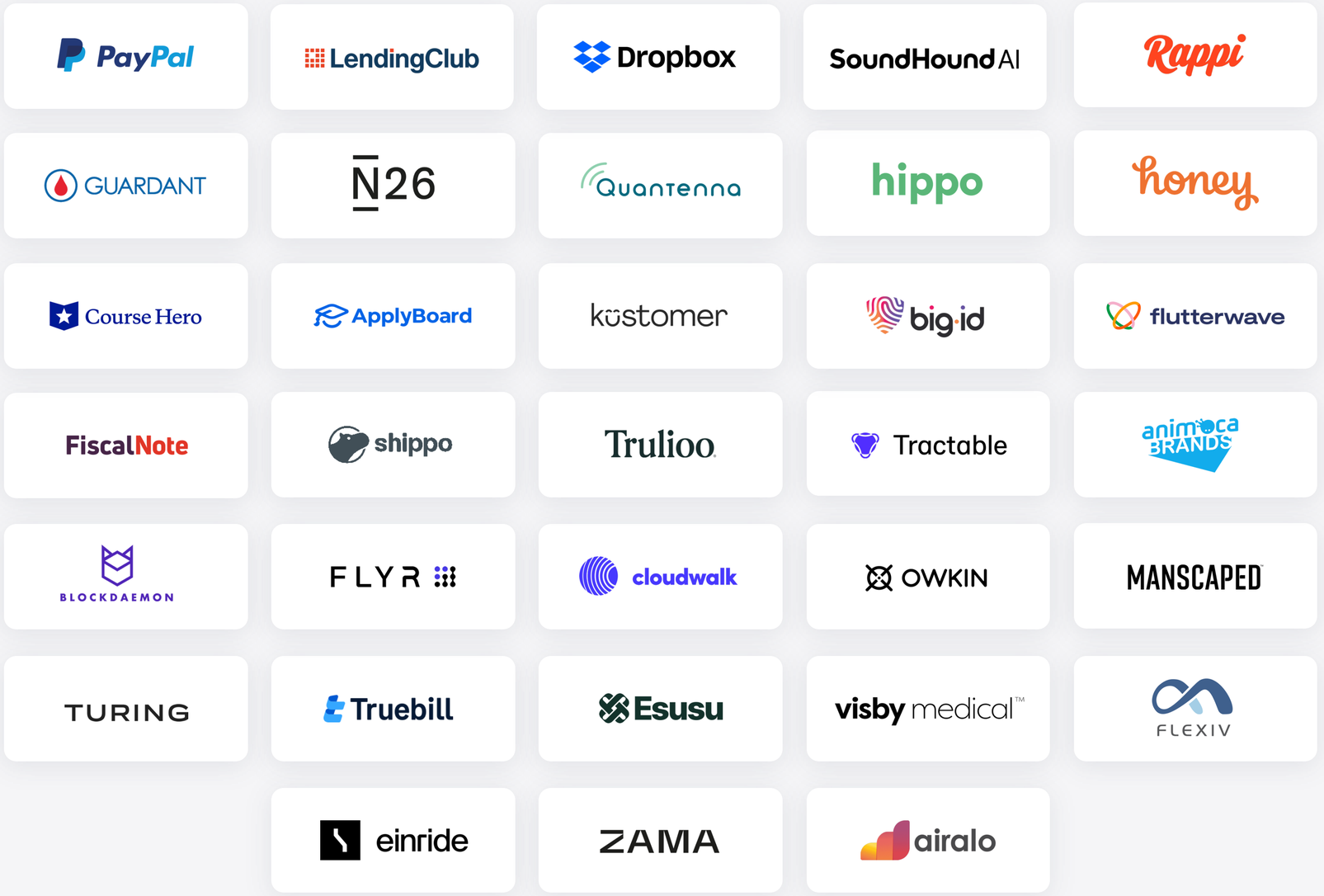
64+ OFFICES



We consistently back the best startups early

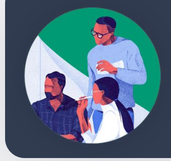
30+ Unicorns

Our growing portfolio of unicorns and category defining companies.



Our Innovation Blueprint

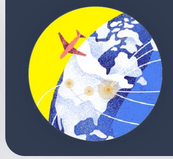
25+ Industry Verticals



OPEN INNOVATION
Sourcing and Market Insights



VENTURE CAPITAL
Corporate & VC Feedback



ACCELERATOR PROGRAM
Helping our Portfolio Scale

- Advanced Manufacturing
- Aerospace & Defense
- Agtech
- Animal Health
- Brand & Retail
- Crypto & Digital Assets
- Deeptech
- Energy
- Enterprise & AI
- Fintech
- Food & Beverage
- Health
- Insurtech
- Lifetech
- Maritime
- Media & Ad
- Medtech
- Mobility
- New Materials & Packaging
- Real Estate & Construction
- Semiconductors
- Smart Cities
- Sportstech
- Sustainability
- Travel & Hospitality
- Supply Chain

Our History in Sustainability

2016
Fashion For Good to make fashion more Sustainable

2019
Dedicated Sustainability Vertical

2021
Launched 3 new offices, and doubled our program

2022
Named Most Impactful VC Globally by Climate50

2024
Launch Sustainability Fund I

2025+
Launch of Scale for Impact Program, and our 12th office

Alliance to End Plastic Waste Global Network



PLUGANDPLAY | ALLIANCE TO END PLASTIC WASTE

Established Oct. 2019

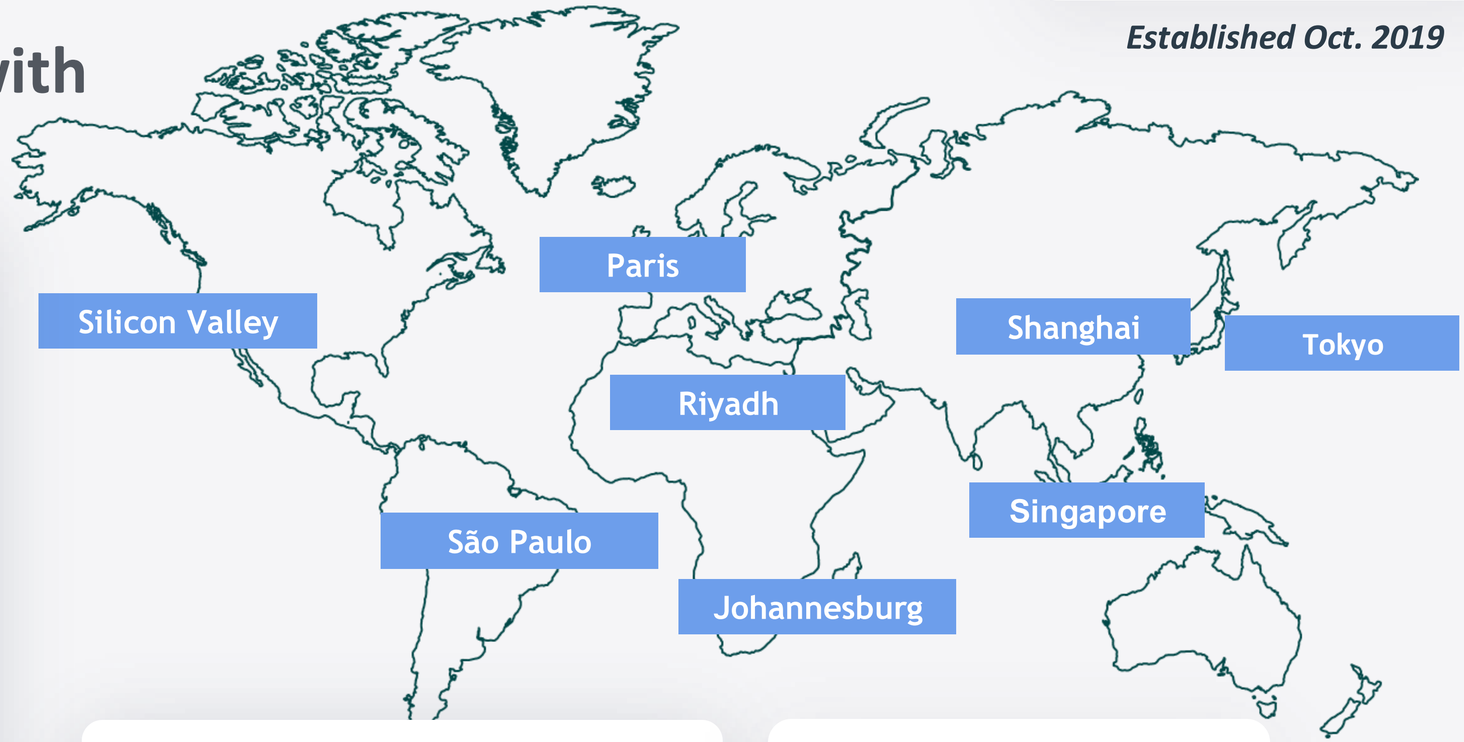
Driving plastics innovation with startups

Launched the partnership together on October 23rd, 2019 at Plug and Play in Silicon Valley.

Sourced and reviewed **4,000 startups** from across the plastic value chain and around the world. Accelerated **163 startups; resulted in $190M+ capital deployed, 240+ Pilots and PoCs**

Established **8 different hubs:** Silicon Valley, Paris, Singapore, Shanghai, São Paulo, Johannesburg, Tokyo, and Riyadh

Brought together the **75 Top Corporations** from across the plastics value chain and **70+ other investors, nonprofits and cities** onto one platform to drive innovation with the mission of ending plastic waste.



- **Collection**
- **Sorting**
- **Processing**
- **End Use**
- **Finance**
- **Waste Materials Exchange**
- **Design**

$190M+ Capital Deployed

240+ Pilots Launched

Vertical Focus Areas

Circular Economy

- Collection
- Sorting
- Processing
- End Use Markets- Recycling Technologies
- Finance
- Waste Materials Exchange
- Design
- Reusable

Industrial Decarbonization

- Green Manufacturing
- Materials Decarbonization
- Carbon Neutral Fleets
- Carbon to Value
- Carbon Tracking, Verification & Reporting
- CCUS Technology
- Plant Optimization

Clean Resources

- Renewable Energy Production
- Green Hydrogen & Infrastructure
- Water Membranes
- Battery Storage
- Energy Efficiency
- Water Treatment
- Plant Process Optimization

Mining

- EV Battery Passport & Recycling
- Ethical Practices
- Mineral Traceability
- Water Resilience
- Decarbonizing Heavy Equipment
- Mine Tailings and Brine Utilization
- Carbon Capture
- Bioremediation

Fashion

- Digitalization
- Upcycling
- Sustainable Dyes
- Recommerce
- Textile Recycling
- Water Treatment
- Bio-Based Materials

Sustainable Aviation Fuels

- Carbon to Fuel
- Bioenergy
- Waste-to-Fuels
- Feedstock Innovation
- Hydrogen to SAF
- F.T. Power to SAF
- Production
- Equipment Retrofitting

We are an end-to-end innovation service provider

Center of Excellence

- Innovation Scouting
- Incubators & Accelerators
- Dealflows
- Intrapreneurship
- Innovation Day
- Pilot Management
- Trend Reports
- Corporate to Corporate Connections
- Corporate Business Development Opportunities

Sustainability Fund

- Industry Investment Insights
- Co-Investment Opportunities
- Investing in the Future
- Financial Return
- Strategic Value
- Trend Reports
- Corporate Membership Opportunity

Scale for Impact Program

- Innovation Scouting
- Strategic Project Proposal
- Dealflows
- Co-Investment Opportunities
- Innovation Day
- PoC Management
- Large Scale Commercial Opportunities
- Corporate to Corporate Connections
- Corporate Business Development Opportunities

Early Stage Startups — Late Stage Startups

AI Center of Excellence

Plug and Play is launching the AI Center of Excellence for Sustainability. This program would bring together Corporations, Startups, and Investors from all around and from across an agreed upon value chain to drive innovation in a specific sector, as well as, corporations helping make AI more sustainable using their commercial ready solutions. Plug and Play aims to strategically bring all these players together with the mission of:

1. **PUBLIC, PRIVATE, AND UNIVERSITIES PARTNERSHIPS**
2. **TECHNOLOGY DUE DILIGENCE AND TREND REPORTING**
3. **M&A + TECHNOLOGY ADOPTION DE-RISKING**
4. **TECHNOLOGY EXPORT/IMPORT**
5. **CORPORATE to CORPORATE BENCHMARKING AND ROUNDTABLE**



- **Best AI Startups in Sustainability**
- **Direct Investment Opportunities**
- **Market Trend Reports**
- **Strategic Deal Flow**
- **Pilot & PoC Management**
- **Corporate Reverse Deal Flow**
- **Technology Export Into AI**
- **Innovation Days**
- **Business Development Opportunities**

Our investments have enabled us to earn our spot in the best names in climate tech investing.

FAMILY OFFICE INVESTMENTS

70+
# of Portfolio

Pre-Seed
Stage

PORTFOLIO SINCE 2019

Heirloom
Circulor
Basetwo
RUBI
greyparrot
Sylvera
CHECKERSPOT
Connect Earth
epoch biodesign
Thalo labs
sopht
Carbon Ridge
Carbon Reform
SUN BEAR BIOWORKS
KUBIK
FINRES
SolarMente
APOHA
rePurpose
SIMPLIFYBER

FUND I OVERVIEW

12+
# of Portfolio

Seed - Series A
Stage

PORTFOLIO SINCE 2023

mona lee
QUEENS CARBON
ATOMIC CANYON
ISOMETRIC
CarbonRun
UCANEO
GENERAL GALACTIC
GIGABLUE
vaulted deep
SIMPLIFYBER

Investment Focus Areas

Electrification and the Grid

- Grid Mgmt. & Resiliency
- Energy Storage
- Behind-the-Meter Power Systems
- Sustainable Data Centers
- Excess Energy to X
- Enhanced Geothermal
- Energy Efficient Chips
- Nuclear Fusion

Industrial Decarbonization

- Green Manufacturing
- Materials Decarbonization
- Carbon Neutral Fleets
- Carbon to Value
- Carbon Tracking, Verification & Reporting
- CCUS Technology
- AgTech
- Plant Optimization

Resiliency and Adaptation

- Intelligent Waste Sorting
- Advanced Recycling
- Sustainable Mining
- Materials Exchange
- Novel Insurance & Natural Disaster Mitigation
- Water Management

Scale for Impact Program/ Commercial Scale-up Program

The AEPW x Plug and Play SIP program would bring together Corporations, Startups, and Investors from all around and from across the Plastic Value Chain to drive large scale flexible plastic recycling projects in N.America with the goal of replicating it around the world. Plug and Play aims to strategically bring all these players together with the mission of:

1. **CATALYTIC CAPITAL DEPLOYMENT**
2. **FORMING LARGE SCALE IMPACT PARTNERSHIPS**
3. **PILOT AND POC FUNDING**
4. **ATTRACTING 3RD PARTY CORPORATES & INVESTORS**



PLUG AND PLAY

Call to Action



Matthew Claxton
Partner - Sustainability
mclaxton@pnptc.com

PLUGANDPLAY

Sv summit

Startups Pitches

#PNPTCSiliconValley

Join us at pnptc.com

PLUG AND PLAY

STARTUP PRESENTATION

ABR
Advanced Battery Recycle

ABR

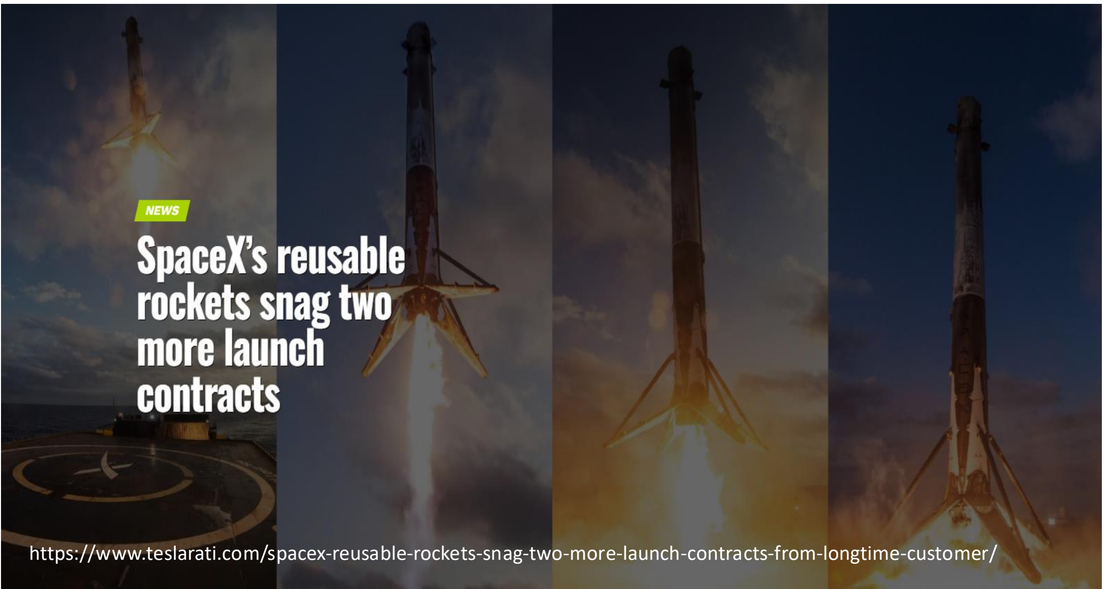
ABR directly recycles battery scrap into high-performance cathode and anode materials, reducing waste and lowering carbon emissions.

#PNPTCSiliconValley

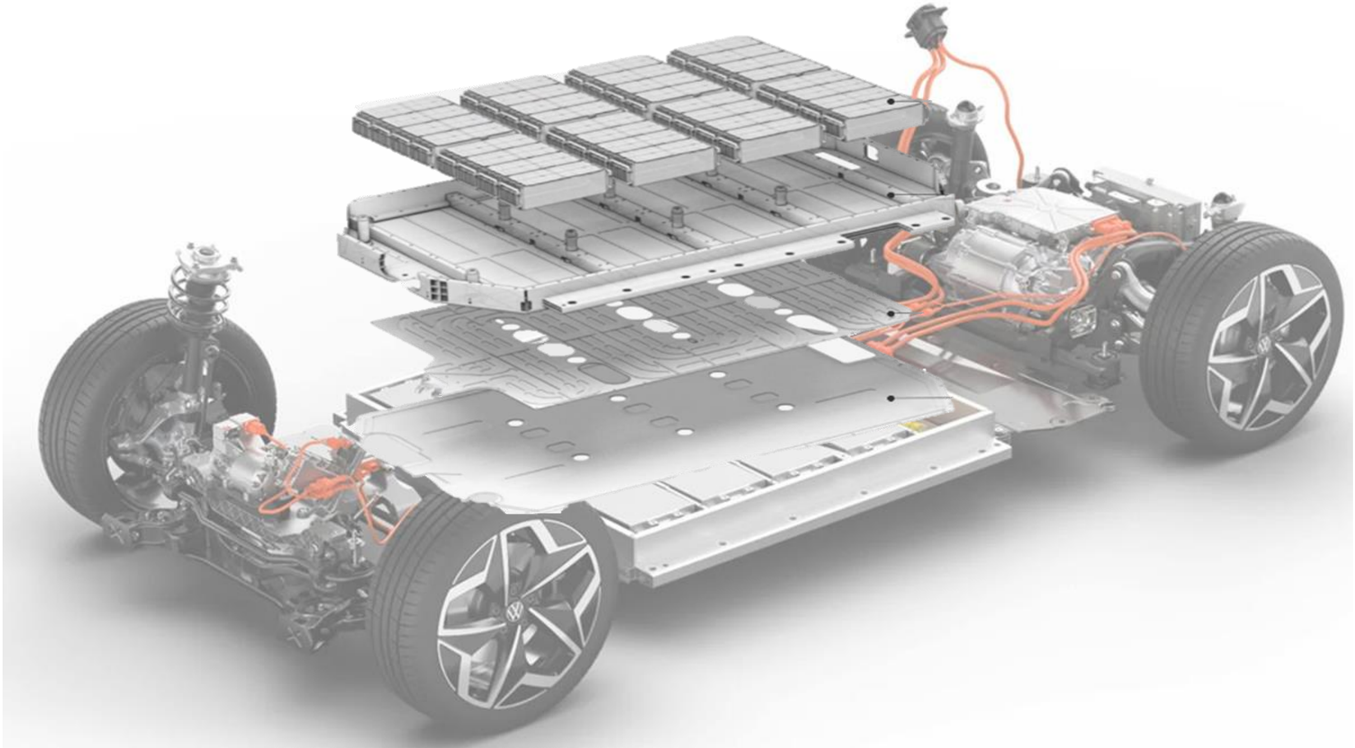
Join us at pnptc.com

Cutting Battery Costs by 20% with Sustainable Recycling

Dr. YT, KIM / CEO



https://www.teslarati.com/spacex-reusable-rockets-snag-two-more-launch-contracts-from-longtime-customer/













9 Billion

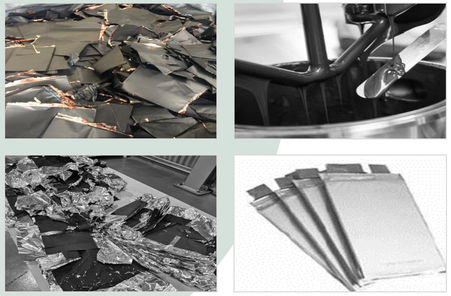
Solution

Direct Recycle: Green Battery Refurbishing

Water-based physical separation

Battery scrap

From battery production waste







Solution

Batter Market (‘25)
US$ 170 ~ 210 B

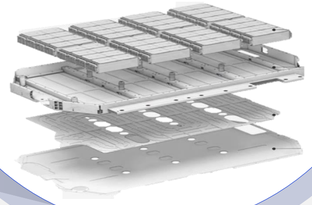
Process Cost
85%



Cathode cost
50%



Battery Cost
20%



Benefit

US$ 28 ~ 49 B

CO_2 emissions(‘25)
1 Million T

Logistic Cost
00%



Anode & LFP



Co_2 emission
60%

Environment

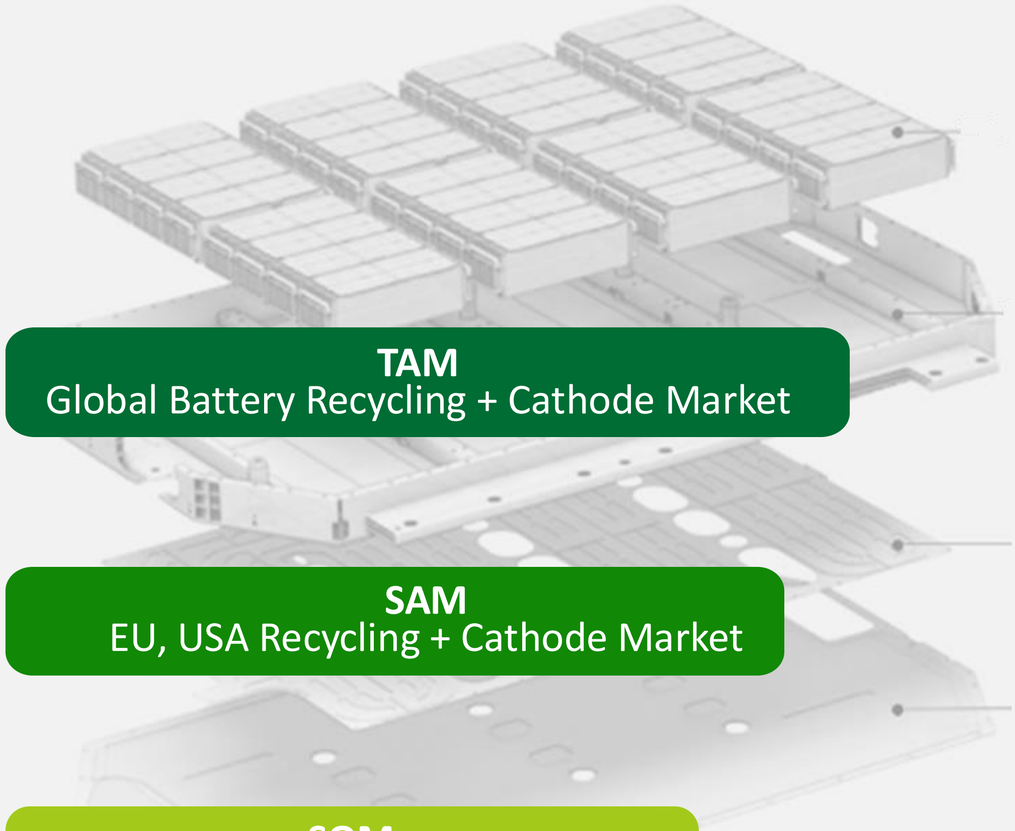
600,000 tons
(US$ 1.4 B

Market Size

$ 200 B

$ 1,400 M

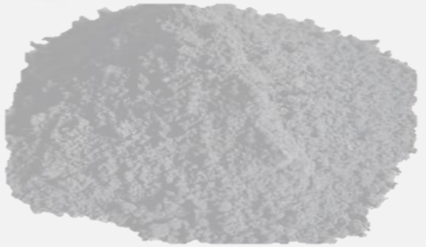
$ 280 M



TAM
Global Battery Recycling + Cathode Market

SAM
EU, USA Recycling + Cathode Market

SOM
KR, EU Recycling + Cathode Market



The Ask

Recycling





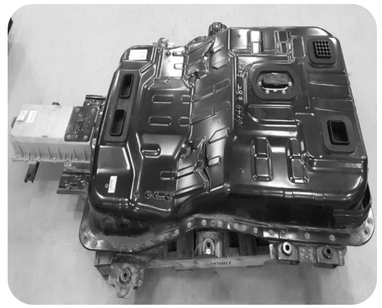




Cathode & Anode

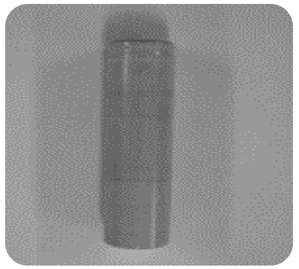


EOL Battery









Team

100 years of experience in battery research



Dr. Yu Tack Kim

CEO

Ph.D Yonsei Univ.



Sung Woo Kim

CTO

M.S. Dankook Univ.

Advisory Group



Dr. Jaekyung Lee

Advisor

Ph.D Mokpo Univ.



Hae Jin Koo

Audit Director

M.S. Tech Univ.

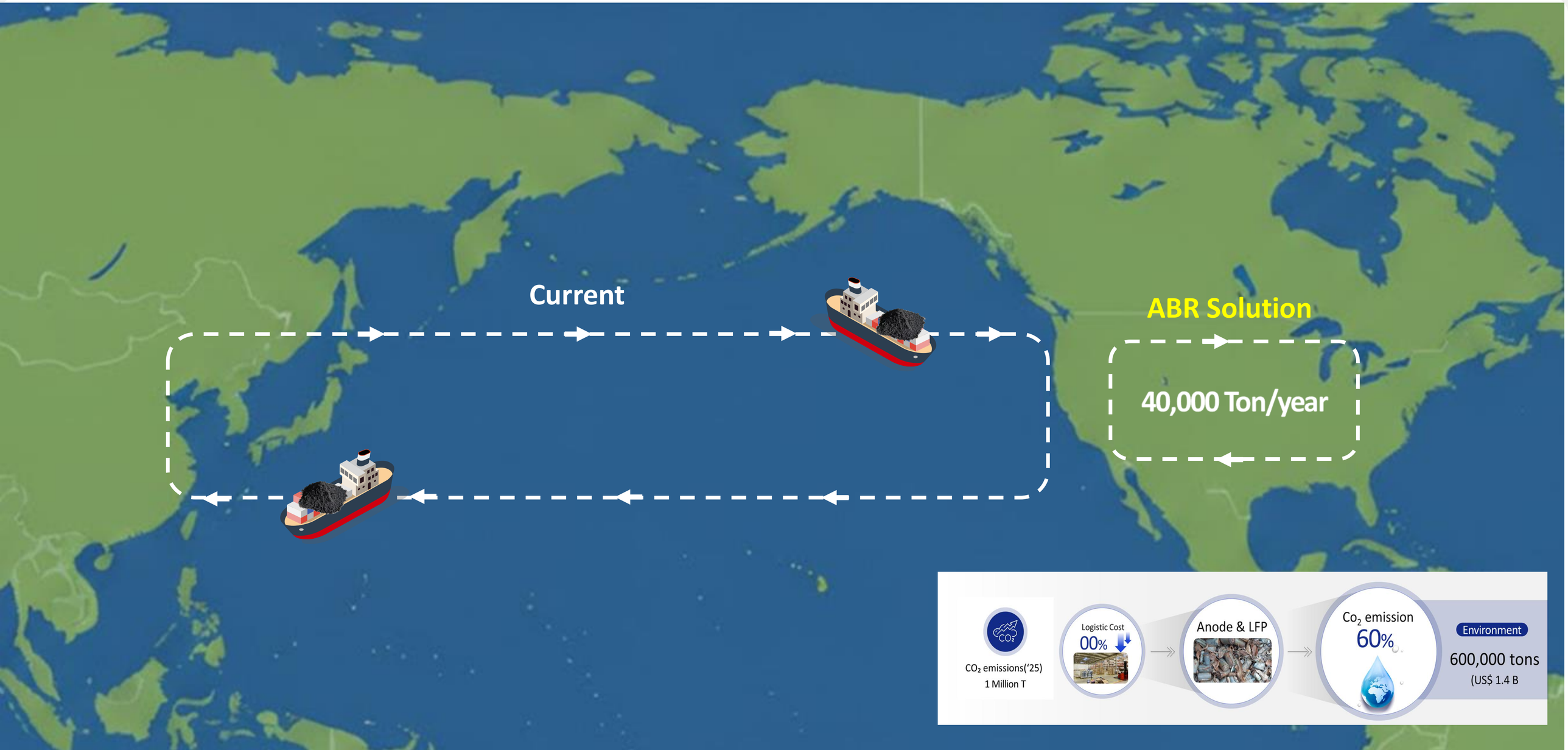


Dr. Woo Sung Kim

Advisor

Ph.D Jeonnam Univ.

Traction


Current
ABR Solution
40,000 Ton/year
CO_2 emissions('25)
1 Million T
Logistic Cost
00%
Anode & LFP
Co_2 emission
60%
Environment
600,000 tons
(US$ 1.4 B

Traction

$6.5 Million

Purchase Agreement





$20 Million

Patent Licensing

EXIDE ENERGY

POC

PowerCo

LG Energy Solution

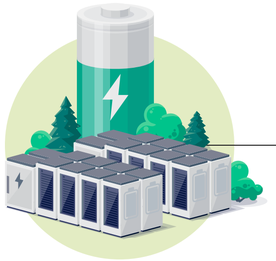
The Ask

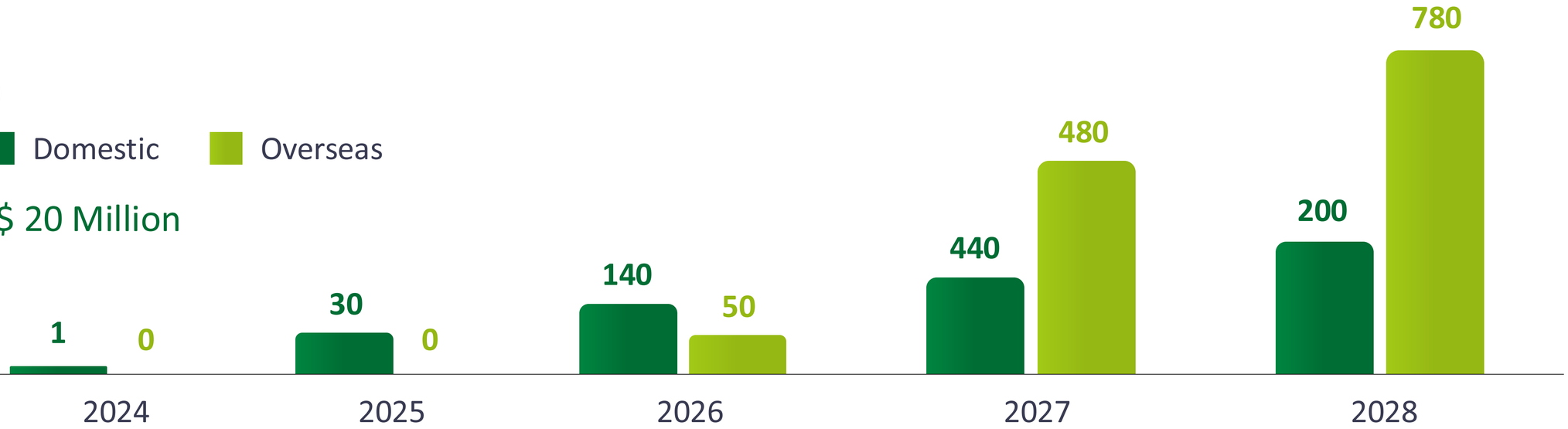
Growth Milestone

(Unit : Korean Won)

Invest Domestic Overseas

200Ton = US$ 20 Million





Certification

R-cathode (GR, KATS) — Regulation Sand Box (MOE) — Waste Management (MOE & Province)

Investing

0.1 M (Pre-value : 5M) — 0.1 M — **0.6 M US& (Pre-value : 11M)** — Series A (2.6M) — IPO

Plant

CCEI, Gravity Ventures(’24.09) — EnSol & CCEI (‘25. 03)

200Ton (KOREA) (’25.07 ~ 12) — 500Ton (KOREA) (’26.07 ~ 12) — 1,000Ton (EU, India) (’27.07 ~ 12)

Contact Us

Cleaner Earth through Eco-Friendly Battery





ytkim@adbatteryrecycle.com
www.adbatteryrecycle.com
LinkedIn: /yu-tack-kim-battery

PLUGANDPLAY

STARTUP PRESENTATION

Recycle Ledger

Recycle Ledger

Recycle Ledger is an AI-, IoT-, and blockchain-powered platform that verifies, monitors, and trades UCO for biofuels with full export certification compliance.

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Digital Infrastructure For Used Cooking Oil Collection & Biofuel Supply Chain

Recycle Ledger



Background

Used Cooking Oil Powers Low-Carbon Transportation Worldwide



1L Used Cooking Oil
would require 1M liters
of water to remove

Pollution Risk



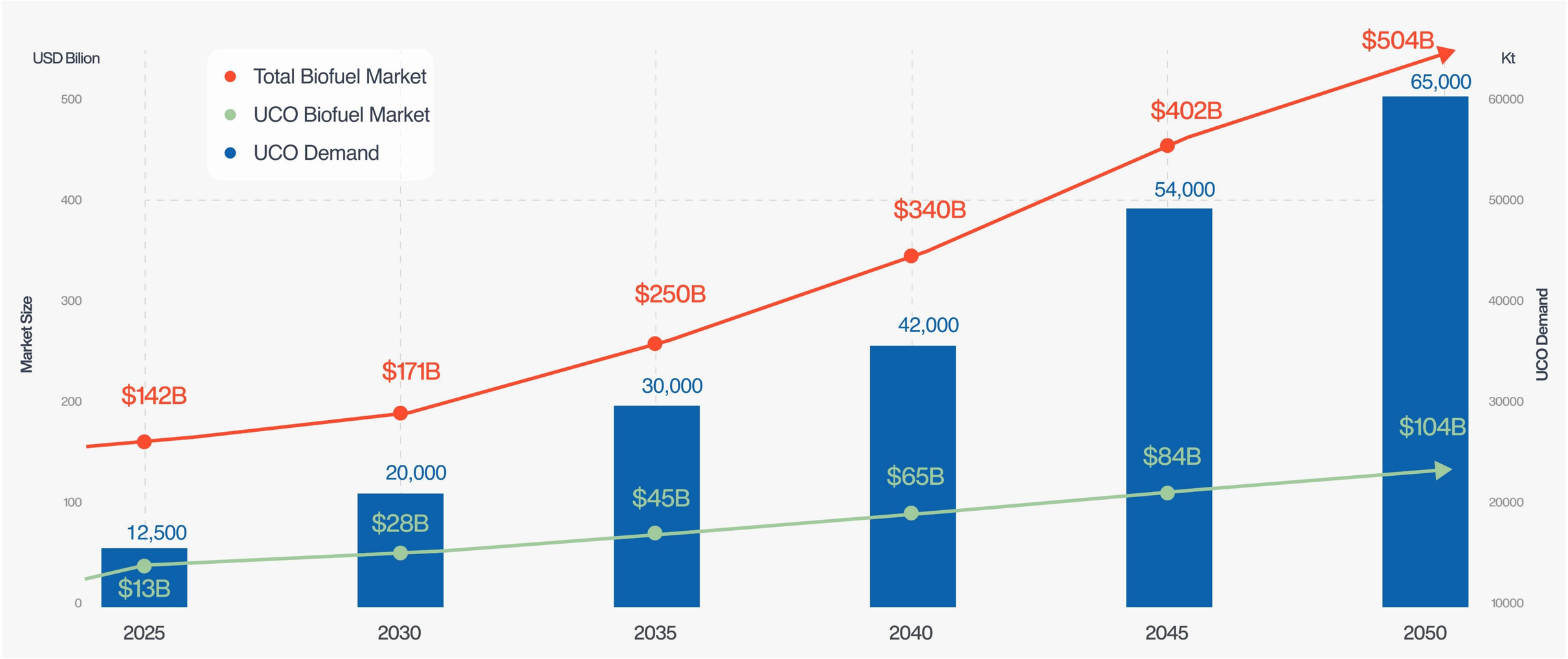
USA LCFS: $300/mt
EU ETS: 80 Euro

Lowest Carbon Intensity

*UCO: Used Cooking Oil, Which Is Utilized As A Feedstock For Biodiesel Production

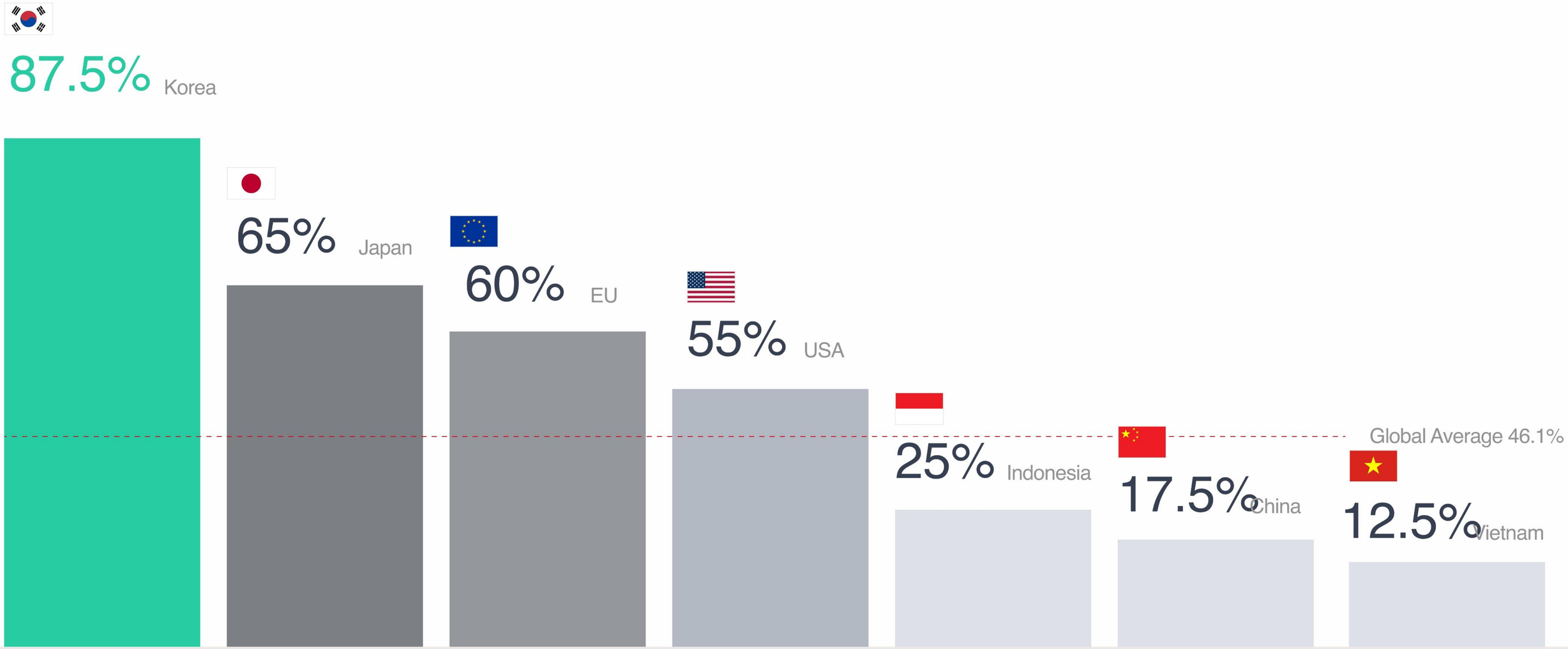
Recycle Ledger

$504B Biofuel Market Needs 65M Tons Of Used Cooking Oil



Recycle Ledger

Korea Outperforms The World In Used Cooking Oil Collection



Recycle Ledger

Four Key Drivers Of UCO Collection Rate Growth

Sustainable Fuel Value Chain In Korea



High Compensation

Collection Infrastructure

US/EU Certification

Global Consumer

Solution 1 - UCO Trace

Recycle Ledger

Certified & Proven Biofuel Verification Solution



Sole solution adopted
by a U.S. certification body

CARB
Weaver, eco-engineers

Only 1

Collected Used Cooking Oil

190K Mt

Bio fuel Certificated

17

SaaS Subscription

$10/ton

Operate In

Malaysia | Korea | Vietnam

Solution 2 - UCO CRM

Recycle Ledger

CRM Platform Driving Collection Rate Improvement



AI-Powered Collection Route Optimization

-10%

Customer Relationship Management

+ 15%

Collector Payment Management

+100%

SaaS Subscription

$10/ton

Operate In

Malaysia

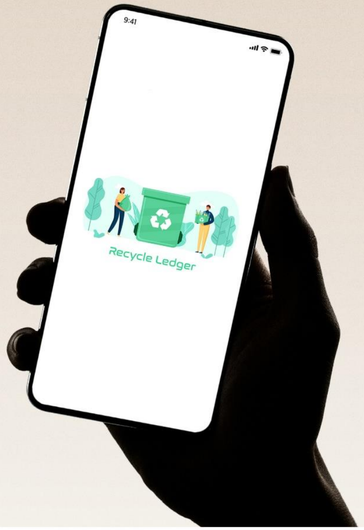
Solution 3

Recycle Ledger

Enhanced Incentives & Trading Platform For Collection Growth

High Compensation

Restaurant-Collector Matching Platform With Unmanned Collection Machines, Offering Instant Profit Incentives.



KOICA

CTS

Profit Sharing With Collectors

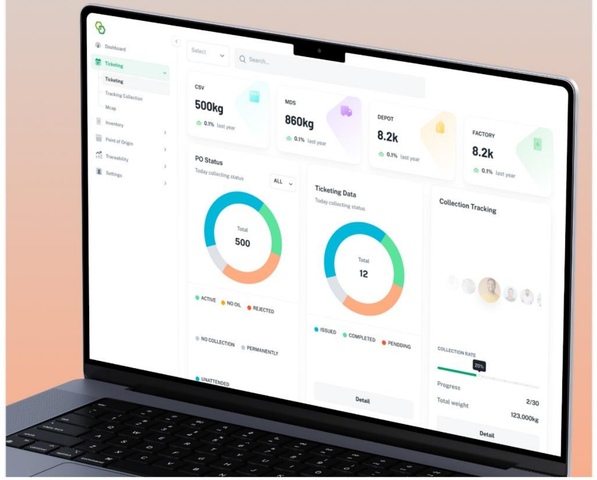
50%

Proof Of Concept

Vietnam

Global Market Connectivity

Connecting Local Used Cooking Oil Collectors With Global Biofuel Producers



Trading Fee

5%

Deal Negotiation

Malaysia | Korea | Vietnam

Market Size

Recycle Ledger

LAM

25% Penetration Of Asian UCO Market (2030)

$0.35B

SOM

Asia UCO Biofuel Market (2050)

$5.7B

SAM

UCO-Based Biofuel Market (2050)

$8.4B

TAM

Total Biofuel Market (2050)

$25.6B

Recycle Ledger

20+ Years In Digital Infrastructure, E-Commerce, Supply Chain



Ryan CEO

Former CISO At GS Energy

Information Security & Business

10+ Years At GS Energy Managing Project Development And Information Security
Certified Professional Engineer In Information Management
SMS & IT Auditor, SW Modeling Professional
Executive MBA, Seoul National University

GS Energy



Helena CTO

Former E-Bay Korea Architect

Commerce & Market Platform

20+ Years In Web Development, System Design, And Platform Management
Led Teams To Deliver Scalable E-Commerce And Digital Marketplace Platforms
Bachelor's In Business Administration, Korea National Open University

ebay



Nancy CFO

Former Asia Pacific CFO At Mentholatum

Complex Supply Chains & Global Market Expansion

25+ Years In Finance, Supply Chain, And Administration At GE, Toshiba, Mentholatum
Experienced In ERP Systems, Financial Planning, And Global Operations
B.A. In Economics (Sejong Univ.), Accounting Studies (El Paso College, USA),
M.A. Coursework (Sogang Univ.)

Mentholatum
General Electric



Clarisse Manager

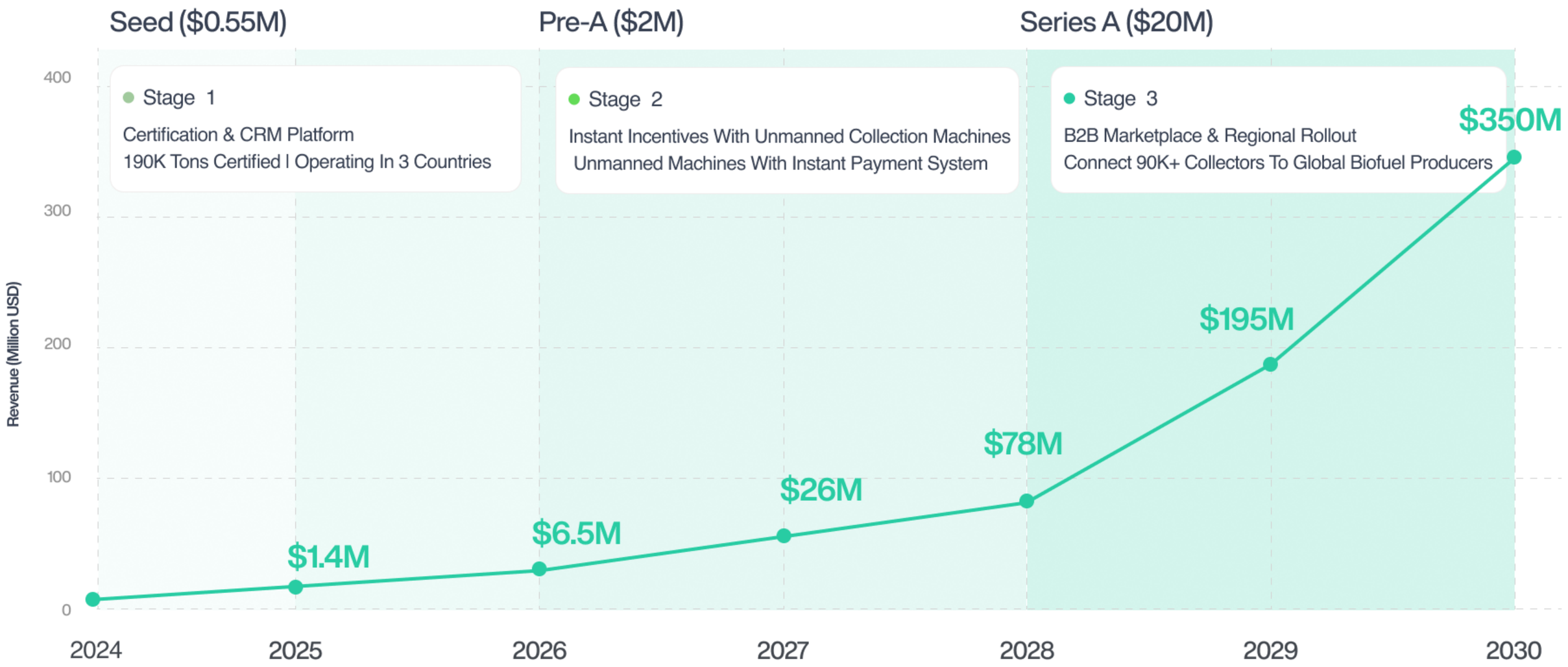
Global Project Manager

ESG & Sustainability

6+ Years Of Experience In Policy Analysis, Compliance,
And Project Evaluation Across ESG And Development Sectors
Master's In International Development; BA In International Politics,
Cum Laude & Salutatorian, Sustainability Accounting

Recycle Ledger

Recycleledger Revenue Growth (2025-2030)



Innovation

Recycle Ledger

Revolutionizing The Market With The Recycle Ledger Eco-System

Biofuel Producer

Never Worry About UCO Supply Again: Data-Driven Transparency Ensures Stable, Certified Feedstock

Certification Body

From Spot-Checking To 100% Verification: Automated Traceability That Scales Without Adding Auditors

Trader

Replace Field Trips With Clicks: Digital Marketplace Connecting 90K Suppliers Instantly

Contact us

Website

linkedin

E-mail

clarisse@recycleledger.com

PLUG AND PLAY

STARTUP PRESENTATION

REPLA

REPLA

REPLA uses biotechnology to selectively degrade PE from mixed plastic waste, recovering high-purity PP and enabling higher-value recycling streams.

#PNPTCSiliconValley

Join us at pnptc.com

REALCYCLE™ with REPLA

The Path to a Circular Economy through Sustainable Plastic Recycling

REPLA



Worthless Waste

with

REALCYCLE™



Cosmetic Package



Automotive Interior



Home Appliance



Valuable Plastic

Estimated Annual Growth Rate of Recycled Plastic Market : **63.8B USD until 2027**

OECD, Market Data Forecast Analysis

Yet, Severe Imbalance on Demand/Supply Ratio

Petrochemical Industry Dataset, Money Today

Supply Outlook : 2.7t

Demand Outlook : 9.6t

Core Problem

Cosmetic Package



Home Appliance



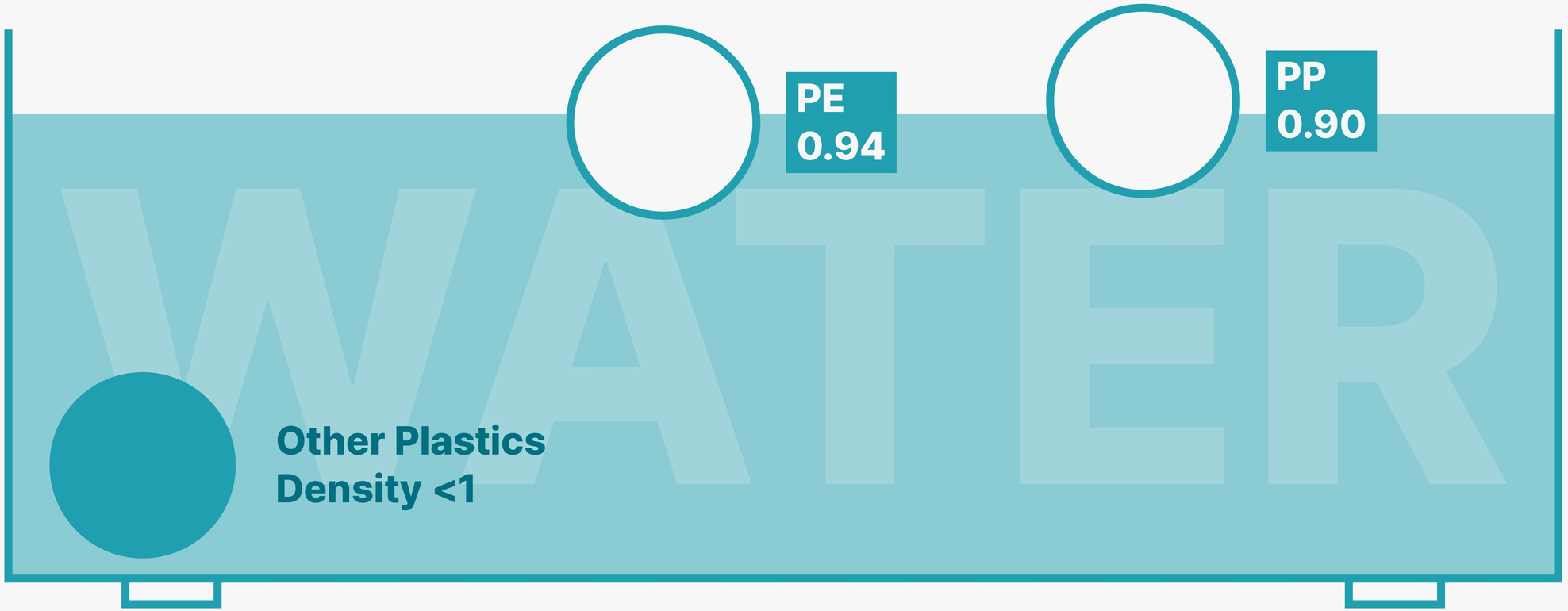
Automotive Interior



5

PP

is everywhere.



PP/PE seperation is major technical hurdle.

Low recycling rate of PP relative to its usage.

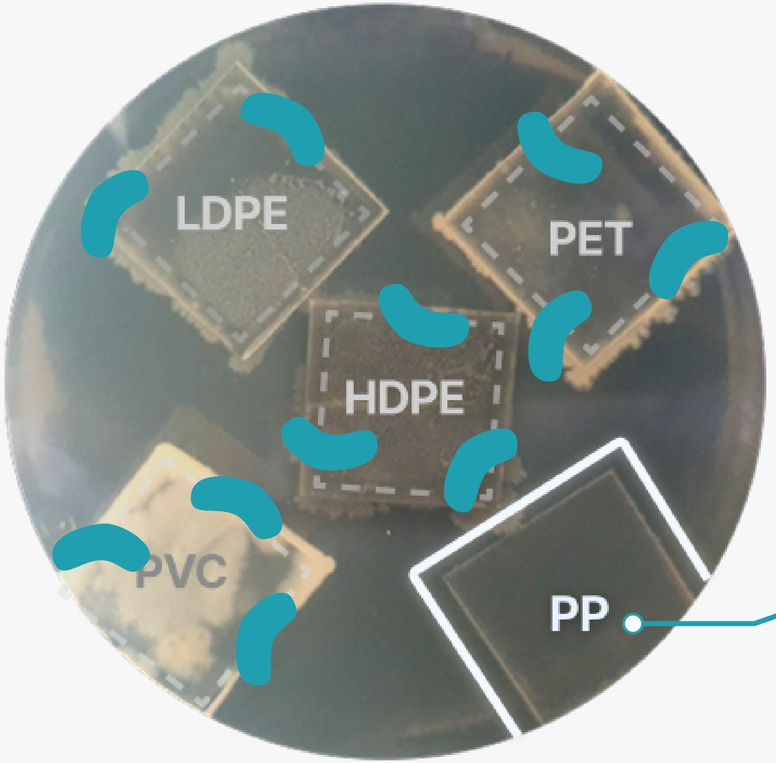


Global Plastic Production Plastics – the fast Facts 2023, Plastic Europe



Global Plastic Waste Fate by Polymer, 2019, OECD

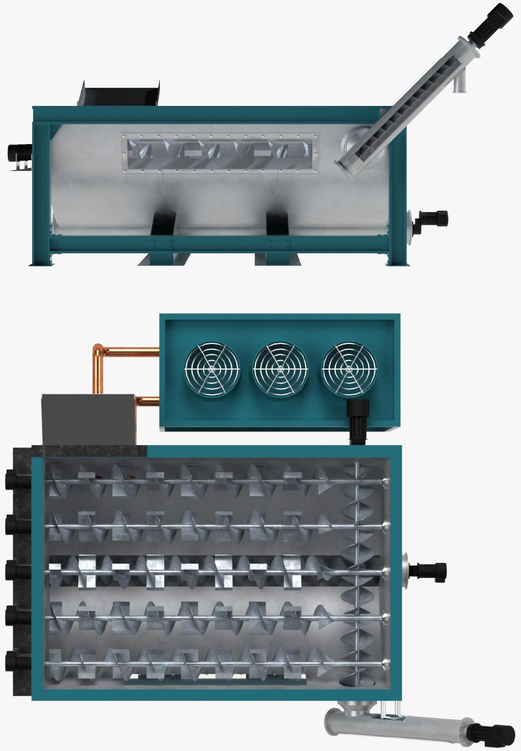
PP consist 18.9% of global plastic production, but only 1.7/69.2Mt (2.5%)are recycled



Plastic Degrading Bacterial strain Cultured by REPLA

Only recovers PP by degrading every other unwanted plastics.

Our Solution





Biotank™

Recovers highly homogeneous PP from mixed plastics.

Technical Prowess

Conventional Methods

Pyrolysis
455–700°C

High temperature & Pressure

Virgin Production / Solvolysis
50~420°C

Petroleum based byproducts

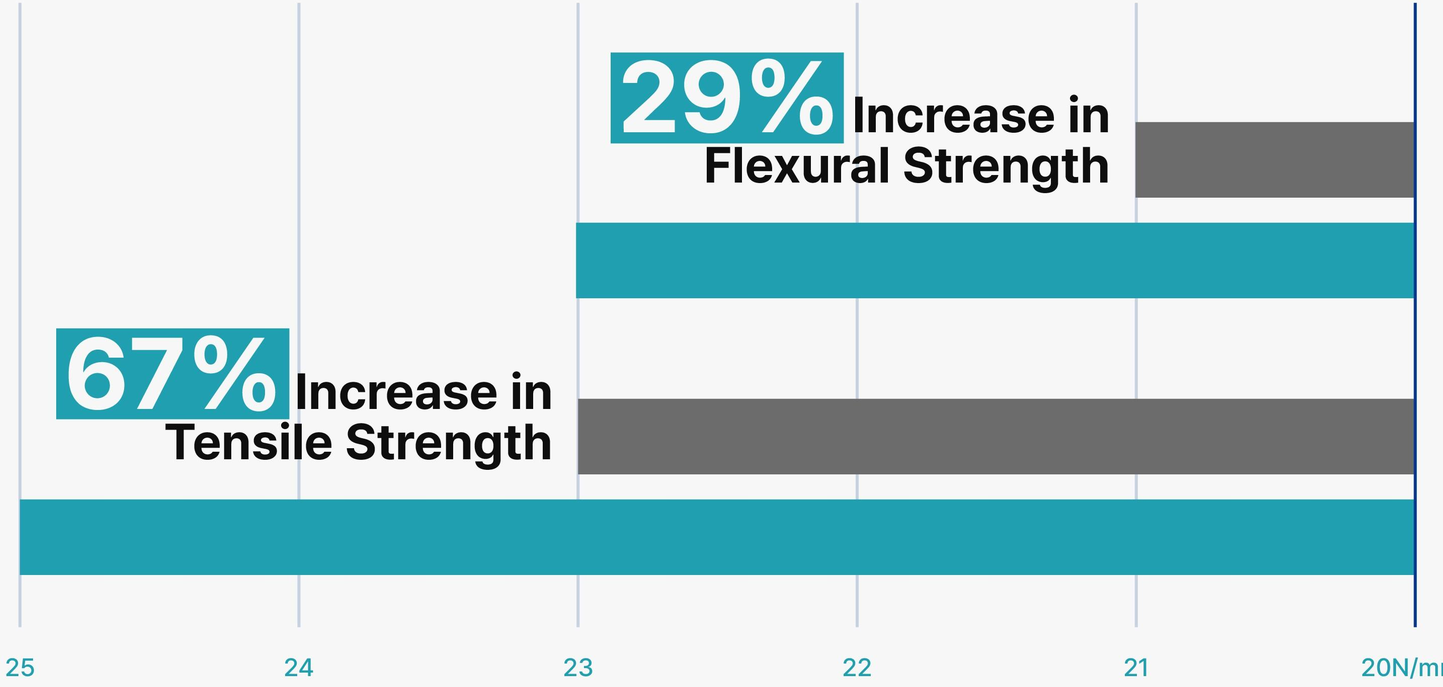
REPLA Bio-Recycling Technology

REALCYCLE™
20~30°C

H2O + CO2
Small Amount of Operational Byproduct

Least CO2/Greenhouse Gas Emission

Increased Material Property





Koptri
Korea Polymer Testing & Research Institute
www.polymer.co.kr
Test report No.: 24-02981
Page 2 / 10

TEST REPORT

표 1. 시료명 및 시료사진

No.	의뢰자가 제공한 시료명	시험에 사용한 시료명	시료사진
1	대조군	Koptri-24-06-04042-1	
2	실험군	Koptri-24-06-04042-2	

표 2-1. 시험방법 및 시험결과

시료명	시험항목	단위	시험방법	시험결과
Koptri-24-06-04042-1	인장강도	N/mm²	ASTM D638	23
Koptri-24-06-04042-2	인장강도	N/mm²	ASTM D638	25

표 2-2. 시험방법 및 시험결과

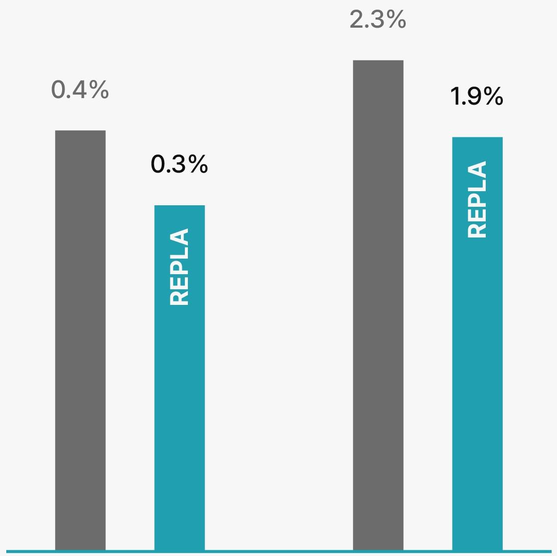
시료명	시험항목	단위	시험방법	시험결과
Koptri-24-06-04042-1	굴곡강도	N/mm²	ASTM D790	21
Koptri-24-06-04042-2	굴곡강도	N/mm²	ASTM D790	23

(우)02791 서울특별시 동대문구 천호대로 367, 365 한국고분자시험연구소(주) TEL: 1588-1574

Test result certified by KOPTRI
(Korea Polymer Testing & Research Institute, Ltd.,)

Less defective product due to increased material properties.

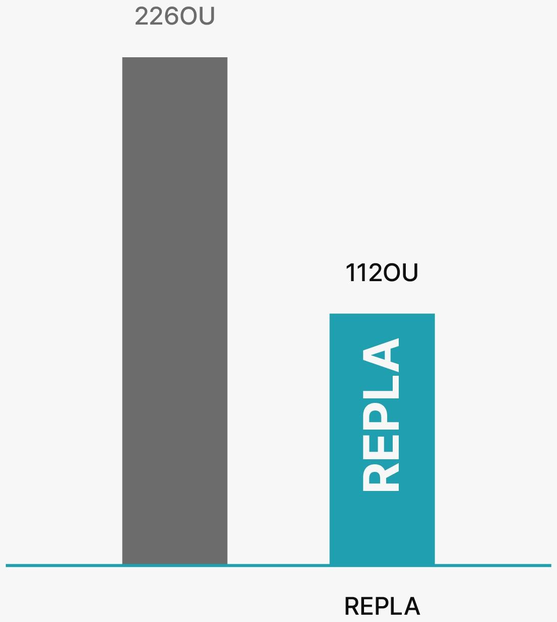
Odors and Additives Removal



11% Less

Additives

Plastic Additives (Antioxidants)
- 2,4-di-tert-butylphenol
- Phenol, 2,4-bis(1,1,-dimethylethyl)-, phosphite



46% Less

Odors

Volatile Organic Compounds
- Hexanal
- Ethylbenzene
- Styrene
- D-Limonene etc.

Broadens the range of products that can be manufactured with recycled materials.

Business Models

AS-IS

Waste

Collection

Seperation

High-End Product Manufacturer

Low-End Product Manufacturer

TO-BE

Waste

Collection

Seperation

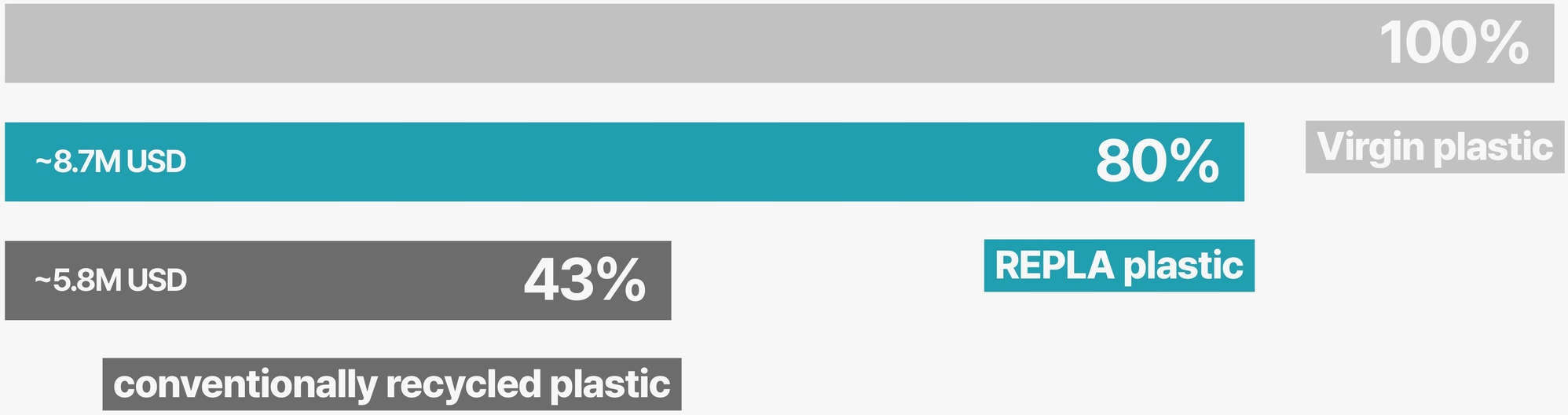


REALCYCLE™

High-End Product Manufacturer

(Automotive interior, Home appliances, Cosmetic packaging, and more.)

Increase in Revenues by Adopting Biotank



50% increase in selling price

*Based on the 30 tons/day processing capacity Biotank™ product scheduled for construction in 2027.

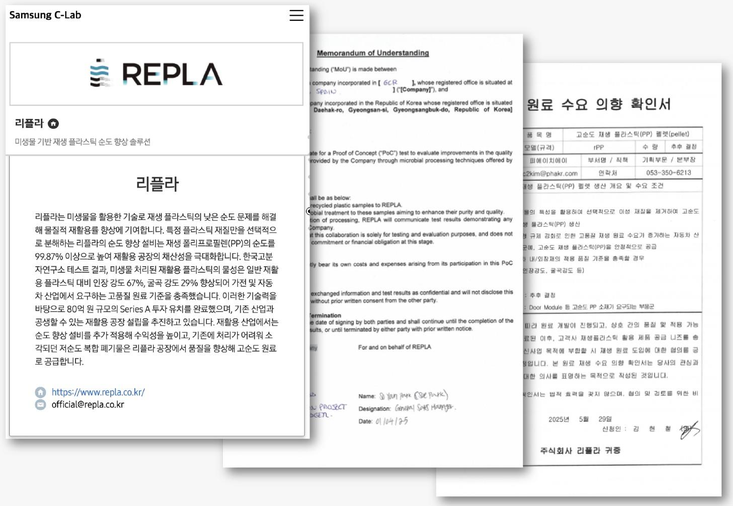
High-end Product Manufacturers

Samsung C-Lab Home Appliance - Samsung Electronics

- 73K USD funded by Samsung C-Lab Outside for PoC operation.

PHC PHA Automotive Parts - PHA (Hyundai Motors Subsidiary)

- Obtained Letter of Intent for automobile parts such as bumpers.



Recycling Industries

STENA RECYCLING Stena Recycling (Italy)

- Assessing material property of Repla's high-purity rPP for future purchase of Biotank™.

Covestro (Multi-national)

- Assessing purity increase of their Bayblend™ blend material with REALCYCLE™ process.

Syklo Syklo (Finland)

- Assessing material property of Repla's high-purity rPP for future purchase of Biotank™.

GCR (Spain)

- Obtained Letter of Intent for purchasing Biotank™.

We Ask,

Pilot Product



Demonstration Factory



Full-scale Commercialization



Seed — **Pre-A** — **Series A** - - **2M USD GAP** - - **Series B**

2020 2022 2024-2025 2026+

Accumulated Investment totals $9.89 million USD
Require an additional $2 million USD to finalize bridge financing and launch the Series B funding round.



CEO

Dong-eun Suh

Founder

- Tony B. Academic Awardee of Society for Laboratory Automation and Screening (SLAS)
- Forbes Asia 30 under 30 Leader (Industry, Manufacturing & Energy)

REPLA

Teams & Structures

Management & Strategic planning



VP

Kiyoung Kwon

Plant Management & Operation

- Over 23 years of plastic compounding
- 5 years of operating both PCR plastic & engineering plastic compounding facility



CTO

Hongrae Kim

Technical Lead

- 8 years of plastic degradation research
- Director of gene/enzyme research strategy



CSO

Yunju Kim

External Strategy

- Former Strategic Planner and Internal Brand Designer at Yanolja's Business Relations team



Baek Kee Sung

Director of Manufacturing Operations

- Established and operated a waste treatment plant

Product Development & Business Planning



Billy Jeon

General Manager of Product Development

- 20 years of experience in production planning, control, HW development



Kyoungho Ryu

General Manager of Product Development

- 25 years of experience in algorithm, embedded, control unit development



Mi Sook O

Director of Business Planning

- 8 years of experience as general manager of finance
- 26 years of expertise in customs and foreign relation business



Juhyeong Jung

Business Planning

- 8 years of experience in P&L performance analysis and Cost Control

Research & Development



Director of Technology

Hyeyeon Koh

Head of Research

- 13 years of genetics and protein research experience under KPRI (Korea Polar Research Institute)



Jang Hee Cho

Enzyme Modification

- 20 years of research experience in 3D structure engineering, Expression and purification of protein



Hyeyoung Shin

Culture Optimization

- 14 years of research experience in Genetic modification and tissue culture, Culture optimization



Jongwon Kim

Large-Scale Cultivation

- 17 years of experience in large-scale cultivation

You can reach true circulation with us,

thank you.

REPLA

official@repla.co.kr | +82-70-4667-1828| @Suwon-si, South Korea

PLUG AND PLAY

STARTUP PRESENTATION

aetech

AETECH

AETECH uses AI-powered robotic systems to automate waste sorting, improve recycling accuracy, and streamline waste-management operations.

#PNPTCSiliconValley

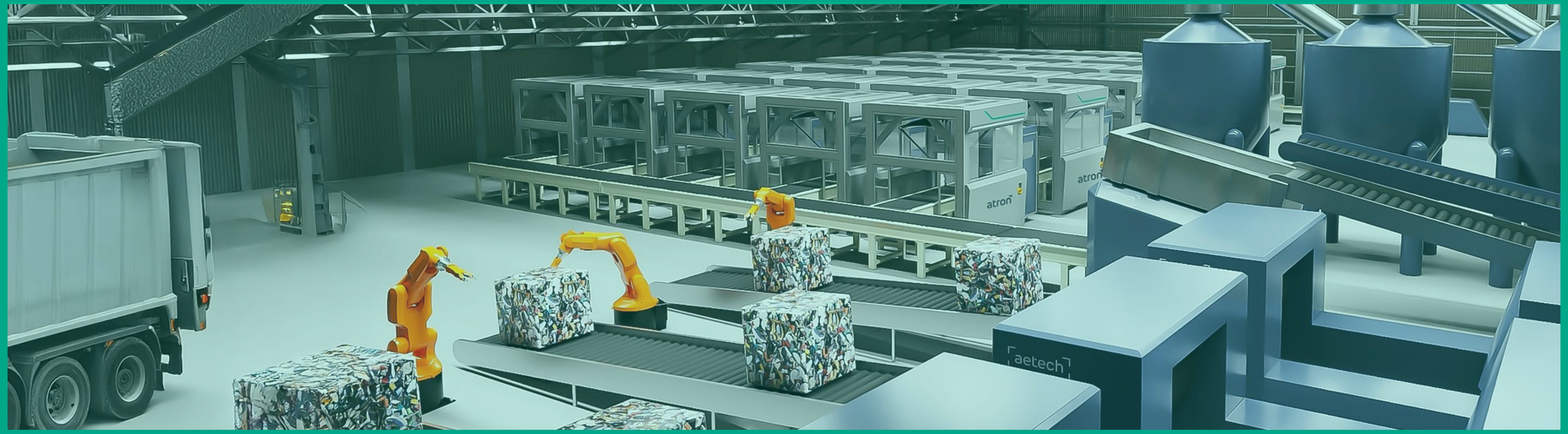
Join us at pnptc.com

For Smart Cities with Full-Auto Recycling

AETECH Co., Ltd.

Homepage : www.aetech.co.kr/en

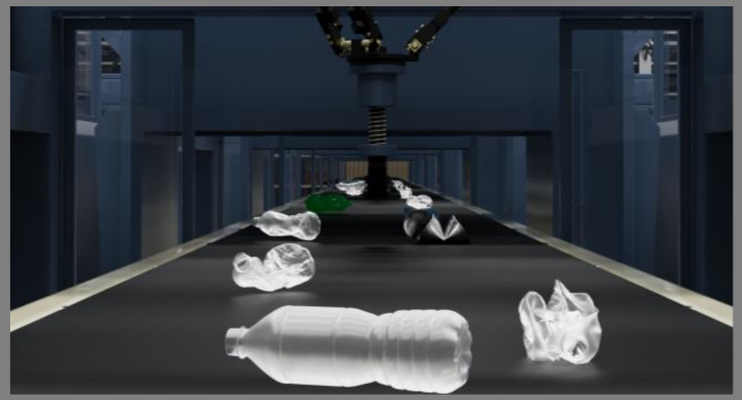
E-mail : coys@aetech.co.kr



ATRON : AI-powered waste sorting robot



The amount of waste is increasing



The only way to solve : Automated robot

Save up to $110,000 per year
(Labor and waste processing costs)



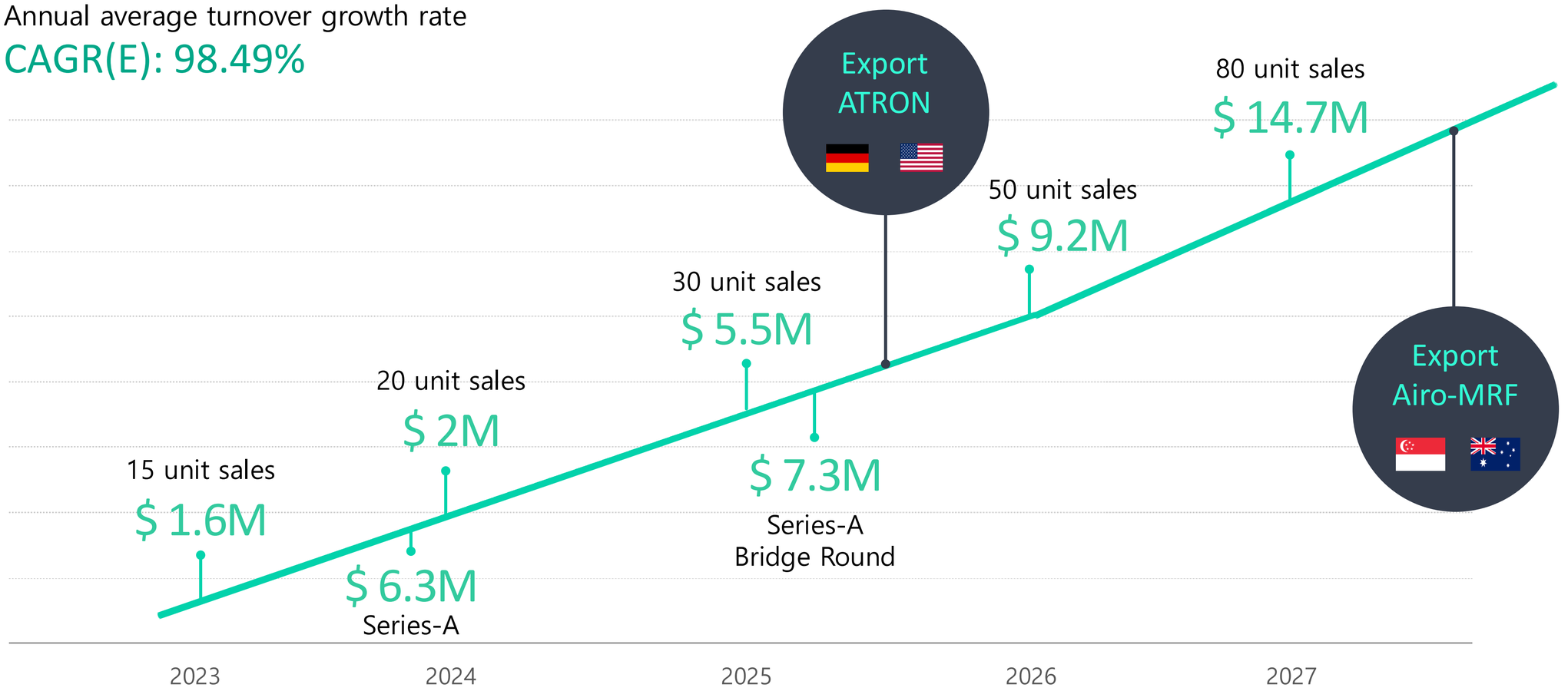
Solves labor shortage

Reduces operating cost

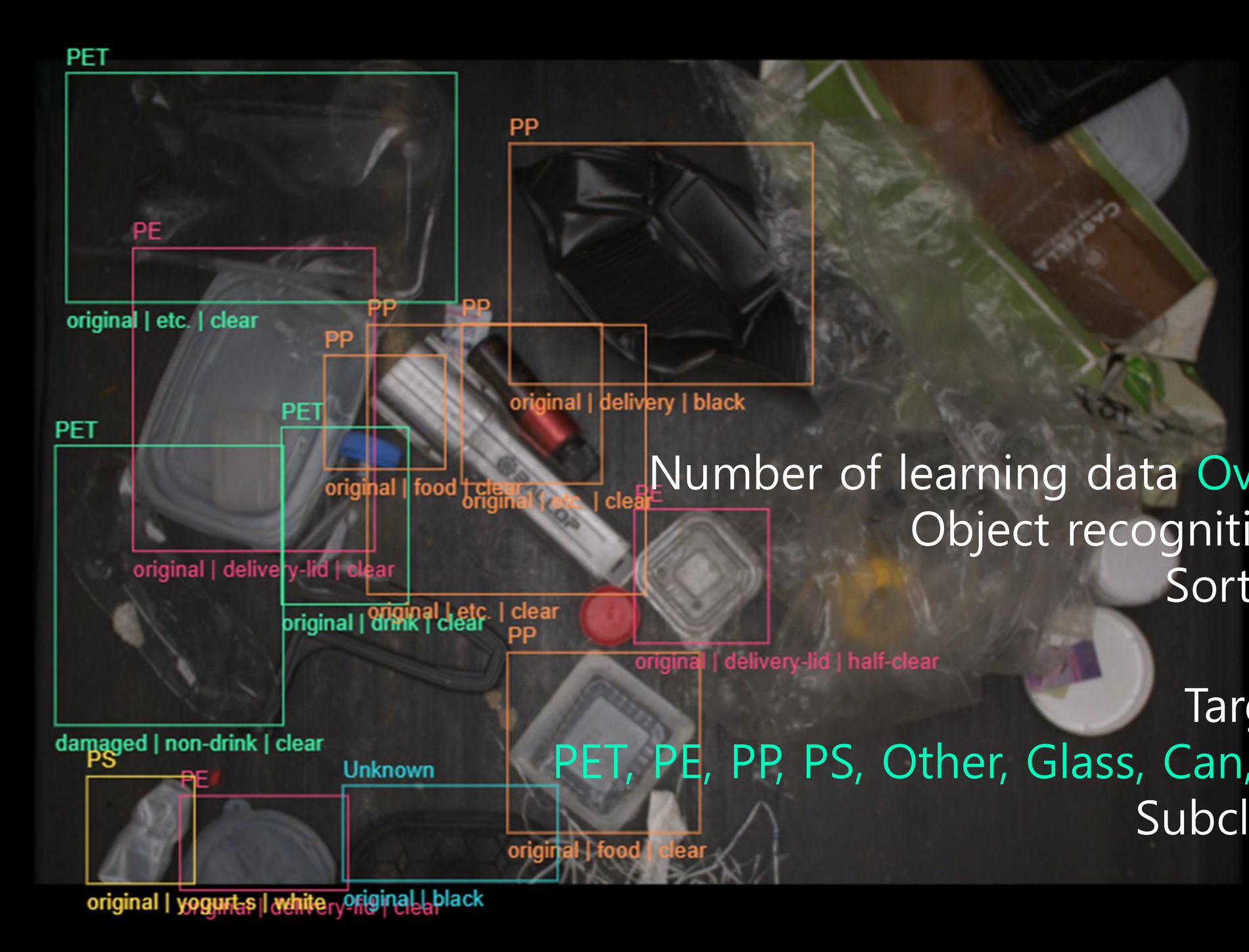
No accidents

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Revenue & Investment



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Number of learning data Over 5 million copies

Object recognition accuracy 99.3%

Sorting Speed 96 ppm

Target waste (9 types)

PET, PE, PP, PS, Other, Glass, Can, Paper, Plastic Film

Subclassification Criteria

50 Classifications

AI for Waste Classification Video



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Waste sorting robot video

Suction Gripper



Finger Gripper



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Competitor Analysis – Faster, Cheaper, Energy Efficient

Production	**AETECH** Korea	MACHINEX Canada	RECYCLEYE United Kingdom	AMP ROBOTICS USA	ZEN ROBOTICS Finland
Image					
Dual-arm Option	**O**	X	X	X	O
Sensor	**RGB + Hyperspectral**	RGB	RGB	RGB	RGB
Gripper	**Suction & Finger Gripper**	Suction Gripper	Suction Gripper	Suction Gripper	Finger Gripper
Price(one arm)	**$ 250,000**	$ 400,000	$ 250,000	$ 300,000	$ 500,000
Power Consumption	**10kW**	13kW	10kW	12kW	18kW
Sortable Items	**50**	50	30	50	12
Sorting Speed(min)	**96±**	80±	80±	80±	80±
Accuracy(%)	**99±**	95±	95±	99±	99±

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airo-mrf » No Manual Labor Required

AI Robot based Material Recovery Facility

Save $ 2.1M per year



Under Construction
& Launching in 2026



2nd Business Model



AETECH : Mavericks of Recycling Innovation
50 Members with 6 Teams

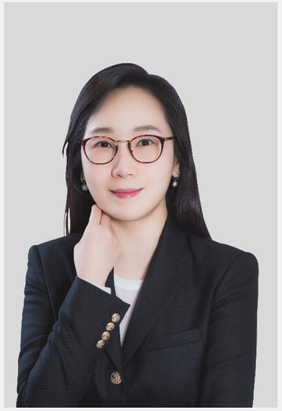


CEO

Taehyung Park

Over 10 Years of Experience in Environmental Research
B.Sc. in Environmental Science & Geology, Saint Mary's University

"AETECH is an AI robotics startup founded with a clear mission : to solve the challenges of recycling."



CFO

Ju Ime Park

2 Times IPO Experiences

ORBITECH



CSO

Jaeho Ryu

Ph.D in Energy Policy

KEITI



CTO

Dokyung Lee

Ph.D in Computer Science Vision AI Expert

SAMSUNG



Department head

Soojin Sung

Mechanical Expert

마이크로인스펙션(주)
Micro INSPECTION, Inc.

Edison Awards Bronze

WIPO Global Awards Top 8 (First Korean)

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aetech

leading the future of circularity

Aetech is committed to creating a sustainable future through the innovation of cutting-edge AI robotics technology, taking into consideration the environment, both now and in the future.

LinkedIn

Homepage

https://aetech.co.kr/en

Directions

- Incheon Headquarters: PT-03, G-dong, 410 Jeongseojin-ro, Seo-gu, Incheon, Republic of Korea
- Guro Branch: 13, Digital-ro 27-gil, Guro-gu, Seoul, Republic of Korea
- Robot Material Recovery Facility: 1045-1 Gyeongseodong, Seo-gu, Incheon (Gyeongseo Material Cycle Specialized Complex)

aetech

Waste Disposal in the United States

The United States categorizes waste disposal into five main types, but in practice, the standards are unclear and the public does not strictly follow the separation system.



- Low recycling efficiency shows that waste separation at source is failing in the U.S.
- Different color codes across states cause confusion and contamination in recycling.
- Labor-intensive and inconsistent sorting processes make large-scale recycling unsustainable.

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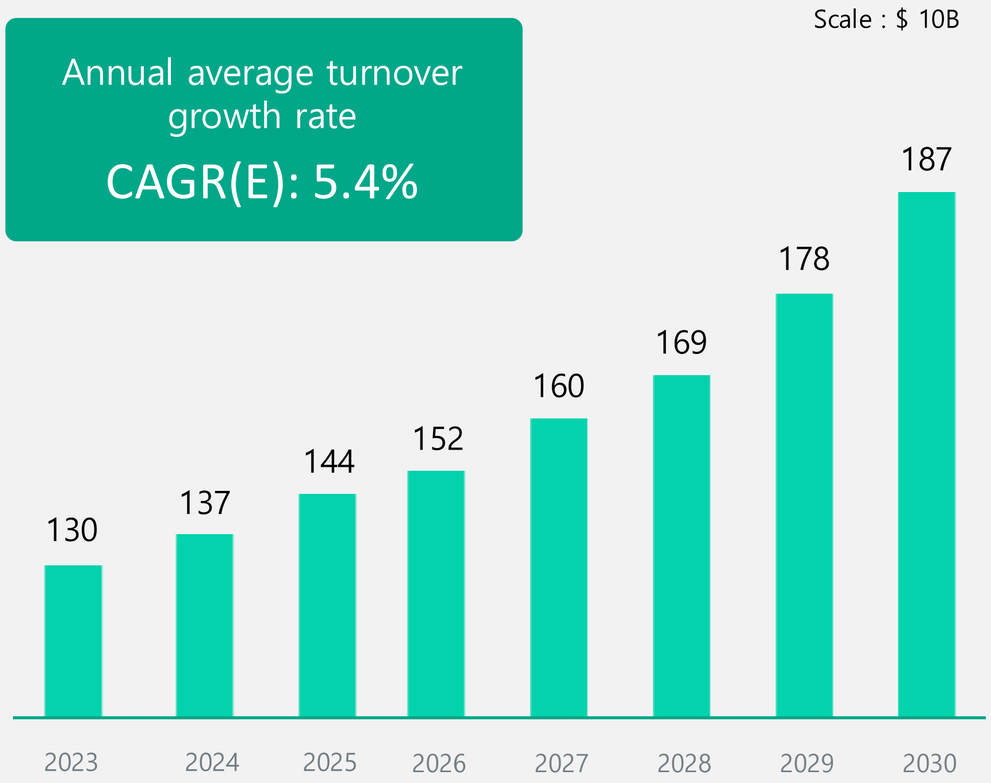
Market Size

Aetech addresses a rapidly expanding market with strong global demand for advanced waste management solutions. Positioned across both domestic and international segments, the company is aligned with accelerating sustainability and circular economy trends.

Global Waste Management Market

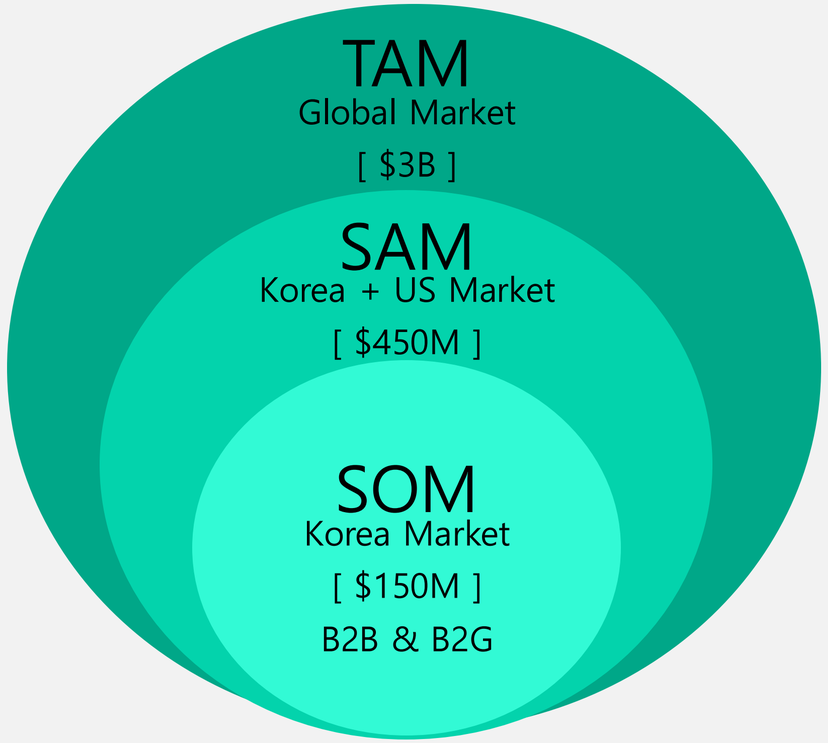
Annual average turnover growth rate

CAGR(E): 5.4%



Source : Grand View Research (2024)

AETECH's Addressable Market

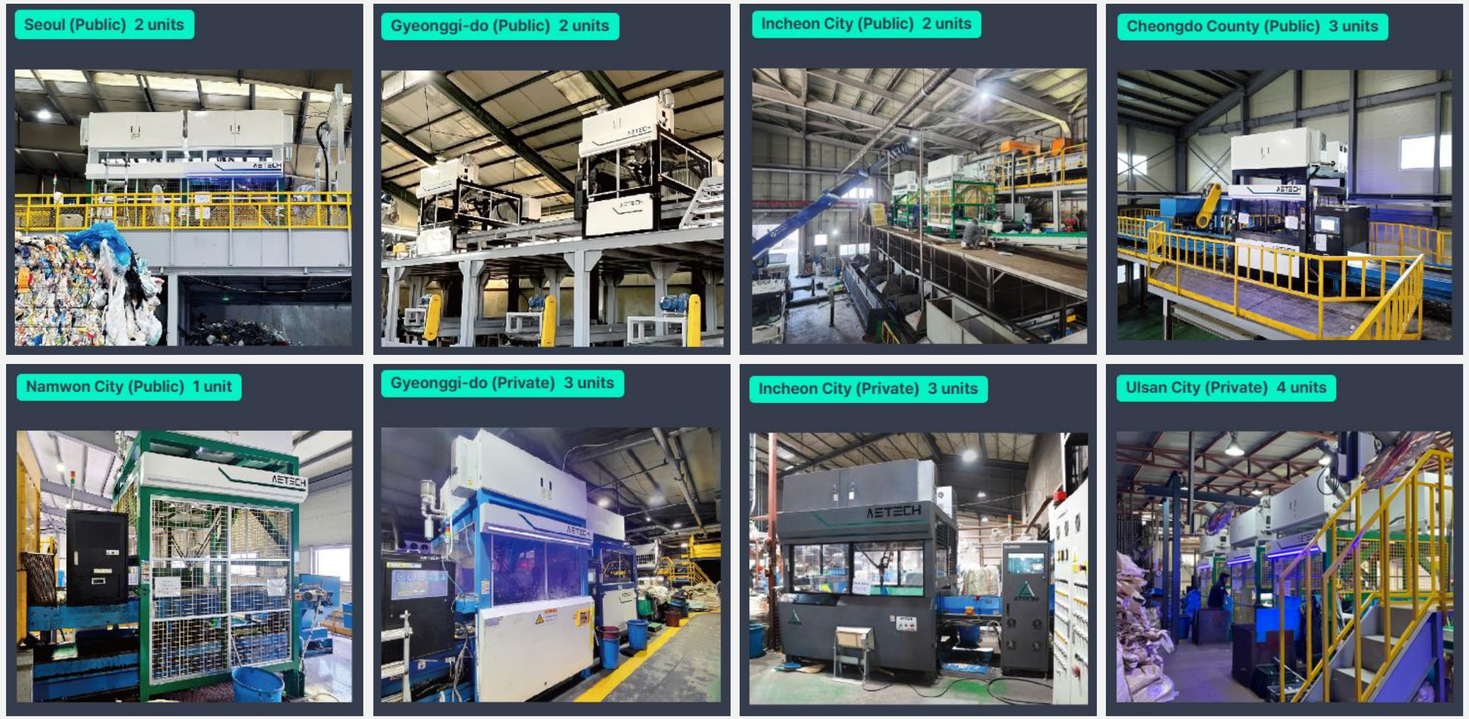


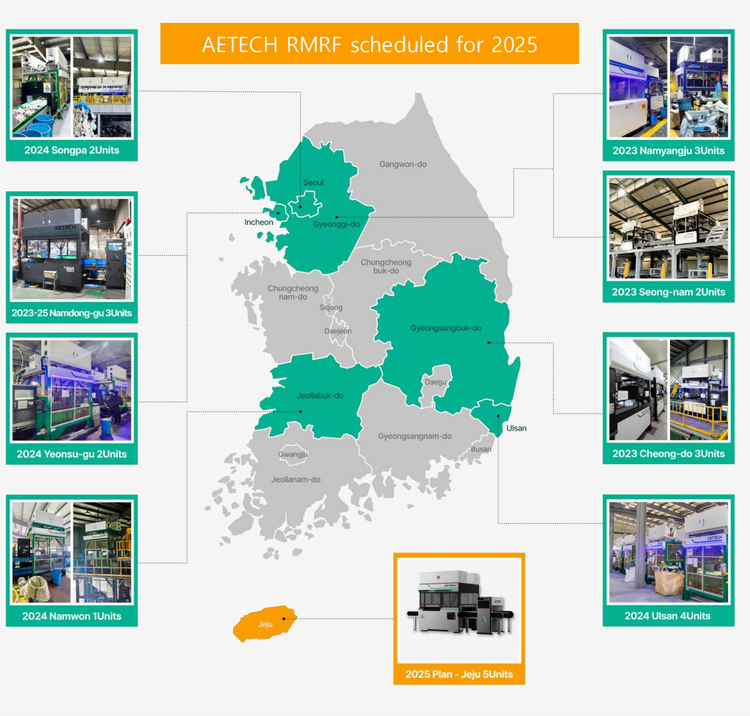
Source : The Brainy Insights (2024), MarketDataForecast (2024), Transparency Market Research (2024)

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AETECH Domestic Business Status

AETECH has sold 35 units nationwide so far, maintaining a repurchase rate of around 50%.
Some facilities have purchased up to three times, reflecting a clear trend in material recovery facilities to reduce manual labor and increase the number of robots in operation.





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Robot As A Service

Aetech, initially selling ATRON through one-time purchases under the RaaS model, plans to introduce lease and rental options with financial company partnerships this year, easing customer entry barriers.



HARDWARE

RaaS

Robot as a Service



SOFTWARE

Purchase Plan

- Initial payment for robot, facilities and setup is done at once
- Subscription for maintenance and software, construction costs are excluded
- The government support is applicable to 50% of cost

Lease Plan

Scheduled

- Monthly installment is paid for specified period and decide either retain or return
- Subscription for maintenance and software, construction costs are excluded
- 6 years of Lease

Rental Plan

Scheduled

- Renting the product with monthly payment for specified period and returning
- Subscription for maintenance and software, construction costs are excluded

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Export Strategy

Aetech targets both public and private MRFs in the U.S. through government PoC projects and direct robot sales. With a strong global IP portfolio and recognition from Edison Awards and WIPO, the company is well-positioned for international expansion.

Market Entry Strategy

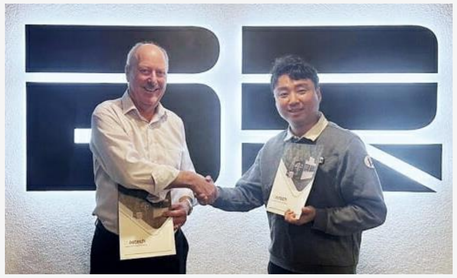
PoC project	PoC project for proving the performance
Distributor	Train distributor for maintenance
Investor	Secure more budget to expand

Registered 19 domestic technical patents
9 PCT international patent applications
15 international patent applications
8 foreign parent granted

Network Status



Distributor in Singapore
- Azault Pte Ltd.



Distributor in Australia
- Bliss & Reels



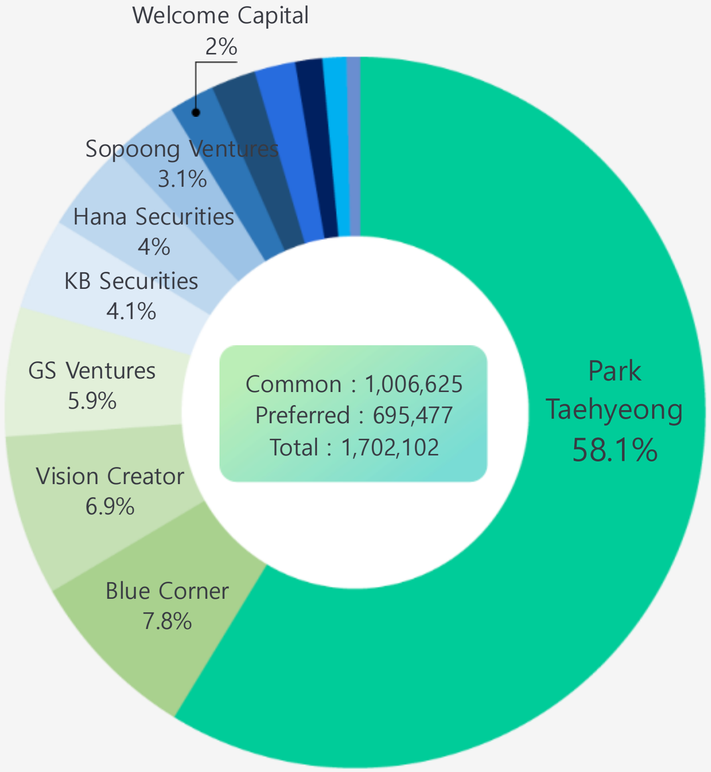
2024 MOU signed
with Son group In Vietnam



TOP 8 of the
WIPO Global Awards 2024

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Current Status of Aetech's Shares



[Summary of Capital Increases]

- July 30, 2024: Capital Increase by Issuance of New Shares, iBest Co., Ltd.
- June 26, 2024: Free Allocation of Shares, Capital Increased by 150%
- April 29, 2024: Stock Split (1:50)

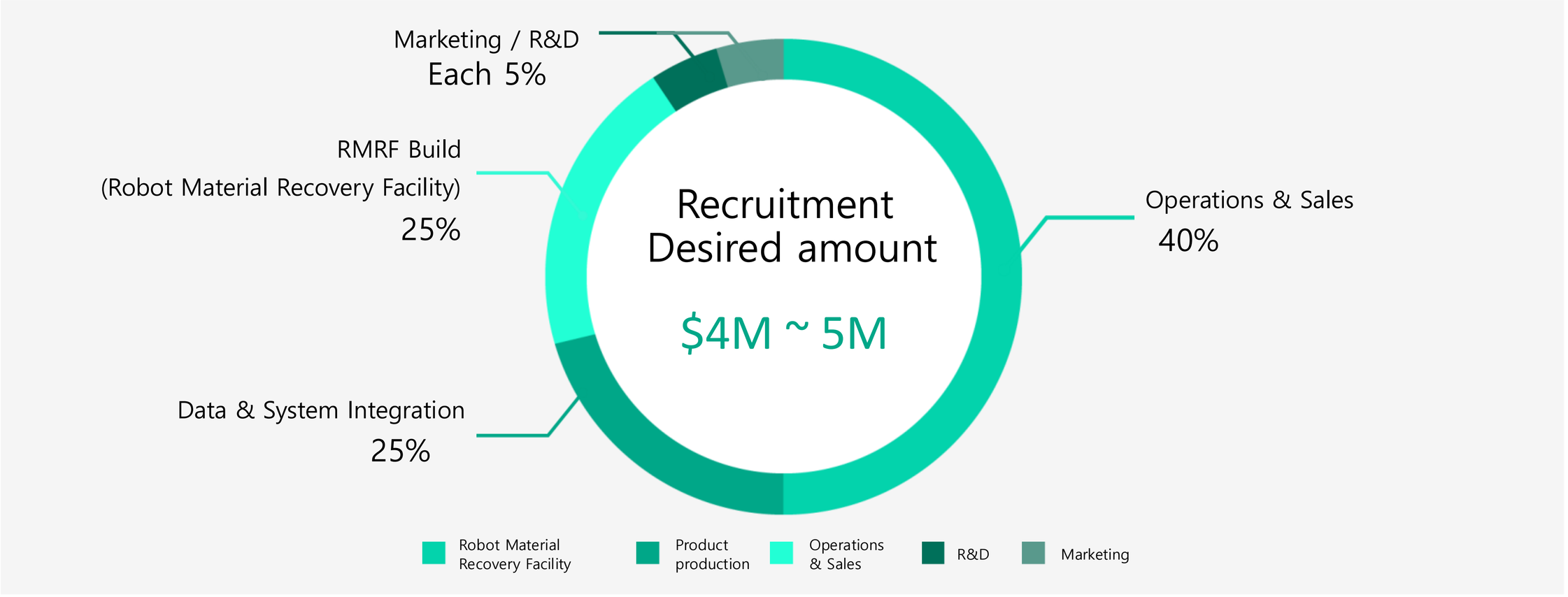
Shareholders	No. Stocks	Shareholding(%)
Park Taehyeong	989,000	58.1
Blue Corner	133,125	7.8
Vision Creator	116,875	6.9
GS Ventures	100,375	5.9
KB Securities	69,250	4.1
Hana Securities	68,375	4.0
Sopoong Ventures	52,875	3.1
Welcome Capital	34,625	2.0
LK Technical Investment	34,625	2.0
Muirwoods Ventures	31,500	1.9
PMF Investment	22,125	1.3
Oracle Fresh Fund	17,250	1.0
iBest Co., Ltd	16,852	1.0
Employees and minority shareholders	11,000	0.6
NH INVESTMENT	4,250	0.3
Total	1,702,102	100

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A Bridge Round Funding Ask & Use

Aetech is raising $4~5M to scale operations, expand manufacturing, and advance its Robotics Resource Recovery Centers.
The funding will also strengthen R&D and marketing, fueling sustainable growth and global expansion.

Series A Bridge round



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PLUG AND PLAY

STARTUP PRESENTATION

CARBON ENERGY

Carbon Energy

Carbon Energy captures CO2 through Direct Air Capture (DAC) technology, generating high-quality carbon credits for scalable carbon-removal markets.

#PNPTCSiliconValley

Join us at pnptc.com

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Carbon Energy Inc.

Keep your Business
CARBON FREE

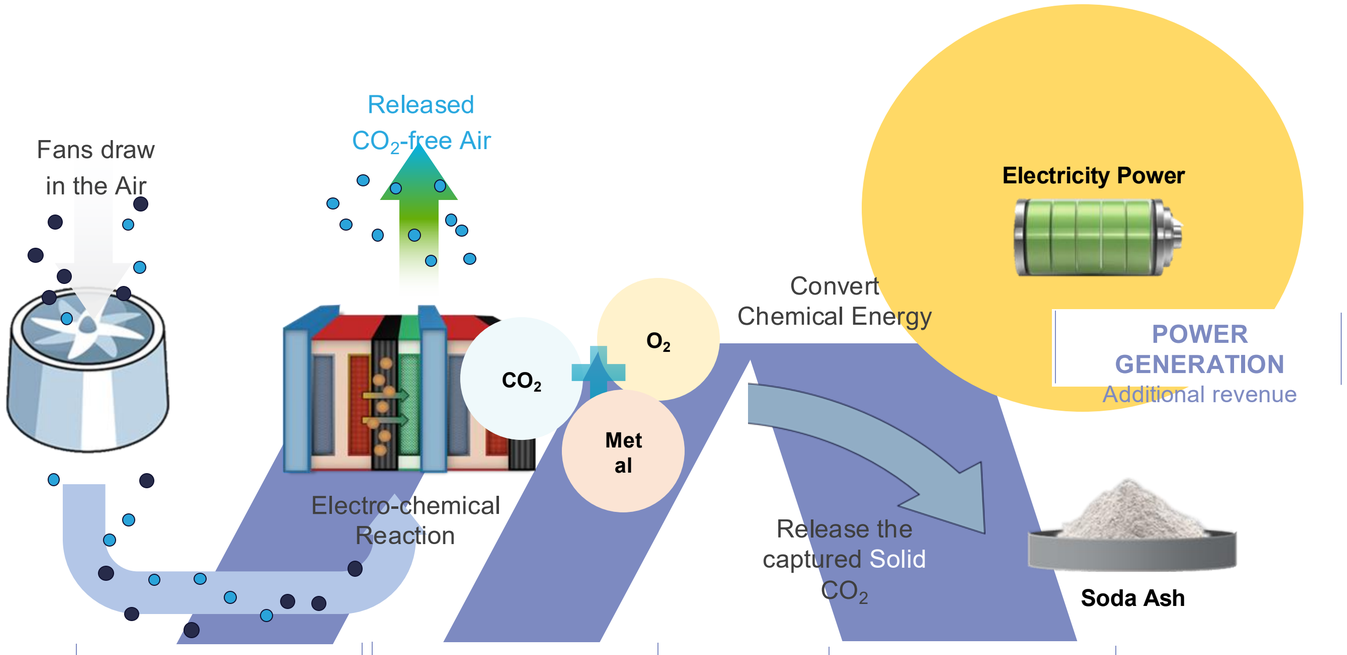


CARBON ENERGY

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Carbon capture into a profitable Electrochemical process

Electrochemical based Multi Out-Put DAC system

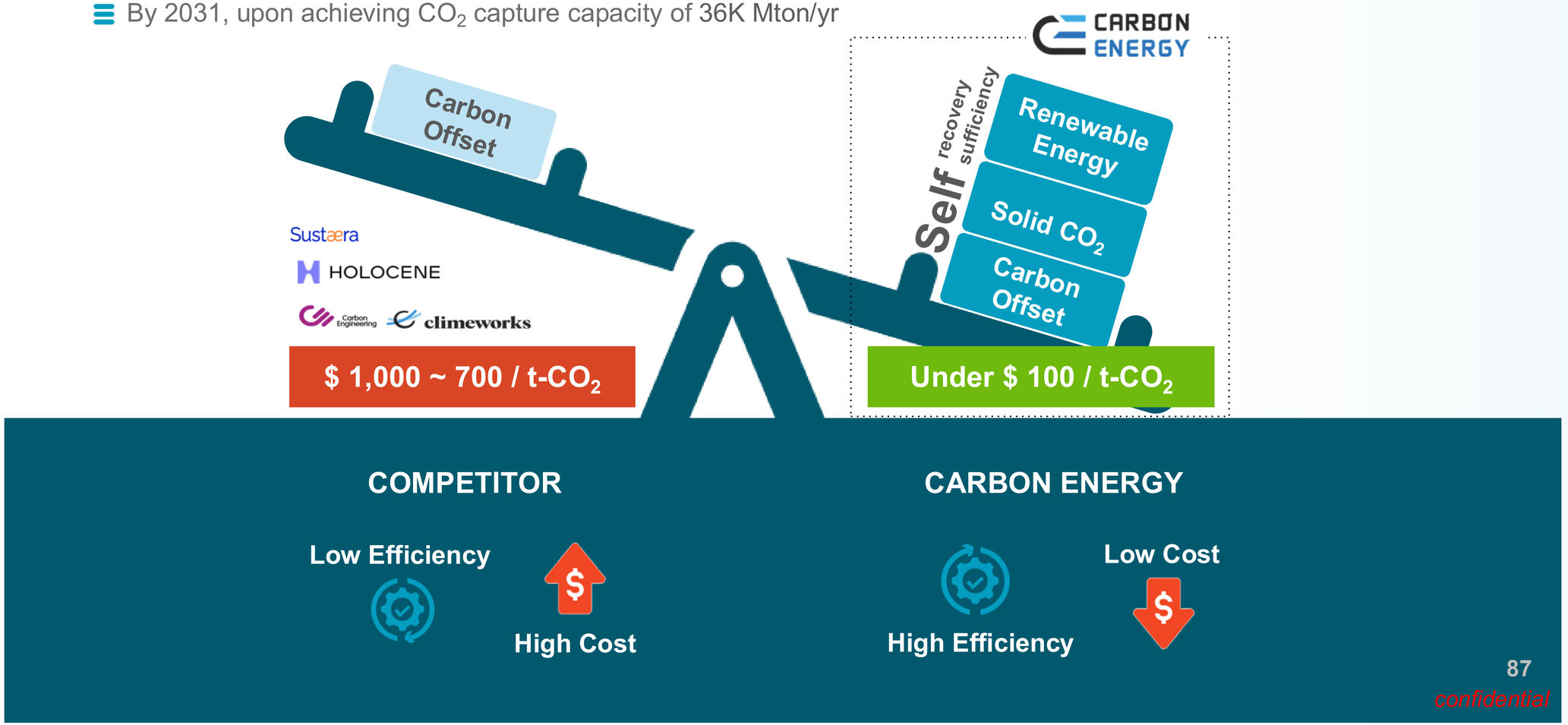




Capture and CCUS at once

Carbon Energy : CDR + RE + Carbon Mineral

- By 2031, upon achieving CO_2 capture capacity of 36K Mton/yr



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Technical Feasibility & Roadmap

- Proven prototype, clear scale-up path to commercial viability.

2025
R&D / Pilot



Cell/Stack
Commercial-level (0.1 ton/yr) performance/process optimization

2026
Construction



Annual 1-ton-scale container modularization
TRL 6

2027
Operating



10 ton/yr Plant Construction, Operation

2028
Delivery (MRV[1])

ISOMETRIC
puro.earth
Microsoft

Global TOP Tier Reliability Assessment CDR Spot Delivery

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Domestic(Korea) Traction & Validation

- Technology validated in Korea, now ready for international scale.

East Asia's only DAC CDR with established reliability.
Methodology certified/registered.
LCA assessment completed.

DNV

KCCI

For 10 t/yr scale
Securing a 1,000 m3 demonstration site in Korea Incheon





SK innovation

Domestic first DAC adoption
Domestic first futures contract promotion under discussion







HYUNDAI

Plant PoC under discussion

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Why DAC CDR Matters Now

- IPCC (Intergovernmental Panel on Climate Change)
  IEA (International Energy Agency)

IPCC — INTERGOVERNMENTAL PANEL ON climate change (WMO, UNEP)

IEA — International Energy Agency

remove **5 ~ 10 B tons of CO_2/yr by 2050** to stay below 1.5 °C

Major DAC Players

Microsoft, Frontier, Google, OXY, Shell, shopify

Leading multi year pre-purchases

빅테크 / 석유
DAC 대규모 투자

Global DAC Commercial Facility[2)]

Company	Est	Country	Capture	Capacity (Annual)
climeworks	2009	Swiss	Ammine Absorber	***4,000 ton (Orca)*** ***36,000 ton (Mammoth)***
1POINTFIVE	2020	USA	Ammine Absorber	500K ton **estimated** (pre - STRATOS)
OCTAVIA CARBON	2022	Kenya	Ammine Absorber	1,000 ton **estimated** (Hummingbird)
HEIMDAL	2020	USA	Adsorbent	5,000 ton (Project Bantam)
Heirloom	2020	USA	Limestone	1,000 ton (Tracy, First in US)
MISSION ZERO TECHNOLOGIES	2020	USA	Electrochemistry	250 ton estimated (DeepSky PF)

Progress to 2050

0.2624%

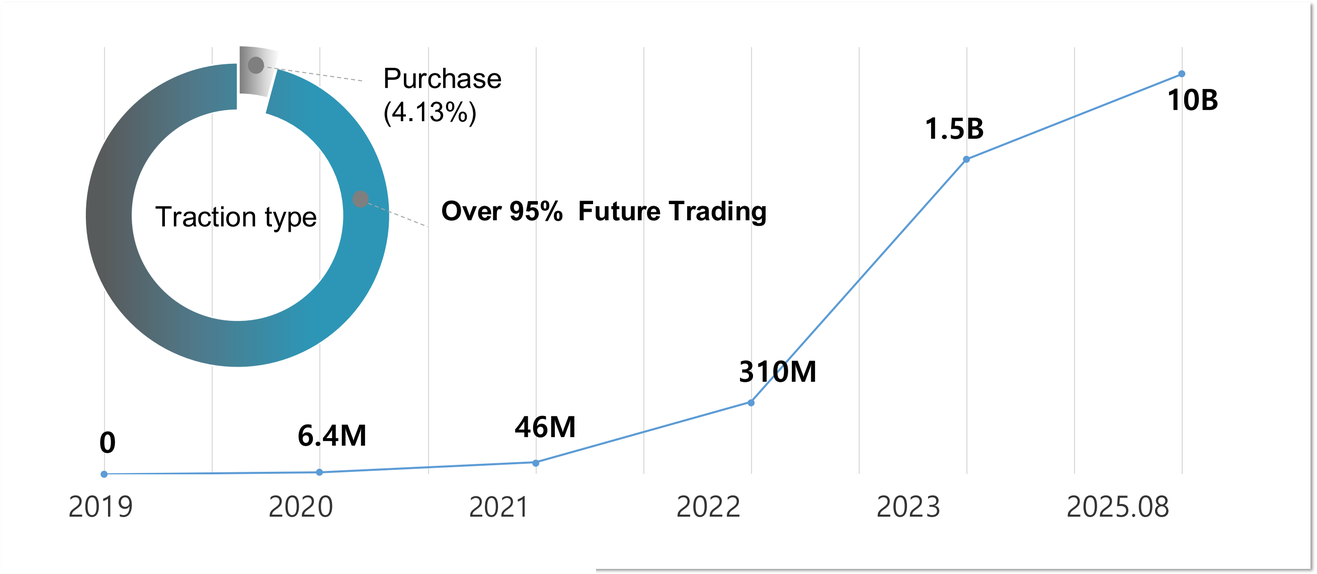
Carbon removal required to achieve carbon neutrality by 2050: 10 Gton[)]

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U.S. DAC CDR Market Landscape

800 M (2025) → $10 B (2030)

CDR Credit cumulative purchase[1)] ($)



Market transitions :

Federal subsidies →
Private offtake & state-level support

45Q

LOW CARBON FUEL STANDARD

climeworks

CarbonCapture

1POINTFIVE



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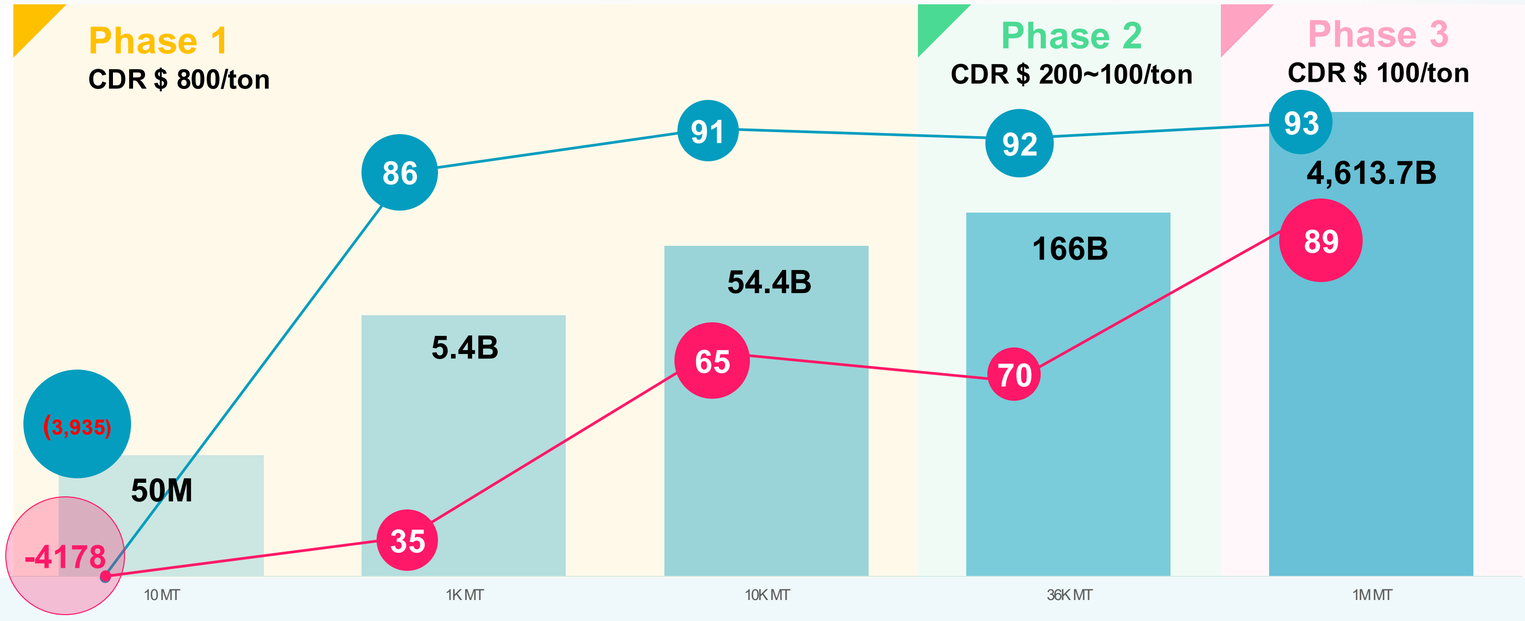
Economic Model & Profitability

- Carbon Energy achieves cost leadership through multi-output revenue and electrochemical efficiency.

Carbon Energy Plant Profitability Analysis

Traction

- MT : Metric ton
- Equal to 1 ton



EBITDA Margin

* unit : %

OP margin

* unit : %

CapEx	2B	56B	2,83.4B	750B	3,910B
Profit Capa Timing		Carbon Energy 1,000 MT	X 1,000		Competition 1M MT

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Applicant/Team

Professional Credentials + Climate Industry Experts

Siyoung Na
CEO/Applicant



EDU · M.S. in Chemistry, Sungkyunkwan Univ.

EXP
- 22 Daejeon Youth Startup School
- 23 Innovative Startup
- 23 Shinhan Squarebridge
- 23 Daegu Samsung Electronics C-Lab
- 23 Daejeon Social Impact Challengers
- 23 KOGAS Energy Startup program

Ildoo Kim
Advisor



EDU · Ph.D. in Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST)

EXP
- Postdoctoral Fellow, MIT
- Chair Professor, Dept. of Materials Science and Engineering, KAIST
- Fellow Member of The Korea Academy of Science and Technology

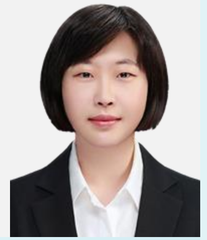
Sarah Jung
CBO
Global Expansion



EDU · B.A. in Psychological Brain Science, Boston Univ.

EXP
- 500 Global investor relations
- CISS senior
- Hwadong International Global marketer

Sujin Hong
Research Leader



EDU
- Ph.D. in Gwangju Institute of Science and Technology (GIST)
- Post-Doc. In University of California, Los Angeles (UCLA)

EXP · CO_2 mineralization R&D

Hyunbae Park
System Senior Engineer



EDU · B.S. in Material Engineering, Kongju Univ.

EXP
- BOP demonstration and fuel cell commercialization in HnPower
- System development for P2G (Power to Gas) and fuel cell in GPhilos

Dongseok Kim
Catal./Electrode Researcher



EDU · Ph.D. in Semiconductor and Display Engineering, Wonkwang Univ.

EXP · Anode materials for secondary batteries

Yejin Han
Researcher



EDU · M.S. in Chemical Engineering, Yonsei Univ.

Jaehyeok Lee
Researcher



EDU · M.S. in Nanoscience & Engineering, University of Science and Technology (UST)

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U.S. Go-to-Market & Global Validation

- Technology validated in Korea, Japan, US, Europe

Capable of Simultaneous Capture+ Conversion (8 Companies Worldwide)

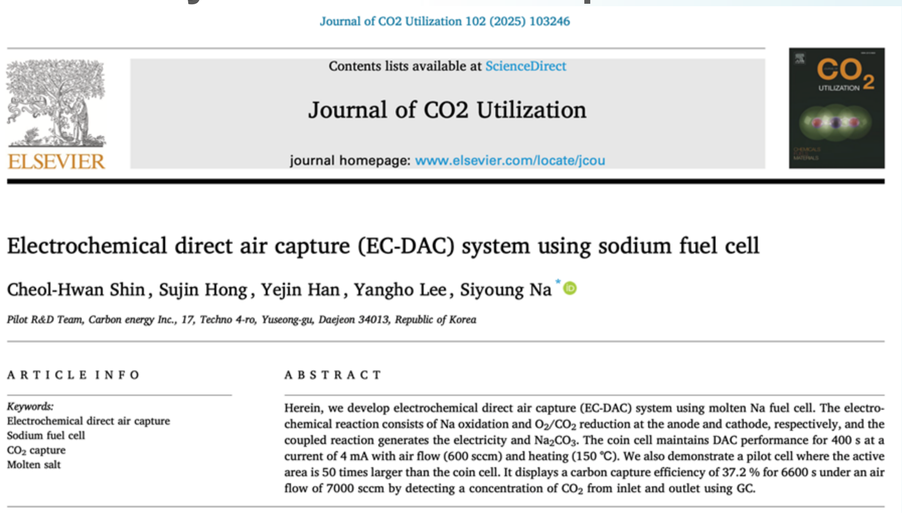


Table 4: Direct storage DAC company list and technology notes

Company Name	HQ Location	Capture Medium Type	Other Notes
BluSky Carbon	Canada	N/A	Powered by surplus energy from integrated biomass pyrolysis
Capture6	U.S.	Liquid	Can integrate with brine and wastewater processes
Carbon Energy	South Korea	N/A	Leverages electrochemistry to produce solid carbonates
Equatic	U.S.	Liquid	Generated (bi)carbonates deposited in ocean
Holy Grail	U.S.	Liquid	Targeting aboveground carbonate storage
Karbonetiq	U.S.	Solid	Passive alkaline feedstock aeration contactor enabling carbonation
Thalo Labs	U.S.	Solid	Capture from indoor air; storing directly in solid medium
Travertine	U.S.	Liquid	Co-production of critical minerals, hydrogen, and sulfuric acid

January 2025: Listed in U.S. Department of Energy (DOE) report as Korea's first electrochemical method

January 2025: EU Journal published



Journal of CO2 Utilization 102 (2025) 103246

Contents lists available at ScienceDirect

Journal of CO2 Utilization

journal homepage: www.elsevier.com/locate/jcou

ELSEVIER

Electrochemical direct air capture (EC-DAC) system using sodium fuel cell

Cheol-Hwan Shin, Sujin Hong, Yejin Han, Yangho Lee, Siyoung Na *

Pilot R&D Team, Carbon energy Inc., 17, Techno 4-ro, Yuseong-gu, Daejeon 34013, Republic of Korea

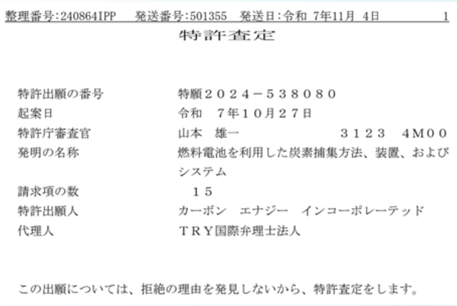
ARTICLE INFO

Keywords:
Electrochemical direct air capture
Sodium fuel cell
CO_2 capture
Molten salt

ABSTRACT

Herein, we develop electrochemical direct air capture (EC-DAC) system using molten Na fuel cell. The electrochemical reaction consists of Na oxidation and O_2/CO_2 reduction at the anode and cathode, respectively, and the coupled reaction generates the electricity and Na_2CO_3. The coin cell maintains DAC performance for 400 s at a current of 4 mA with air flow (600 sccm) and heating (150 °C). We also demonstrate a pilot cell where the active area is 50 times larger than the coin cell. It displays a carbon capture efficiency of 37.2 % for 6600 s under an air flow of 7000 sccm by detecting a concentration of CO_2 from inlet and outlet using GC.

Patents : USA, Japan



整理番号:240864IPP　発送番号:501355　発送日:令和 7年11月 4日　1

特許査定

特許出願の番号	特願２０２４－５３８０８０
起案日	令和　７年１０月２７日
特許庁審査官	山本　雄一　３１２３　４M００
発明の名称	燃料電池を利用した炭素捕集方法、装置、およびシステム
請求項の数	１５
特許出願人	カーボン　エナジー　インコーポレーテッド
代理人	ＴＲＹ国際弁理士法人

この出願については、拒絶の理由を発見しないから、特許査定をします。

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ASK : Partnership & Collaboration Opportunities

- Let’s co-build a verified DAC supply chain that delivers measurable climate impact for the U.S.

10 t CDR Pre-purchase



- **Under $ 100/t**
- **Total Cost : Under $1,000**
- World-class reliability
- Delivery date: 2028
- **Low cost, Opportunity** to verify New business/DAC
- Expanding your Net-Zero Strategy/Portfolio

Fundraising



- Latest fundraising $ 2.7M in Korea
- CAPEX/R&D funding secured for 10-ton demonstration project
- Low corporate valuation
- Targeting small-scale investments of less than $500,000

Accelerating/ PoC

Breakthrough Energy

THIRD DERIVATIVE

Elemental Impact

- US Climate tech Accelerating
- High growth potential
- Ensuring regional diversity
- Applying for BEV
- Guidance to US market, join DAC community

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Less Carbon, More Energy



PLUG AND PLAY

STARTUP PRESENTATION

TURBINE CREW

Turbine Crew

Turbine Crew provides AI-driven drone crop monitoring that delivers real-time field insights, improves productivity, and supports sustainable farming.

#PNPTCSiliconValley

Join us at pnptc.com

TURBINE CREW

: to Improve Agricultural Productivity and Optimize Energy Use

TlatFarm X ECO Clebine

At Turbinecrew, we are working to make energy and farming better for the future.

We will create a sustainable earth by storing energy from solar power and small wind power in the drone waste battery ESS system.



What We Do

Empowering a sustainable Earth through ESG and eco-friendly energy.

Our Tech

- Smart wind/solar integrated energy systems
- Climate-predictive control systems using AI
- Energy storage systems for drones
- Forecasting & monitoring of wind energy

We create it together

- Management Team
- Hardware Team
- Software Team
- Design Team

A Team of 13 Employess, Each with Own Area of Expertise

Major Patents

49 cases

(including application registration)

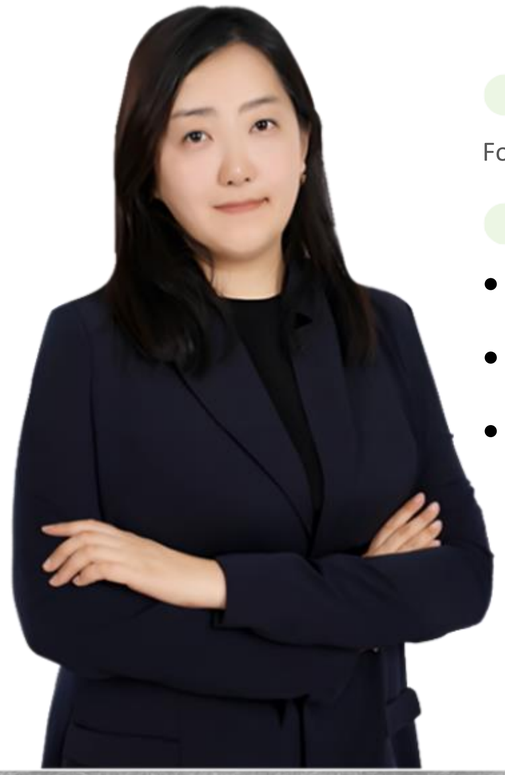


Our Team

Turbine Crew is a team of 13 experts in software, hardware, design, and management, shaping the future of energy and agriculture.

CEO Kieun Jeon

B.S. in Engineering, Konkuk University



Experience

Former employee, Kolon Global

Achievements

- Led large-scale wind power licensing project
- Selected for Ministry of Foreign Affairs “Maker Star” program
- Holder of 31 patents

Software

Researcher
Bin Yu



Researcher
Junseo Lee



Researcher
Yeongjae Lee



Researcher
Kyungmin Lee

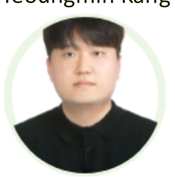


Hardware

Researcher
Sungyeon Park



Researcher
Yeoungmin Kang



Researcher
Hanbit Yong



Design

Researcher
Eunji Park



Researcher
Seyong Kim



Management

Researcher
Hyunggi Bang



Researcher
Jinjoo Kim



Researcher
Heesung Kim



What problems do we solve?

1

Many farmers still depend on experience-based farming without real-time data, which leads to unstable yields and more waste.

2

The lack of smart infrastructure and automation in rural areas contributes to rising labor shortages and inefficient field operations.

So, the first step was to build

Smart Pole



Maximize agricultural productivity and efficiency

Solution

TlatFarm - TECHNICAL FLOW

TECHNICAL PROCESS



- Integration of Renewable Energy from Wind and Solar Power
- Environmental Data Collection Using Smart Sensors

Energy, Data Transmission



- Drone control, energy forecasting
- Data integration and display



TlatFarm
TB crew's smart farm platform



- Optimized flight paths for efficient field coverage
- Integrated agricultural payload for spraying and sensing
- Autonomous drone operation with wireless charging system

Sustainable Infrastructure Strategy Through Technology Integration

Solution

TlatFarm



From Global MOUs to B2B & B2G Strategies



베트남 상공부 납품
베트남 발전소에서 이미 제품 사용중



한전과 함께 해외기업 영업
인도네시아 교수님과 협업진행



CES
미국CES혁신상 수상



GITEX AI EVERYTHING
세미파이널진출 슈퍼노바 아부다비 초청장



인도네시아 데모데이2등
인도네시아 투자사 미팅중

B2B strategy (for private farms and companies)

Delivery method

Hardware (smart pole+drone) sales
+
SaaS (Growth Forecasting, Energy Analysis) Subscription

Profit structure

- Hardware revenue
- Annual subscription service usage fee
- Maintenance

Advantages

Fast adoption, high revenue turnover
Advantage for overseas expansion and demonstration business expansion

B2G strategy (for public institutions and local governments)

Delivery method

- Open field Smart Farm Infrastructure Construction Project Received
- Provides an integrated power/data management platform

Profit structure

- Government and local government order revenue
- Long-term maintenance contracts
- Technical support/grant revenue through public data collaboration

Advantages

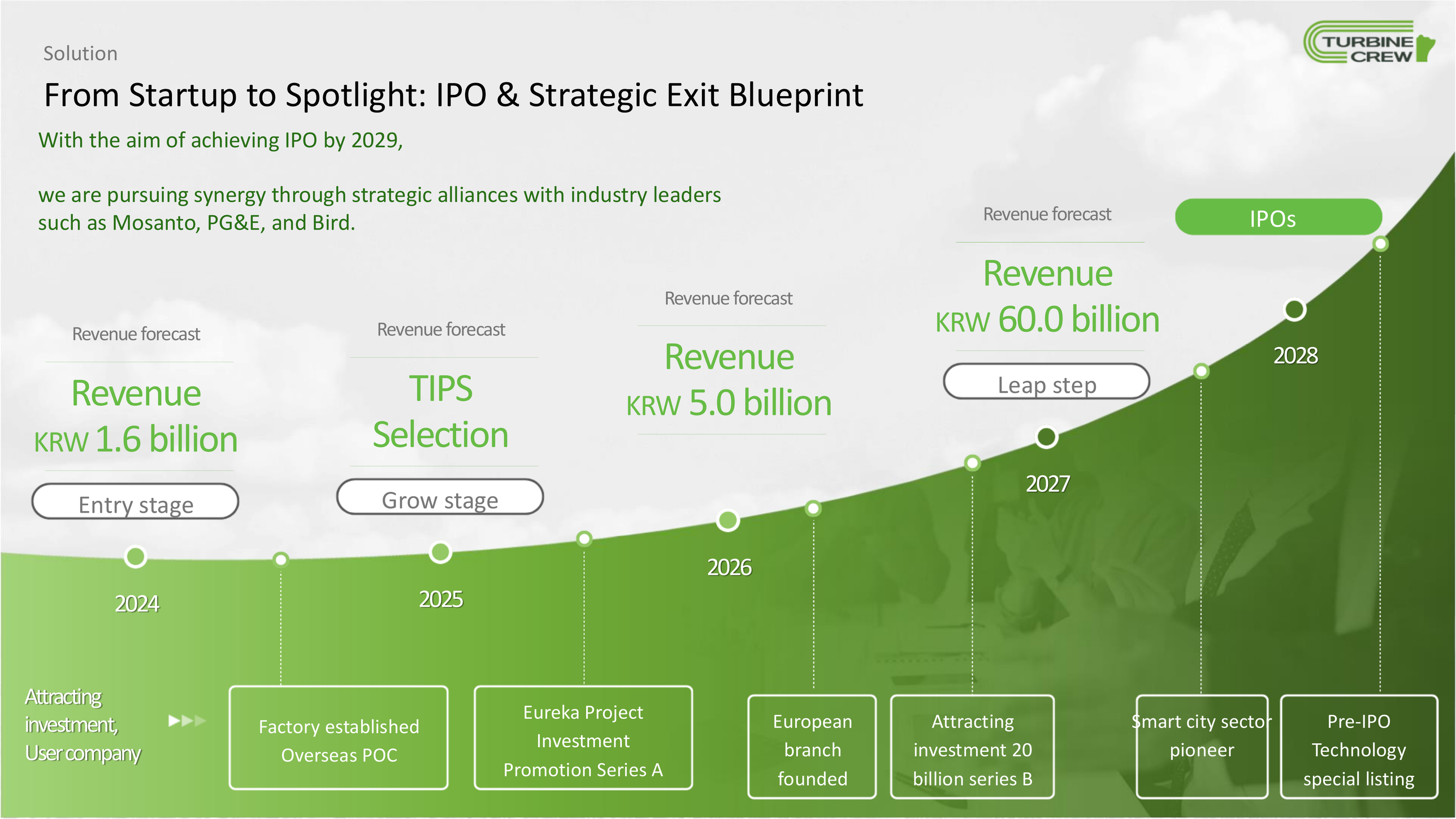
Linking policies and securing trust
Long-term revenue models and references available

Solution

From Startup to Spotlight: IPO & Strategic Exit Blueprint

With the aim of achieving IPO by 2029,

we are pursuing synergy through strategic alliances with industry leaders such as Mosanto, PG&E, and Bird.



Thank you

Turbinecrew connects **two big industries** — energy and agriculture.

We bring smart, simple, and scalable solutions

for a better, cleaner world



CEO Kieun Jeon
+82 10 2556 4465
ceo@turbinecrew.co.kr

PLUG AND PLAY

STARTUP PRESENTATION

Tilda

Tilda

Tilda optimizes ESS and energy assets with AI-driven forecasting and control, helping operators reduce energy costs and maximize revenue.

#PNPTCSiliconValley

Join us at pnptc.com

ArgMax Prophet & Power

AI for Smarter Energy Decisions

Tilda - AI company specializing in energy prediction & optimization

ArgMax Suite: Forecasting (Prophet) + Real-Time Optimization (Power)

Value: Reducing energy costs, boosting ESS ROI, and enabling grid stability

Tilda

The Problem: Energy Markets Are Volatile and Hard to Optimize

- Users face highly variable electricity prices and increasing complexity of Distributed Energy Resources (DERs).
- Simple rule-based ESS control wastes significant financial opportunities and increases operational costs.
- C&I customers cannot react fast enough to dynamic market and grid signals, leaving money on the table.
- The rise of renewables (solar, wind) adds more variability, making manual control completely ineffective.

The Opportunity: A Booming U.S. Market

>30%

Annual Growth

Of U.S. C&I behind-the-meter ESS installations

Key Market Drivers:

- ✓ FERC Order 841 enables new ESS revenue in wholesale energy markets.
- ✓ IRA incentives are driving rapid adoption of solar + storage systems.
- ✓ Clear demand exists for real-time AI to maximize energy economics and ROI.

Technical Architecture: Forecast + Optimization = Maximum Value

AI Forecasting Model (Prophet)

Predicts critical variables:

- Building/C&I energy demand
- Solar & wind generation (using radiation + weather)
- Volatile electricity and commodity prices

AI Decision Model (Power)

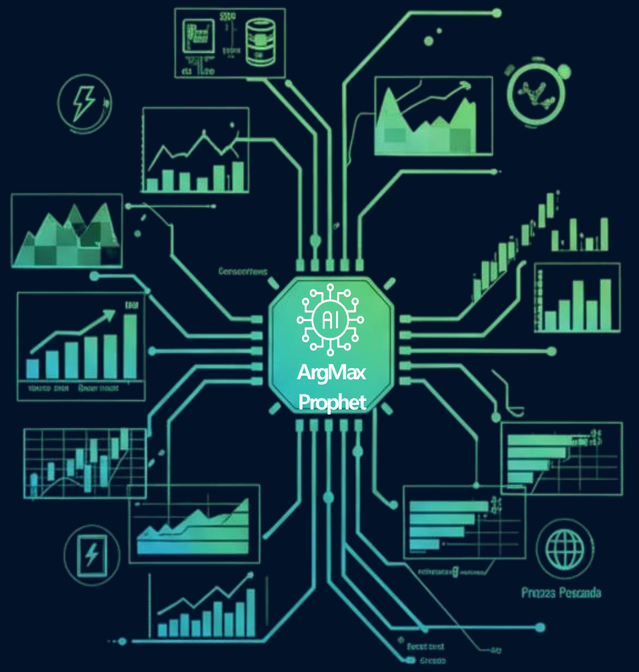
Searches optimal actions:

- ESS charge/discharge strategy
- Automated load curtailment
- Market participation & bidding

Real-time closed-loop updates for continuous improvement. **Flexible integration** with any PCS, EMS, and market systems.

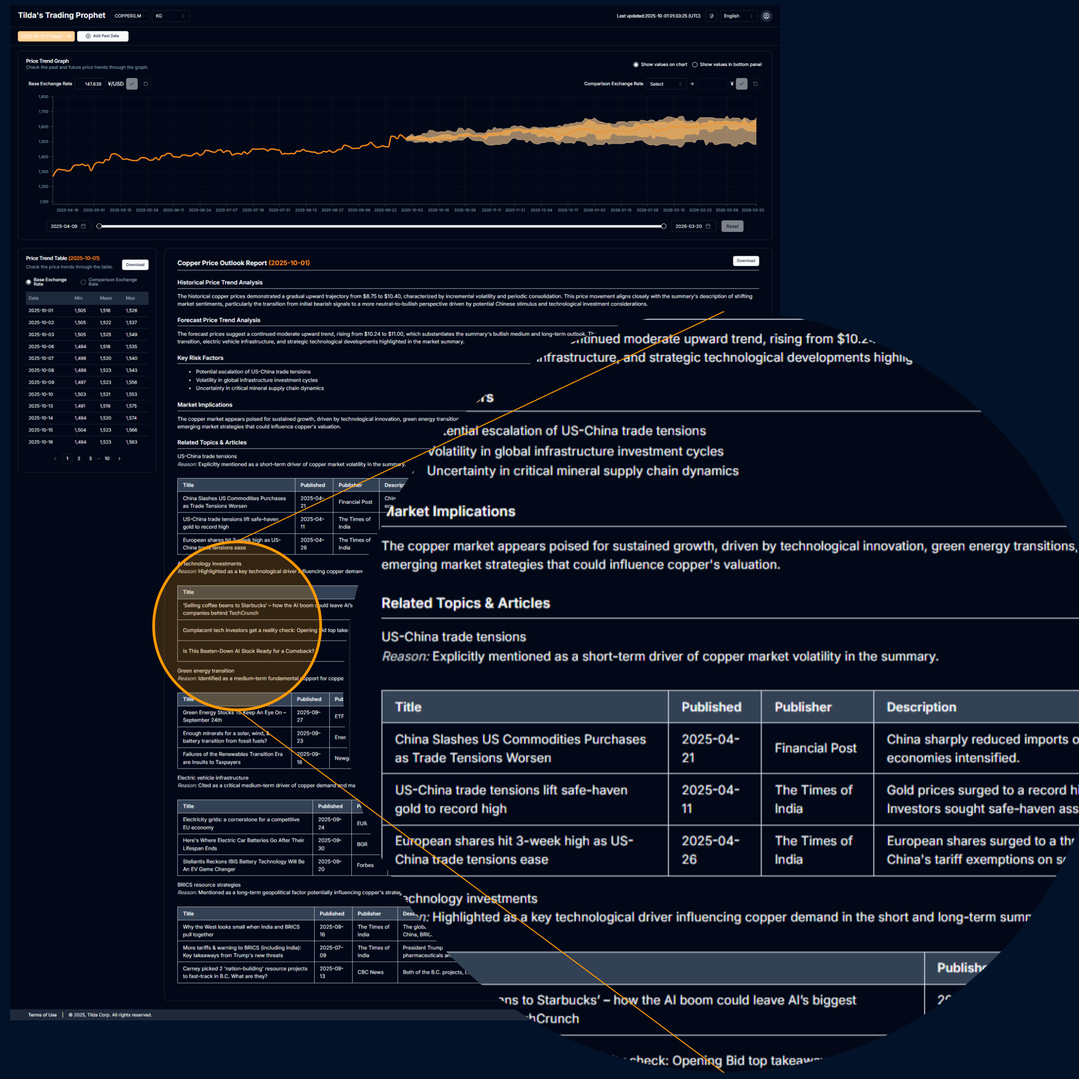
ArgMax Prophet: High-Accuracy Forecasting

- Forecasts load patterns for C&I and households.
- Predicts solar/wind generation using radiation & weather data.
- Electricity price forecasting enhanced with real-time news signals.
- Technology extends to commodities: metals, agri, indices.
- Used by manufacturers, traders, and global firms to act faster.



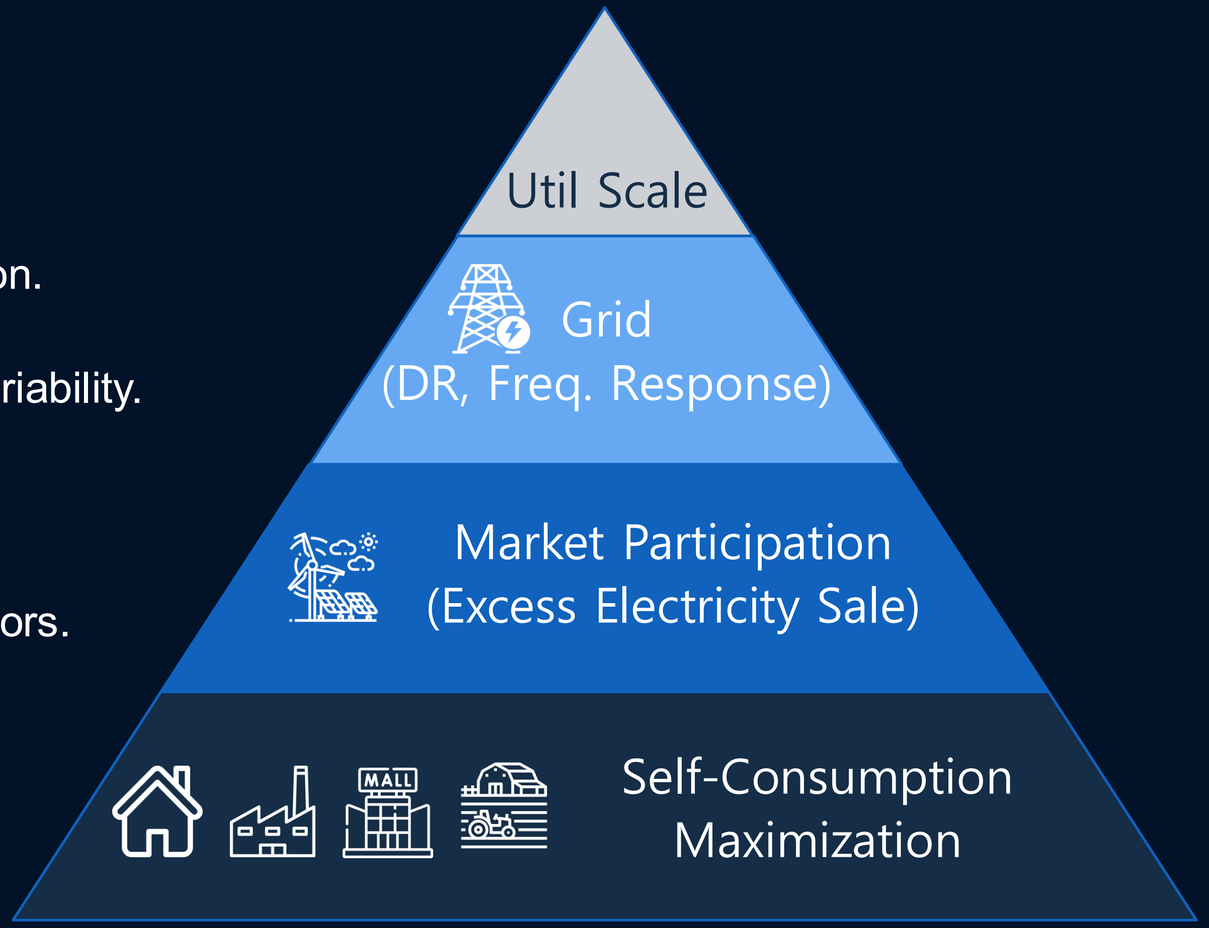
Use Case Example: CME Copper Price Prediction

- Proves model accuracy on high-volatility instruments.
- Generates human-readable “reasoning reports” explaining drivers.
- Helps trading clients respond earlier to global events.
- Supports risk management, hedging, and procurement timing.



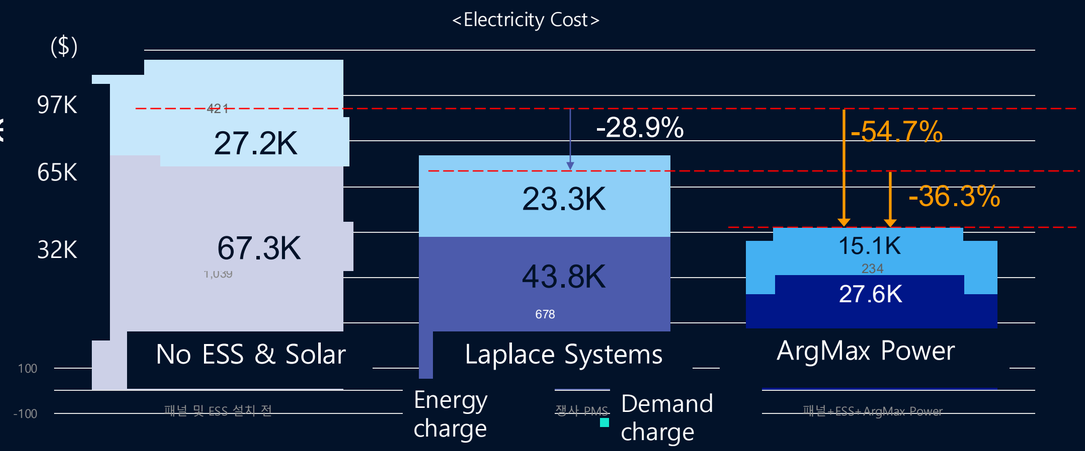
ArgMax Power: Real-Time ESS Optimization

- Controls charge/discharge, curtailment, and market participation.
- Responds instantly to price spikes, load changes, and solar variability.
- Achieves >20% cost savings vs. rule-based BMS/PMS.
- Plug-in control layer compatible with most ESS hardware vendors.



Use Case Example: Okayama Factory (Japan)

- **Site:** Manufacturing plant in Okayama, Japan.
- **Challenge:** High demand charges and exposure to volatile energy prices.
- **Solution:** ArgMax Power deployed to optimize existing ESS hardware
- **Result:** Achieved >30% additional savings compared to their previous rule-based system.
- **Key Takeaway:** Demonstrates proven commercial performance in a live, complex industrial environment.



U.S. Go-To-Market Strategy: Partnerships & Focus



Target Customers:

C&I building owners, project aggregators, and retail energy providers.



Channel Partners:

Partnerships with EPCs, ESS manufacturers, and systems integrators.



Core Value Proposition:

Reduce demand charges + Maximize wholesale market revenues. Scalable SaaS model.

Why Tilda? Differentiation That Delivers Value

- **Unique AI Stack:** The only solution combining news-aware forecasting with real-time optimization.
- **Proven Performance:** Commercially proven and deployed in live, operational ESS environments.
- **Fast Integration:** Designed for rapid, plug-in integration with existing infrastructure and hardware.
- **Measurable ROI:** Delivers a clear and measurable energy cost reduction and revenue uplift.

About Tilda: Leadership Team & Traction

AI Company Building Predictive & Prescriptive Energy Systems

- Founded to solve complex industrial and energy optimization problems.
- Deploying AI in manufacturing, logistics, and energy sectors.
- **ArgMax Suite** is the core product for ESS, DER, and commodities.
- Currently operating in **Japan & Korea**, conducting PoC in **Germany, Luxembourg, and LATAM**, and strategically expanding to the U.S.

Core Leadership Team

Ji Ryang Chung (CEO, AI Architect)
- Samsung Mobile (Principal Engineer)
- Ph.D. in Computer Science (Texas A&M)

Min Jun Kim (CTO, AI Architect)
- Samsung Mobile (Principal Engineer)
- Ph.D. Candidate in Computer Science (Sogang Univ.)

Ki Nam Han (Tilda Japan CEO, Energy Strategy)
- LG Electronics (Solar Sales Manager)
- B.S. in Electrical Engineering (Chungbuk Univ.)

Key Investors / Partners

Seed: Bluepoint Partners

Pre-A: Woori Venture Partners

Japan Sales: THINKi Inc.

Let’s Build the Future of Intelligent Energy

AI-powered ESS control to cut costs and maximize revenue. Ideal for C&I, retail energy providers, and grid-interactive assets.

Strategic Partners

Enterprise deployment & domain expertise

Early Adopters / Investors

Fueling U.S. market expansion

Visit us at: https://tildacorp.ai | Ji Ryang Chung at jr.chung@tilda.co.kr

PLUG AND PLAY

STARTUP PRESENTATION

Light bridge
Green Hydrogen Energy

Light bridge

Light bridge develops high-efficiency PEM electrolyzers that produce clean hydrogen at scale, enabling industrial, mobility, and energy-sector decarbonization.

#PNPTCSiliconValley

Join us at pnptc.com


Light bridge
Green Hydrogen Energy
We aim to drive
carbon-free
sustainable economic growth

When hydrogen runs out



A truck on highway
Warning light ON

No Hydrogen at station

This is reality...

Hydrogen Anywhere Anytime

Light bridge
Green Hydrogen Energy

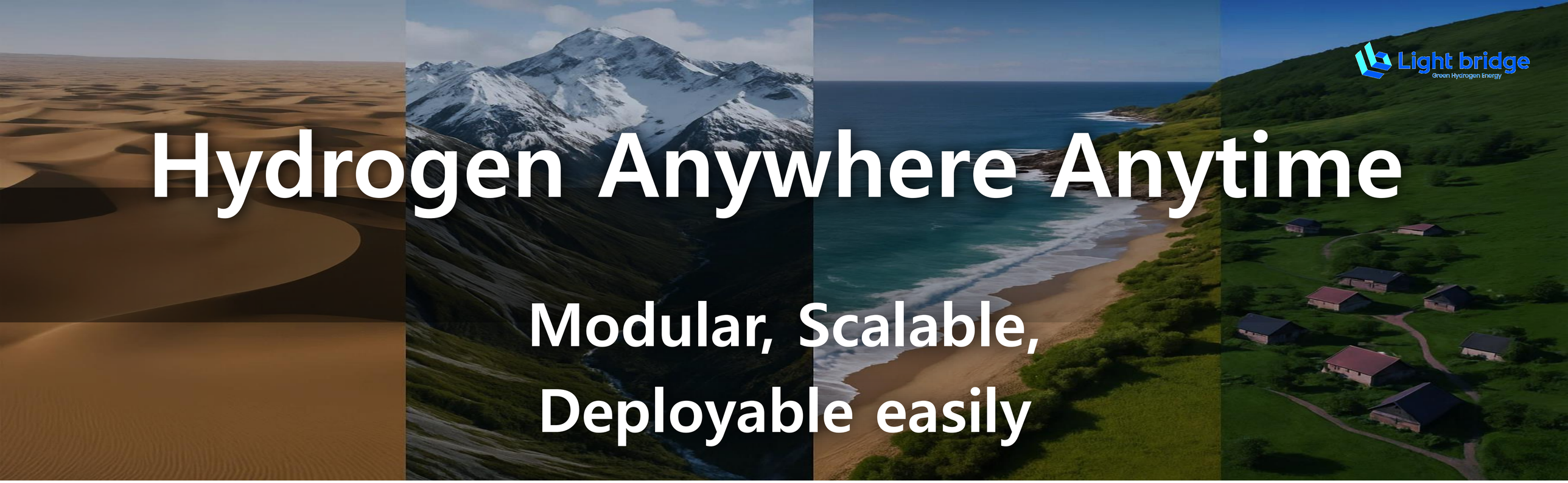
H-Bridge

Onsite Hydrogen station

Always available 24/7

Water + Electricity = Fuel





Hydrogen Anywhere Anytime

Modular, Scalable,
Deployable easily

Traditional Station

Heavy Construction

Tube Trailers

High Cost

H-Bridge

Basic Construction

No Tube Trailers

Cost Saving



Reference

Light bridge
Green Hydrogen Energy

Signed USD 1.8M (1.35MW) PEM stack agreement with Clearsun Power in California

CLEARSUN POWER

Running green hydrogen demo site with Hyundai Rotem

HYUNDAI Rotem

Providing onsite hydrogen infrastructure solution for Government

광양시 GWANG YANG CITY

부안군 BUAN-GUN

Light bridge
Green Hydrogen Energy

We can build future Together

Toward Zero-Carbon Mobility

Platform enabling hydrogen fleets

We can make carbon free mobility a reality



Light bridge

Green Hydrogen Energy

Thank you

PLUG AND PLAY

STARTUP PRESENTATION



ECOPEACE

Ecopeace deploys autonomous AI and solar-powered water robots that remove pollutants convert water data into predictive environmental insights.

#PNPTCSiliconValley

Join us at pnptc.com

ECOPEACE

AI-Powered Water Intelligence

Solving water challenges through technology,
empowering every community.

Jony Jung | Director

Problem

The Water Crisis Demands Innovation

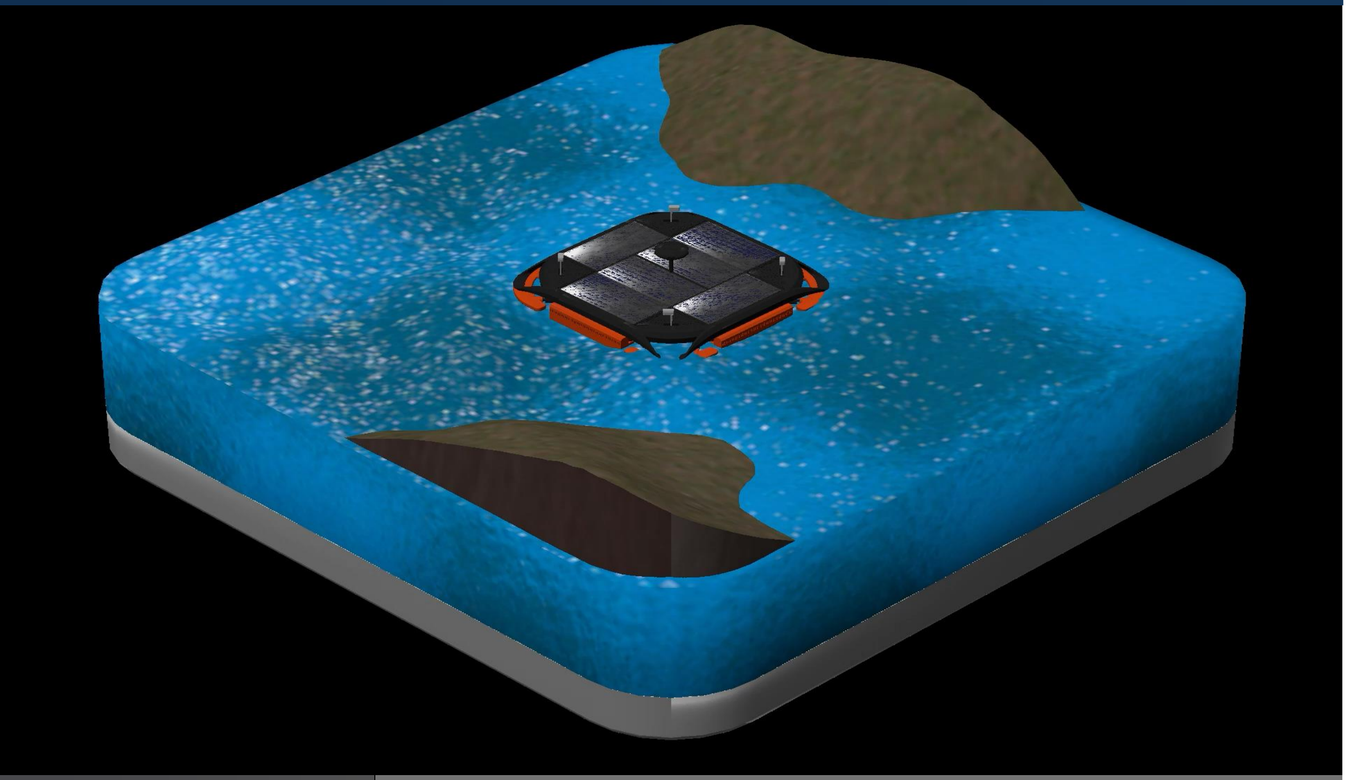


We can only utilize

<1%

of water resources

The Solution



ECOBOT | **ECOBOT** combines robotics, AI, sensors, and filtration to clean water and deliver intelligence for utilities and cities.

14
Patents

Real-Time Water
Data

Autonomous
Cleaning

Phase 1	Phase 2
Water Pollutant Removal	Data Collection & Processing For Water Management

Core Technologies for Water Intelligence

- **Robotics**
  Autonomous water robots designed for water intelligence
- **Self-Driving**
  GPS & AI-based autonomous navigation and route optimization
- **Artificial Intelligence**
  Real-time detection and automated pollutant response
- **Sensor Fusion**
  Multi-sensor integration for precise water condition monitoring
- **Data & Analytics**
  Collecting and analyzing water data for predictive management
- **Digital Twin**
  Virtual simulation for proactive water-quality management
- **Filtration**
  Patented purification technology for oil, algae, and waste removal
- **Renewable Energy**
  Solar-powered, sustainable operation

Market Size

Water Management Market - Global

The Market size
to reach approx.

US$ 54 Bn by 2033

Phase 1

Water Pollutant Removal

Phase 2

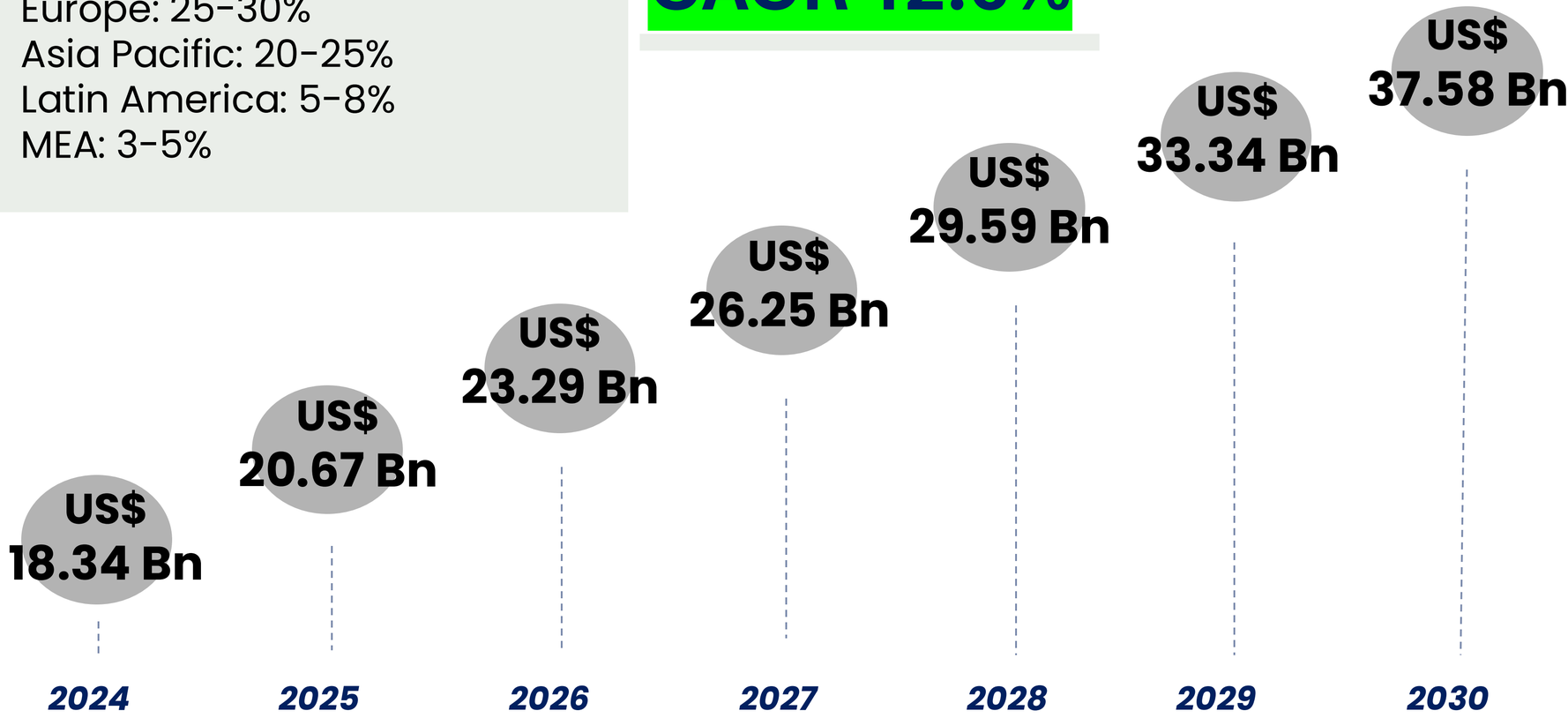
Data Collection & Processing For Water Management

Estimated Regional Distribution

- **North America: 35%**
- Europe: 25-30%
- Asia Pacific: 20-25%
- Latin America: 5-8%
- MEA: 3-5%

Smart Water Management Market

CAGR 12.6%



Source: Grand View Research

ECOPEACE

Domestic Projects in Korea

How we are approaching toward problems



Highlights

- **Domestic Projects in Korea:**

  Rivers and reservoirs successfully cleaned and monitored
- **Global Projects:**

  Singapore's Gardens by the Bay for algae removal, Abu Dhabi oil refinery for spill cleanup.
- **Technical Success:**

  Proven feasibility across diverse water environments

Ready to scale globally, support communities, and restore ecosystems through intelligent water management.

The US

Market Penetration

Potential Customers

Ecopeace captures core markets first, then scales across sectors to own Water Intelligence worldwide.



GTM plan in the US

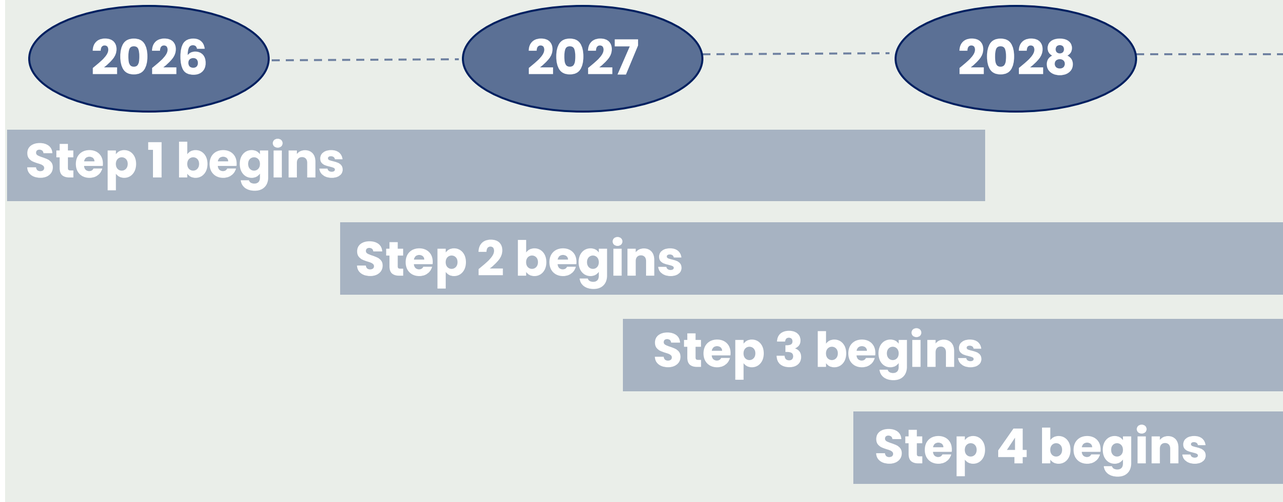
Step 1:
Pilot projects in high-risk states (California, Florida, Texas)

Step 2:
Leverage federal/state funding & grants

Step 3:
Partnerships with utilities, municipalities, associations

Step 4:
Scale via Water-as-a-Service (recurring model)

Planned Timeline



ECOPEACE

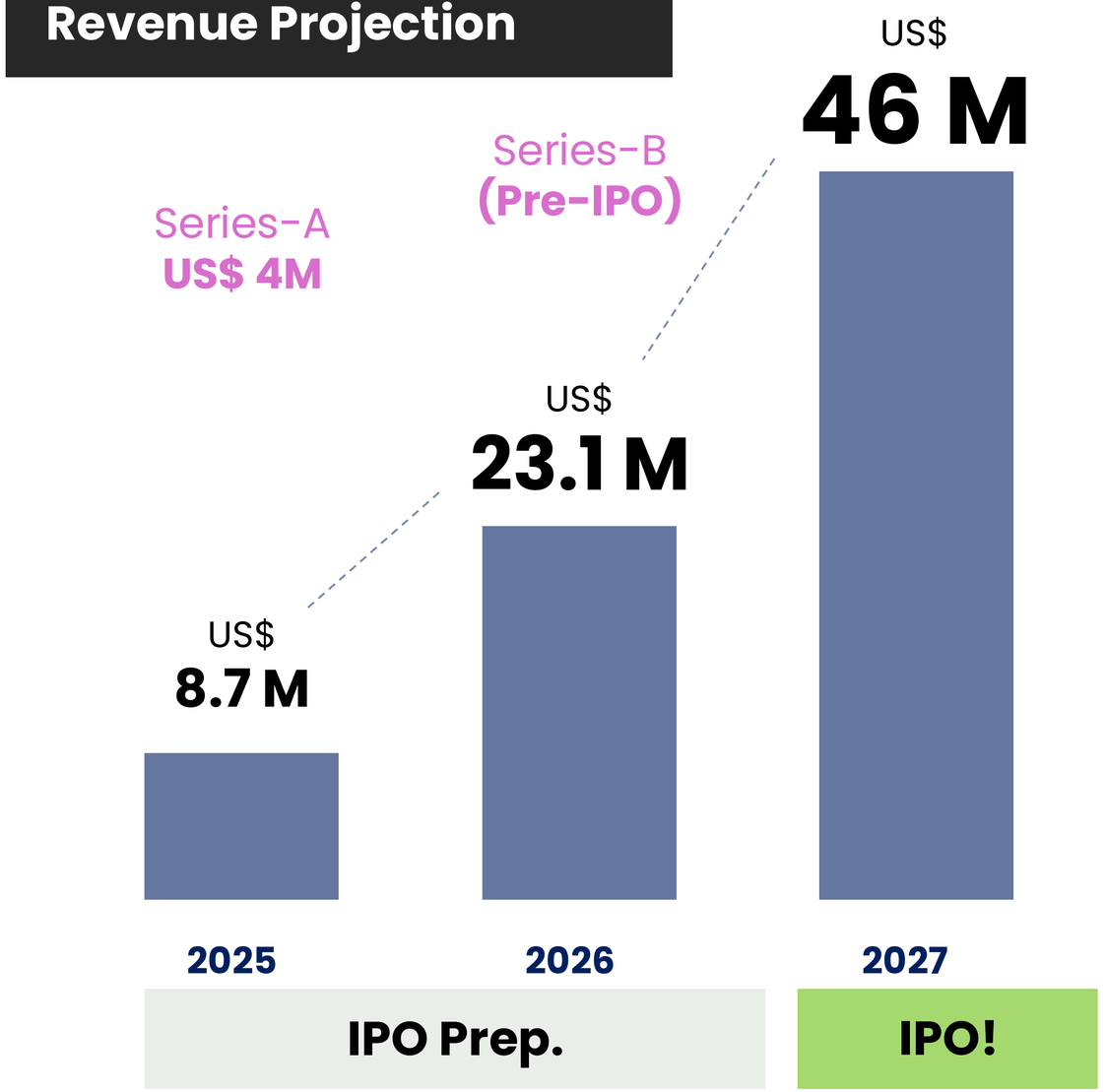
Ecopeace

Scalable Business Model

Evolving from cleanup to data-driven Water Intelligence — unlocking recurring revenue and measurable impact.

Phase 1	**Phase 1: Hardware + Service** ECOBOT sales with comprehensive maintenance contracts ensuring optimal performance
Phase 1	**Phase 2: Water-as-a-Service** Subscription model delivering continuous pollutant removal, monitoring, and analytics

Revenue Projection



ECOPEACE

ECOPEACE PRODUCTS AND SOLUTIONS

ECO-STATION

ECO-BEE

ECOBOT

HEALING BOAT


AI-Powered
Water Intelligence
ECOPEACE

PLUGANDPLAY

STARTUP PRESENTATION

WI.Plat

WI.Plat

WI. Plat provides AI- and IoT-based leak detection that transforms water networks into smart infrastructure with accurate, real-time monitoring.

#PNPTCSiliconValley

Join us at pnptc.com

WI.Plat

Solving Global Water Loss

with IoT & AI Platform



CEO
Sanghoon Cha
ceo@wiplat.com
+82 10 7933 1208

The World is Leaking

Every year, the world loses **$40 Billion** to water pipe leakage



Water waste

220 Million m^3/day → Daily water needs for **880 Million** peoples

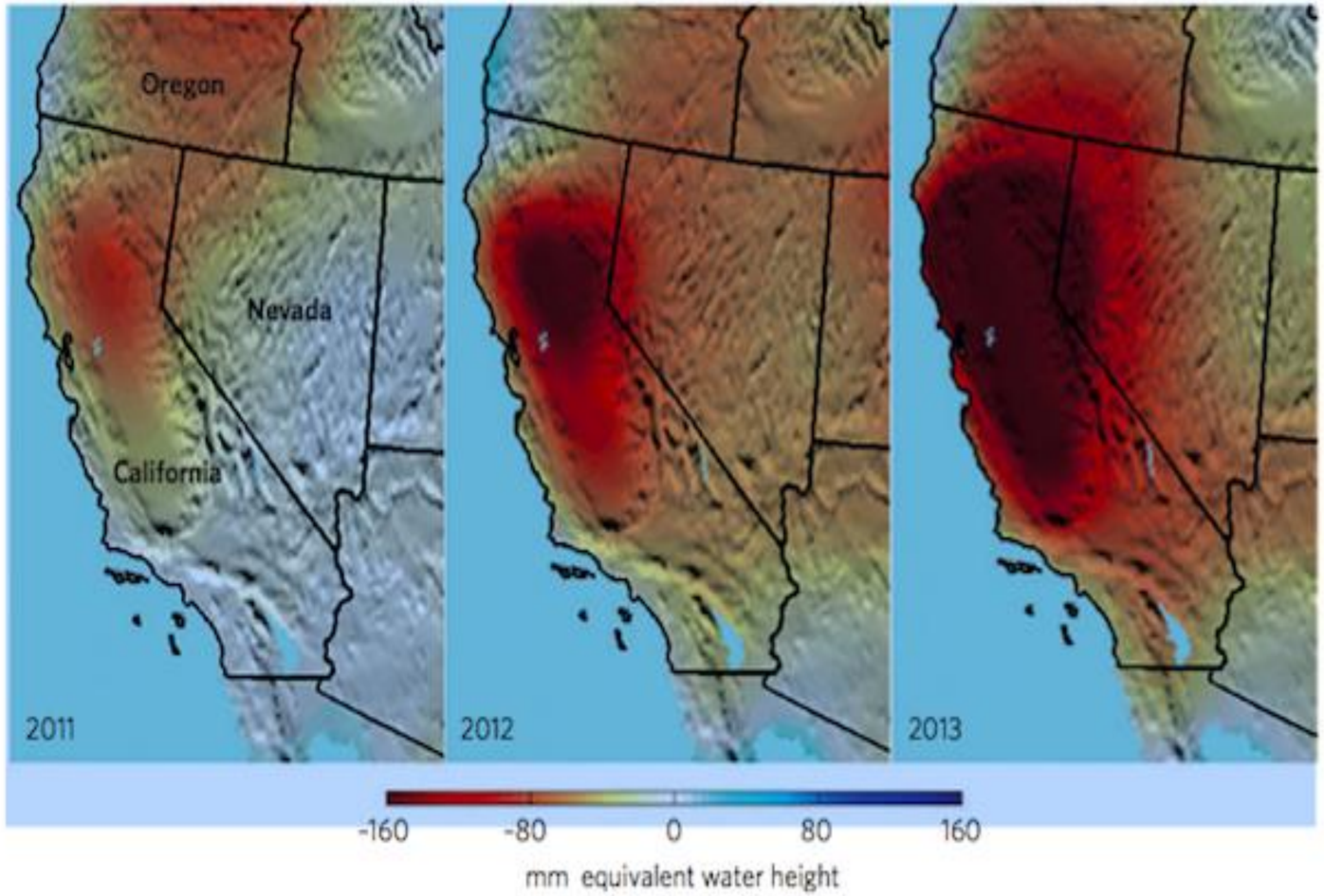


Unnecessary CO_2 emissions

30 Million kg/day → **5.7 Million** Cars

California Is Losing Water Faster Than It Can Save

AI-powered leak detection is California’s fastest path to real water savings





The Current "Solution" is Failing

Today, Infrastructure still relies on slow, manual, and subjective "expert experience."

Relying on Water Leak Experts

- Requires leak detection experts with more than 10 years of experience
- Relies heavily on experts' accumulated field experience
- Countries lacking such experts struggle to solve leakage problems



Relying on Operation Experts

- Requires operation experts with more than 10 years of experience
- Dependent on experts' long-term operational know-how
- Countries lacking such experts face severe inefficiency in leakage management



NELOW (Never Lose Water) AI Platform



Sonic GL

- ARM MCU, 16 bit codec, Bluetooth 5.0
- Rechargeable Lithium Polymer Battery
- 16G Micro SD memory
- 3 Days usage with 100% charged





NELOW Mobile & Web

Sonic M2

- ARM MCU, 16 bit codec
- Bluetooth 5.0
- Non-rechargeable High Capacity Battery
- LTE, CAT M1, GSM Modem
- IP 67





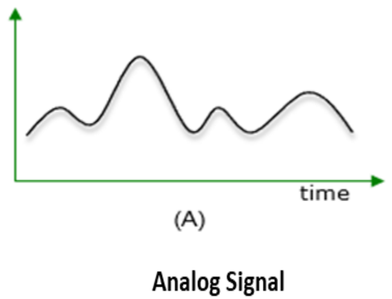
Mobile AI: Sonic GL

Our CES 2023 Innovation Award-winning Sonic GL empowers any field operator to become an expert

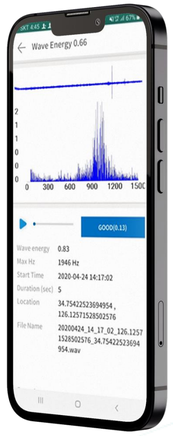
AI Model

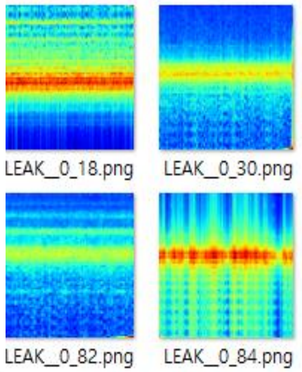
Reliability

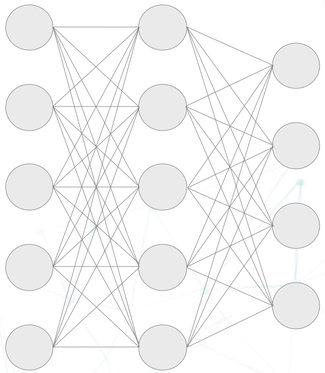
95%











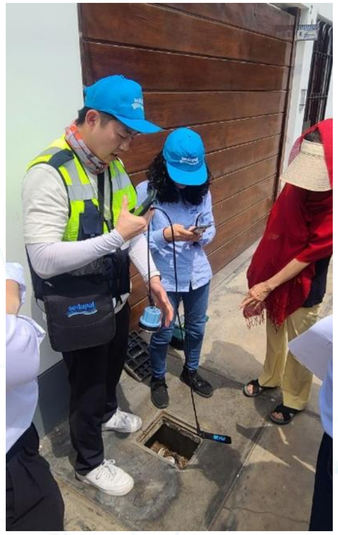
Leak

No Leak

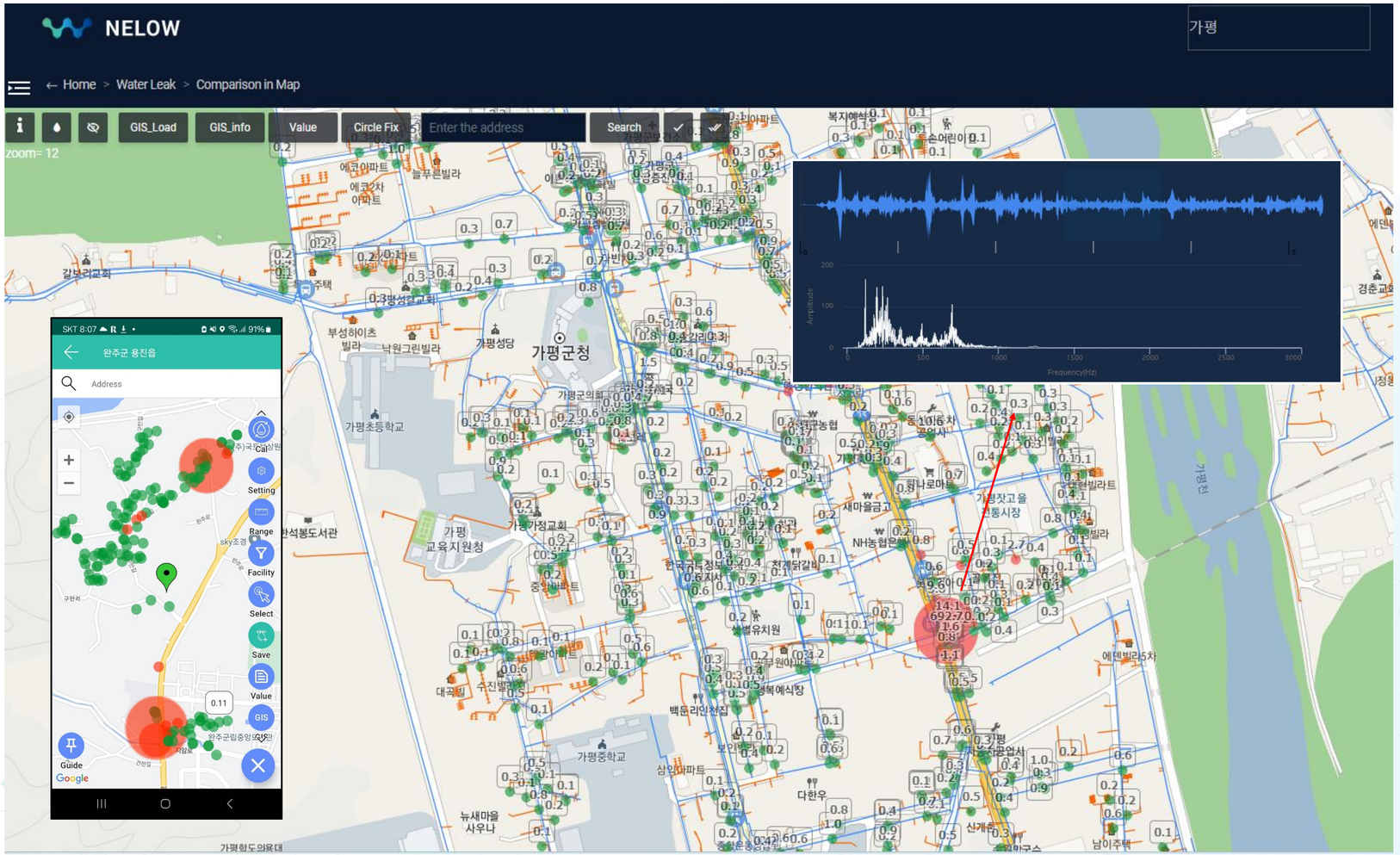
Democratizing Leak Detection

NELOW empowers a non-specialized workforce to find leaks with precision



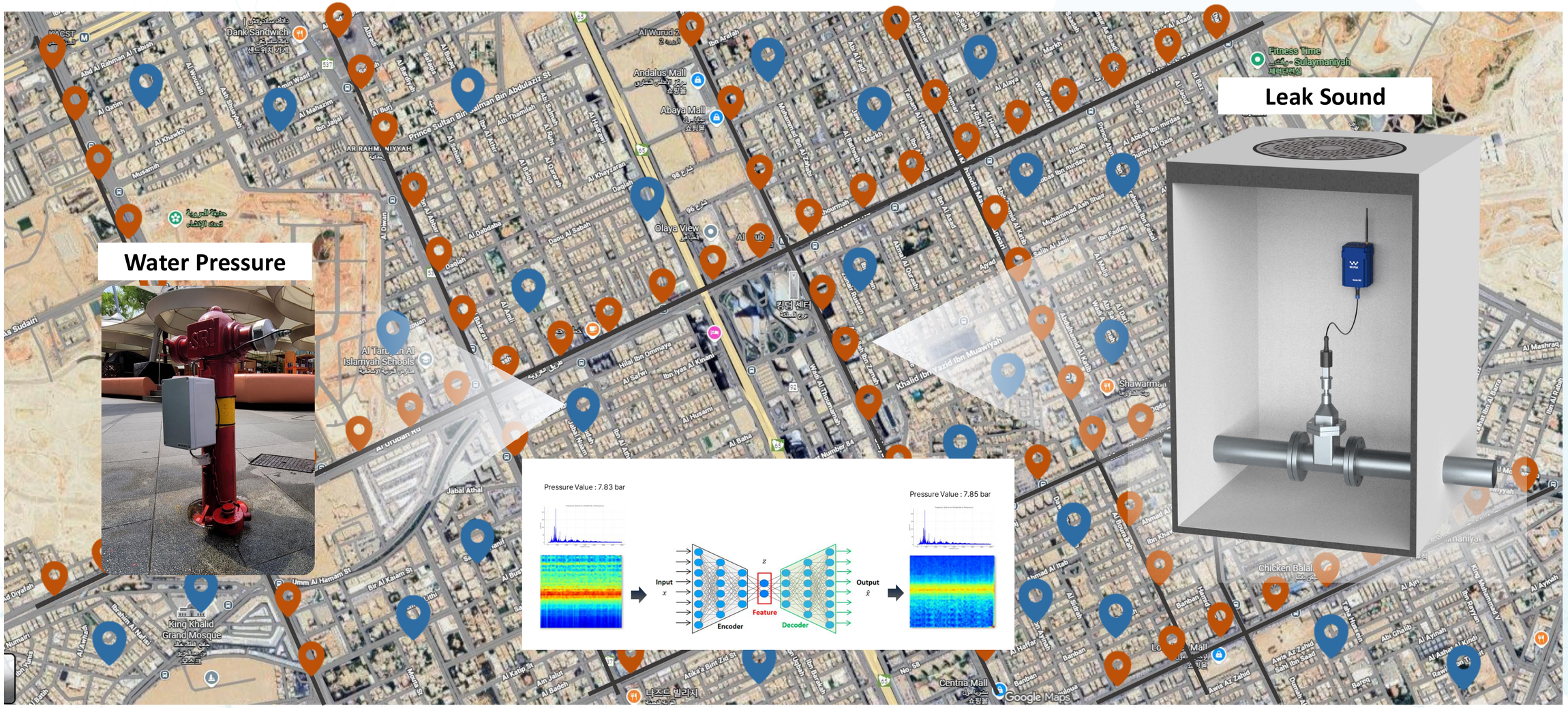






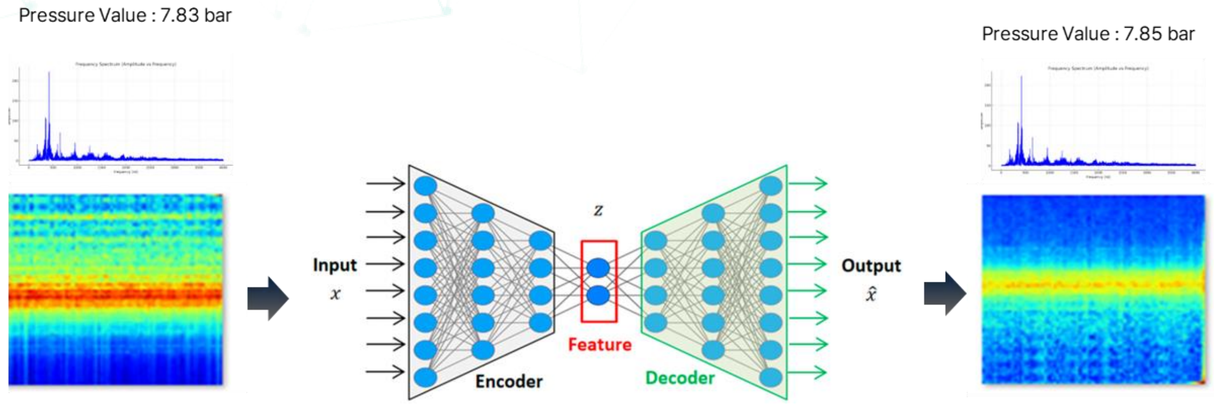
Hardware (Sonic M2)

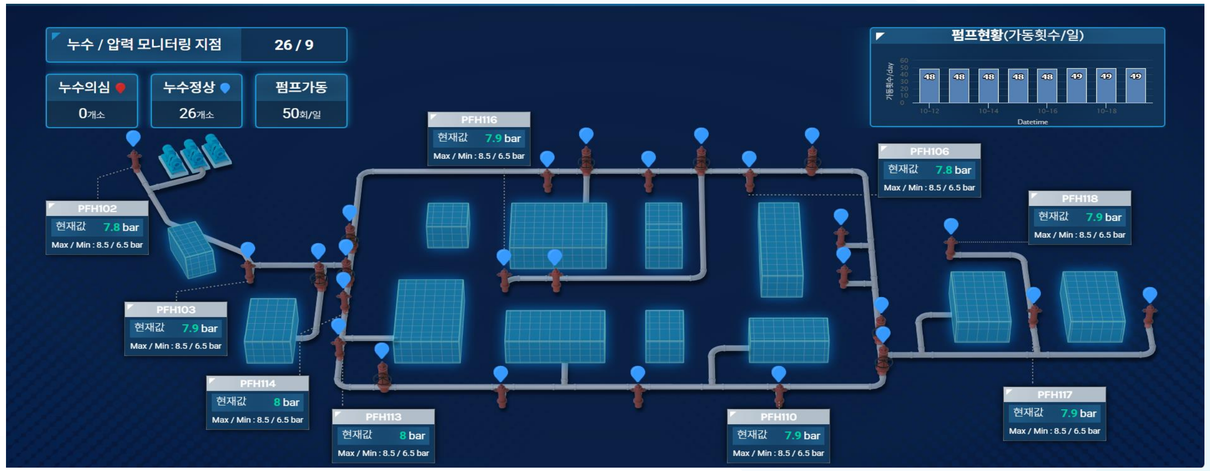
It serves as the "ear to the underground," providing a real-time data for our AI

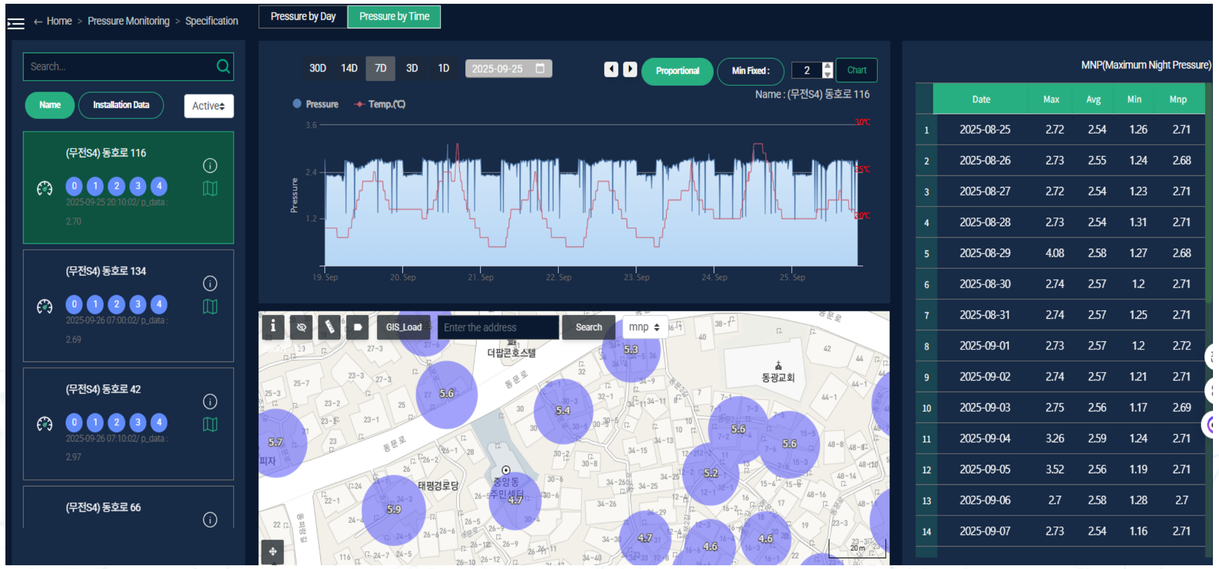


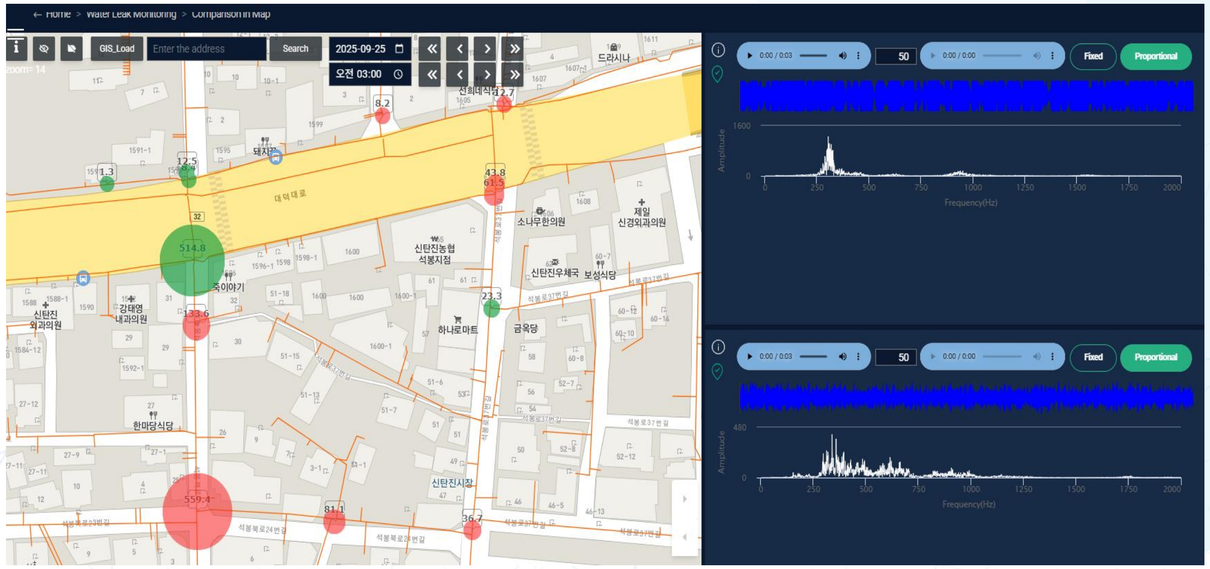
AI-Powered Realtime Analytics

It analyzes complex sound patterns to predict and confirm leaks *before* they surface



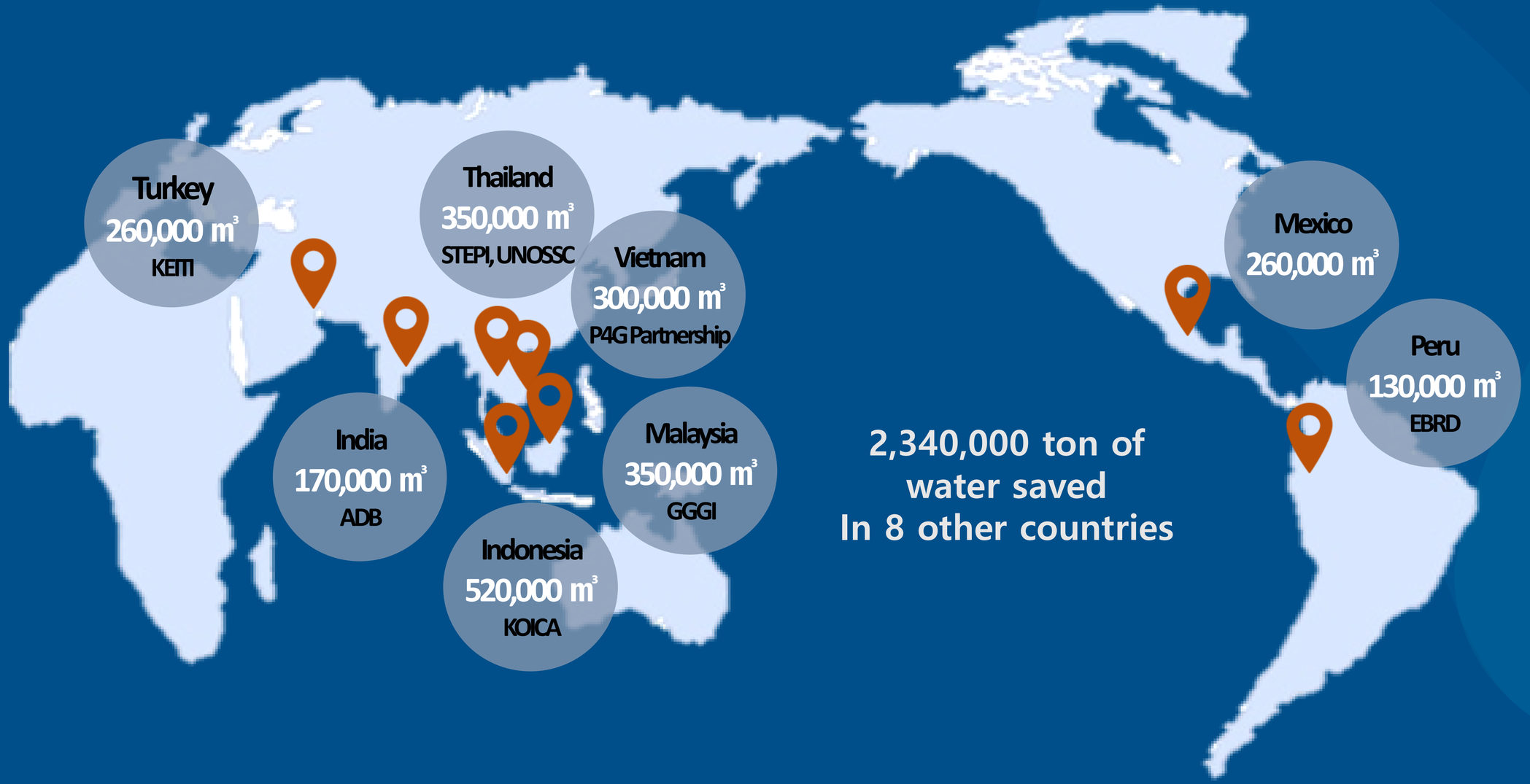






Proven and Trusted by Global Partners

Our solution is validated by successful projects in 8 countries, trusted by key international partners



Flexible Biz Models for Global Scale : Performance-Based Contracts

WI.Plat Platform

50%

Cloud System

Engineering

Sonic M1, M2

Other equipment

Financial benefits

Construction

Human resource

Maintenance Management

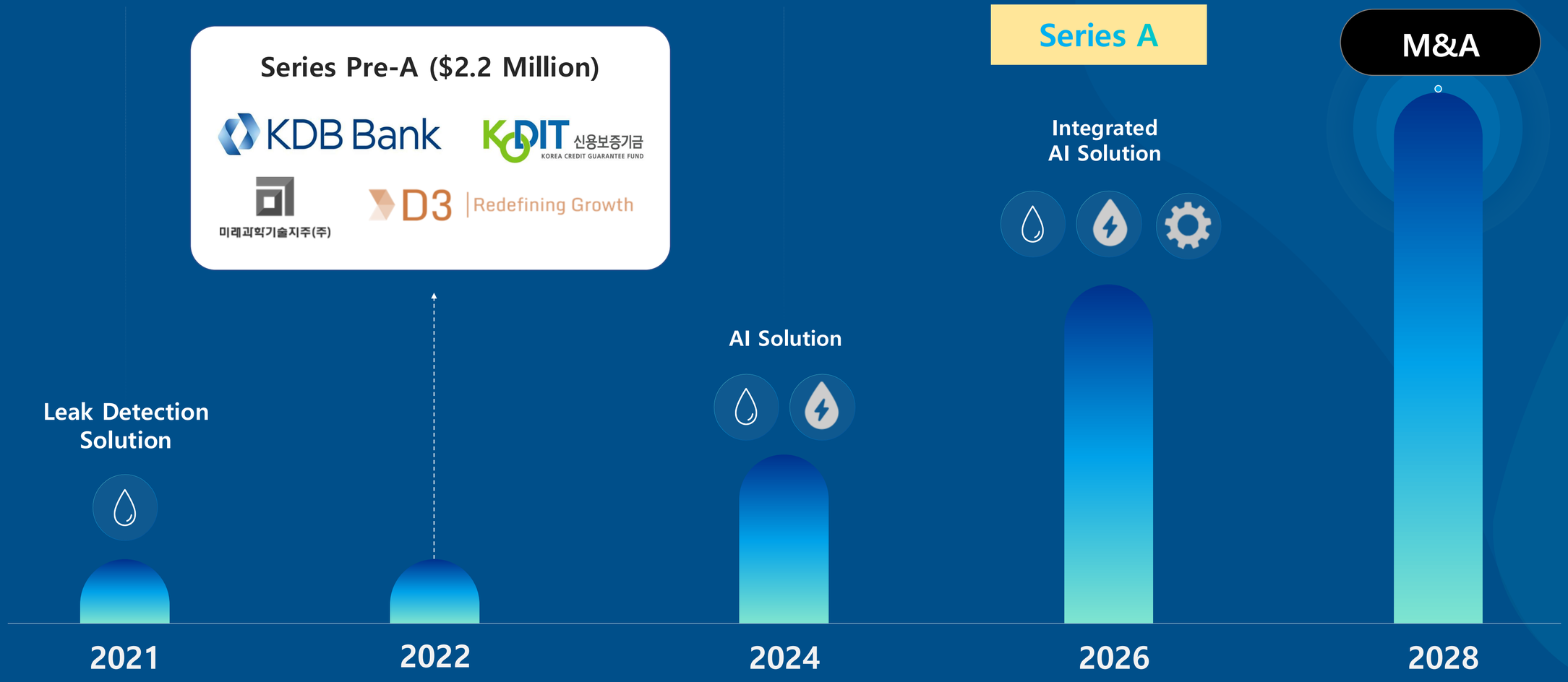
Electric power consumption





Our Journey & The Next Step

2020: Seed Round (Completed), **2022:** Pre-Series A (Completed), **2026: Series A (Raising)**



The Exit: Global Leadership

Our 2028 goal is to become the **#1 Digital Water Solution** in the world, targeting a M&A with a global EPC

	01 2025 Integration	02 2026 Scale-up	03 2027 Project Expansion	04 2028 Global M&A
Human Resource	• AI Experts 1 • IoT Experts 1 • Project Experts 1 • Marketing Experts 1 • **23 Peoples**	• AI Experts 5 • IoT Experts 2 • Project Experts 7 • Marketing Experts 1 • **45 Peoples**	• AI Experts 5 • IoT Experts 2 • Project Experts 7 • Marketing Experts 1 • **60 Peoples**	• AI Experts 3 • IoT Experts 2 • Project Experts 17 • Marketing Experts 3 • **85 Peoples**
Technology	• Upgrade acoustic sensor • GPR sensor (R&D) • Pipe diagnosis (R&D) • Sewage AI Agent	• GPS commercialization • Pipe diagnosis sensor commercialization • Wastewater AI Agent	• Upgrade GPS • Upgrade pipe diagnosis • AI Agent with LLM • AI Agent integration	• Sensor optimization • Integration system • Integrated AI Agent • LLM AI Agent solution
Business	• JV in Malaysia, Indonesia • PBP 2 cases - Indonesia 1 - Malaysia 1, Thailand 1	• JV in Thailand, UAE • PBP 8 cases • Water-energy project 1 • Domestic product sales • AI-SI projects 3	• JV in USA, Kyrgyzstan • PBP 10 cases • Water-energy project 3 • Domestic product sales • AI-SI projects 7	• JV in Vietnam, Columbia • PBP 10 cases • Water-energy project 3 • AI-SI projects 7 • **M&A with global EPC**
	$ 1.2 Million	**$ 3 Million**	**$ 5 Million**	**$ 15 Million**

The Right Team to Win

We are a specialized team where deep domain expertise meets proven AI engineering



Water Expert

K water

- K-water automation design
- Operation of the metropolitan integrated operation center
- Participation in multiple smart system development projects
- Former head of Jangheung Waterworks Management Team

Professional Expertise

- 23+ years of experience in water resource management at K-water
- Expertise in Mechanical Engineering (Ph.D. coursework) and water management
- **Leadership in IoT, software, and IT projects**
- **Extensive experience in international water management projects**
- Strong skills in **analytical solutions and energy management platforms**



CTO

LG CNS

- Embedded, IoT expert
- LG CNS, 20 years of experience
- Sungkyunkwan University, Electronic Engineering



CMO

- Overseas marketing expert
- 15 years of experience
- Chung-Ang University, Department of Business Administration



CPO

K water

- Expert in water, energy
- 18 years of experience in K-water
- Ph.D. in Mechanical Engineering, University of Maryland



Technical Advisor

- Professor at Gachon University
- Former Professor at Kangneung-Wonju National University
- KB Bank Inside Director

Let’s AI Water for Water Equity

WI.Plat

PLUGANDPLAY

STARTUP PRESENTATION

OZ Sepa Oil-Zero Separator

Oz Sepa

Oz Sepa offers a nano-structured hydrophilic filter that directly separates oil and water with 99%+ efficiency, delivering cost-effective and eco-friendly treatment.

#PNPTCSiliconValley

Join us at pnptc.com





OZ-SEPA

Oil-Zero Separator

The World's First Direct Oil-Water Filter.

OZ SEPA Inc. 2025. 11

OZ Sepa LinkedIn

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Last Year: What we were exploring

Our Beginning: Oil Spills

Oil spills are part of the production process

- WW:~7 large/yr
- USA: 70 small/day
- WW: ~4M barrels/yr

Separating oil & water is difficult: much water with thin layers + micro-droplets

Normal collection (absorbers) & disposal create another problem





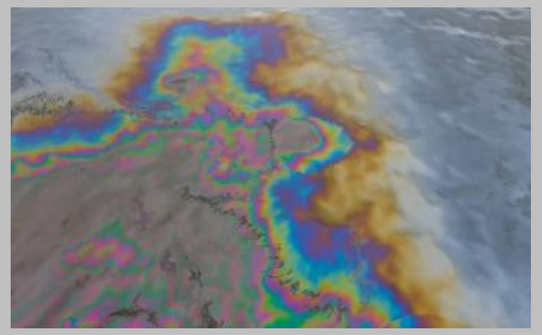


- 2007 Korea Oil Spill=> $330M
- Exxon Valdez (260K barrels)
  - $2.1B direct cleanup
  - + $1B rehab
- Criminal convictions 1-6 years & fines of $2.5-100K/day
- Estimated 5.5% of oil and gas sites in the United States have spills or leaks annually

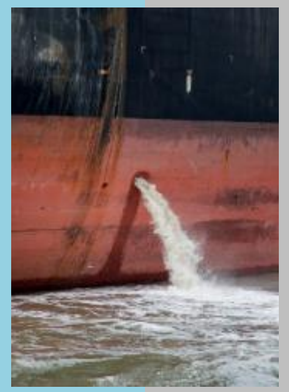
OZ Sepa Oil-Zero Separator

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USA oily water problems abound



- Oils spills and ship maintenance contamination
- Shipboard bilge water
- **Oil production waste water ("Produced Water")**
- Well water contamination
- Food oil separation
- Vehicle maintenance and refueling
- Highway accidents and spills

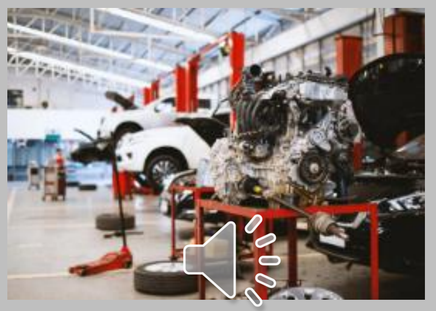












OZ Sepa Oil-Zero Separator

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Oil & Gas Produced Water

- 3x-18x produced water:oil
- **USA: 20B barrels water/yr**
  - @250ppm = 5M oil/yr
  - 1% = 20M barrels/yr
  - 20x-80x Exxon Valdez
- **Texas Permian 8M water/day**
  - @250ppm = 2K barrel
  - 730K barrels oil/yr
  - 2023 rev: $181B

Same issues WW











- $22B operations cost/yr
  - $0.40-$1.00/barrel
  - Largest Ops Cost
- ***Out of disposal options for produced water***
  - ***Deep injection causes earthquakes***
  - ***Middle injection causes zombie wells***
  - ***May require reduction in oil production***

OZ Sepa Oil-Zero Separator

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Large volumes by filtering NOT absorbing

Proprietary Nano-Fiber Filter

한국과학기술연구원
Korea Institute of Science and Technology

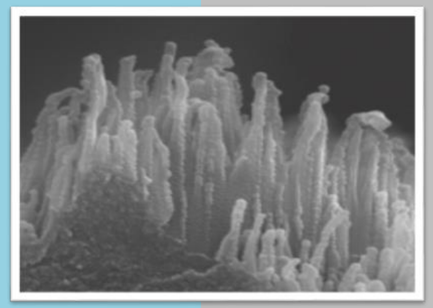
Principles of a Nanofilter

- Nano-surface treatment the cellulose based material's surface is covered with nanostructures.
- These nanostructures have a high aspect
  - Highly hydrophilic (water loving)
  - Highly oleophobic (oil hating).
- Oil sticks to untreated fiber
- **Nano-fiber oils repels oil but passes water**
  - **Passes A LOT of water, TONS of water**
  - **<1ppm of oil (8ppm safe for human consumptio..)**
- **In production since 2023**





Oil sticking to the material before processing



Filter surface after processing



Oil being completely rejected by the processed filter surface

OZ Sepa Oil-Zero Separator

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Proprietary Nano-Fiber Filter

해양경찰청 KOREA COAST GUARD

Lower than limits for US drinking water (8 ppm oil)

10x lower than US drinking water limit

	Characteristics	Water Flow Rates Korean Coast Guard Test
F1	Lighter weight application. Atmospheric pressure. Very high flow rates 1st pass <5ppm residual. 2nd pass <1ppm	950 metric tons/hr/m2 5975 barrels/hr/m^2
F2	Higher pressures. High flow rates <1ppm oil flow through	585 metric tons/hr/m^2 3680 barrels/hr/m^2
F3	Thick material for more rugged uses. Moderate flow rates.	350 metric tons/hr/m^2 2200 barrels/hr/m^2



absorber OZ SEPA





OZ Sepa Oil-Zero Separator

Filter Out vs Absorb the Oil

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New Products for US Market

- Developing & fielding new products
  - High volume skimmer for oil ponds
  - Tested by Korean Coast Guard
  - New ruggedized filter materials
  - Cartridge & basket filters vs rolls of filter

- **Seeking new partners**
  - OEM final stage “water polishing”
  - Oil evaporation pond cleanup services
  - Food & Beverage pond cleanup
  - Industrial waste water licensee

- **Seeking funding for US expansion**
  - OEM/partner support + spares
  - BD in other fields

S-4 Skimmer for oil ponds





OZ Sepa Oil-Zero Separator

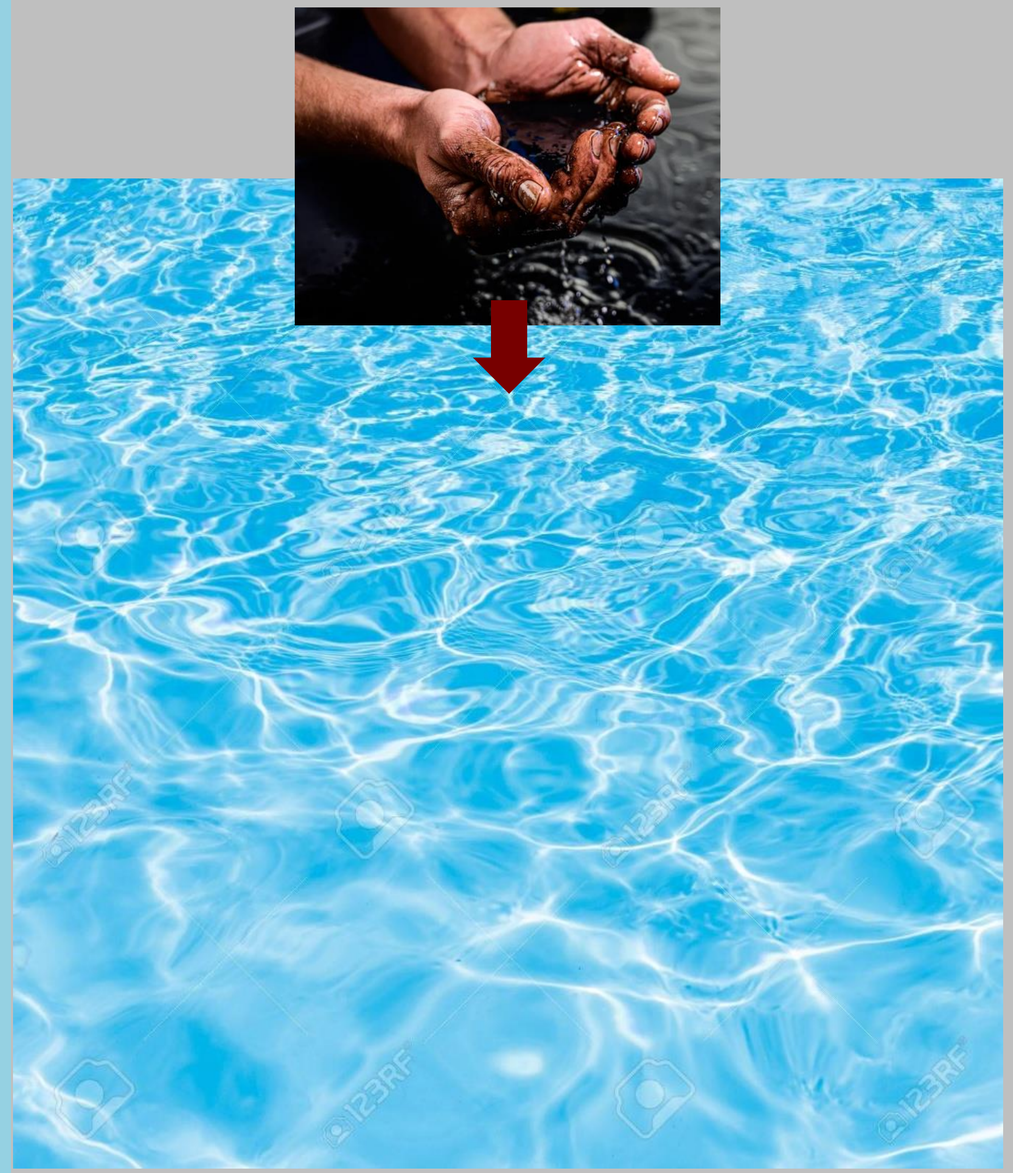
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OZ Sepa LinkedIn

"OZ-SEPA Inc."

"Committed to a sustainable future and a cleaner planet, our company, a leader in material development and commercialization, is shaping the 21st century's eco-friendly enterprises. We are on a trajectory to becoming a global leader in sustainable innovation."

Thank you.



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PLUGANDPLAY

STARTUP PRESENTATION

deep visions

DEEPVISIONS

DEEPVISIONS turns ordinary cameras into Vision AI environmental sensors that monitor air quality, detect pests, and support sustainable agriculture.

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Join us at pnptc.com

dəəəp visions

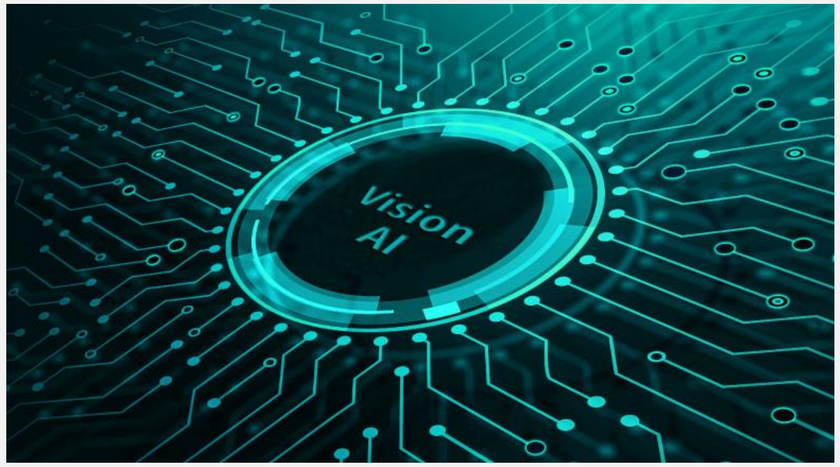


Social Impact by Vision AI Technology

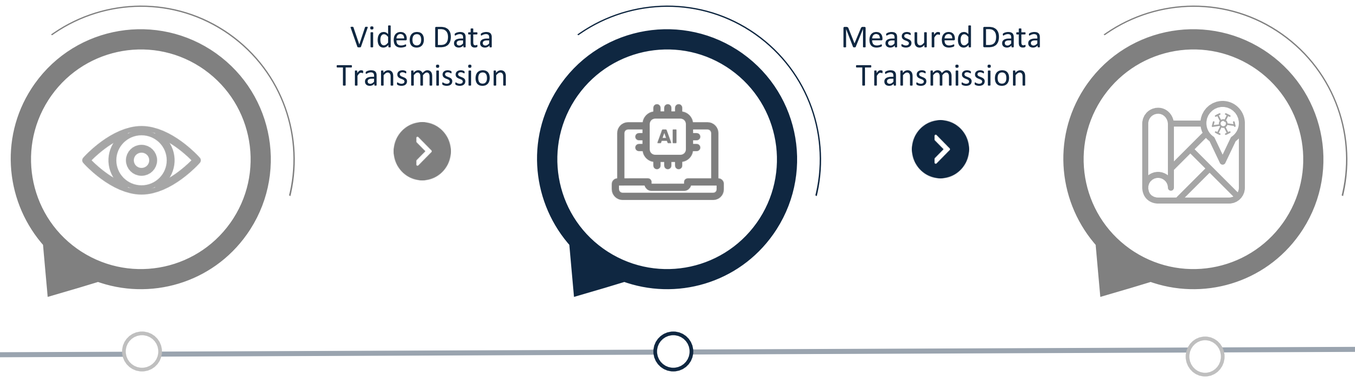




‘VisionPlus’



Ordinary Cameras into Powerful Sensors



Data collection & refinement

Low cost

Feature value measurement using AI analysis solutions

High accuracy

Visualisation service based on measurement data

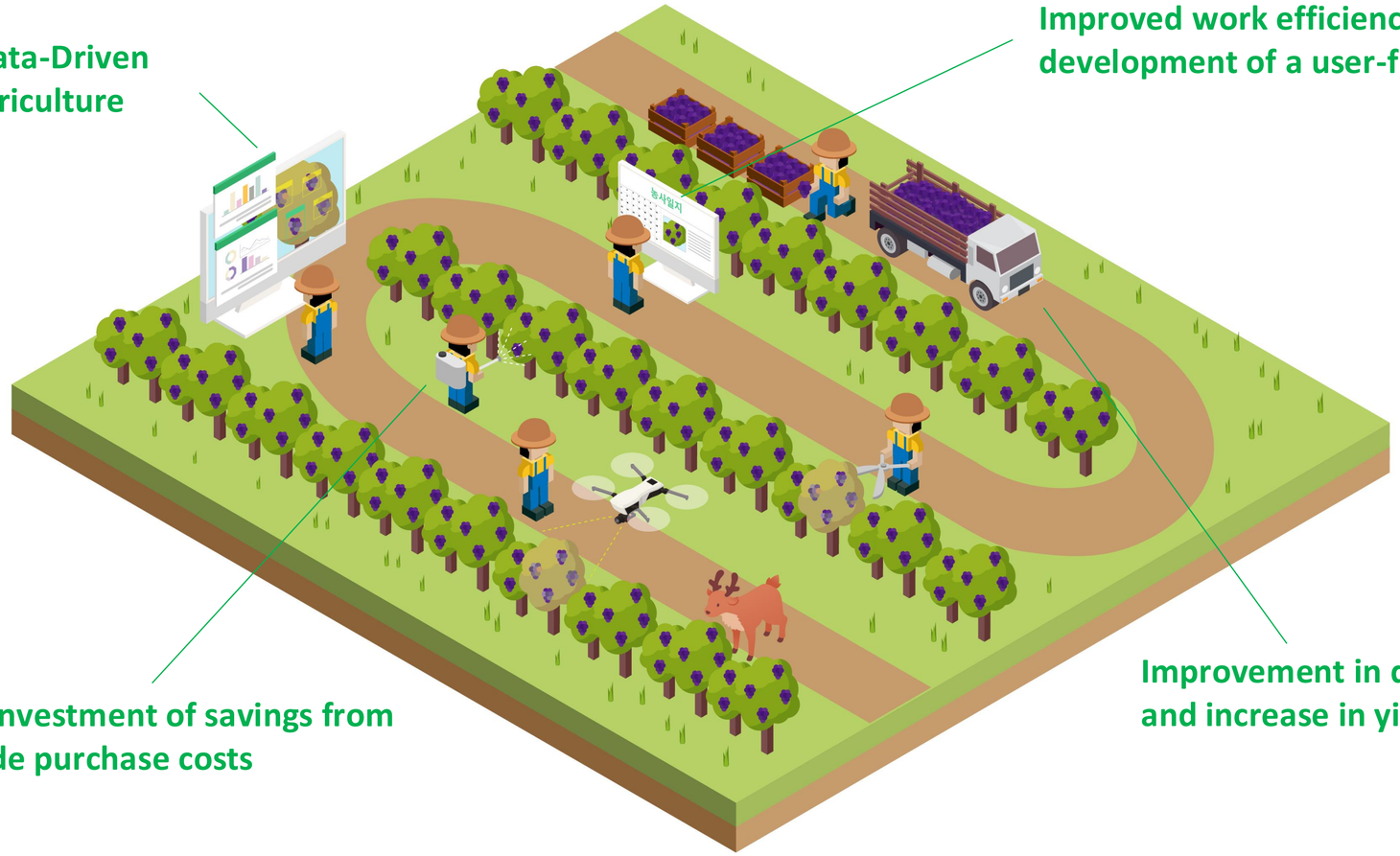
User-friendly information

(Agriculture) Vision AI Precision Agriculture Service

Targeted spraying can reduce pesticide use by 30–50%

Achieving Data-Driven Precision Agriculture

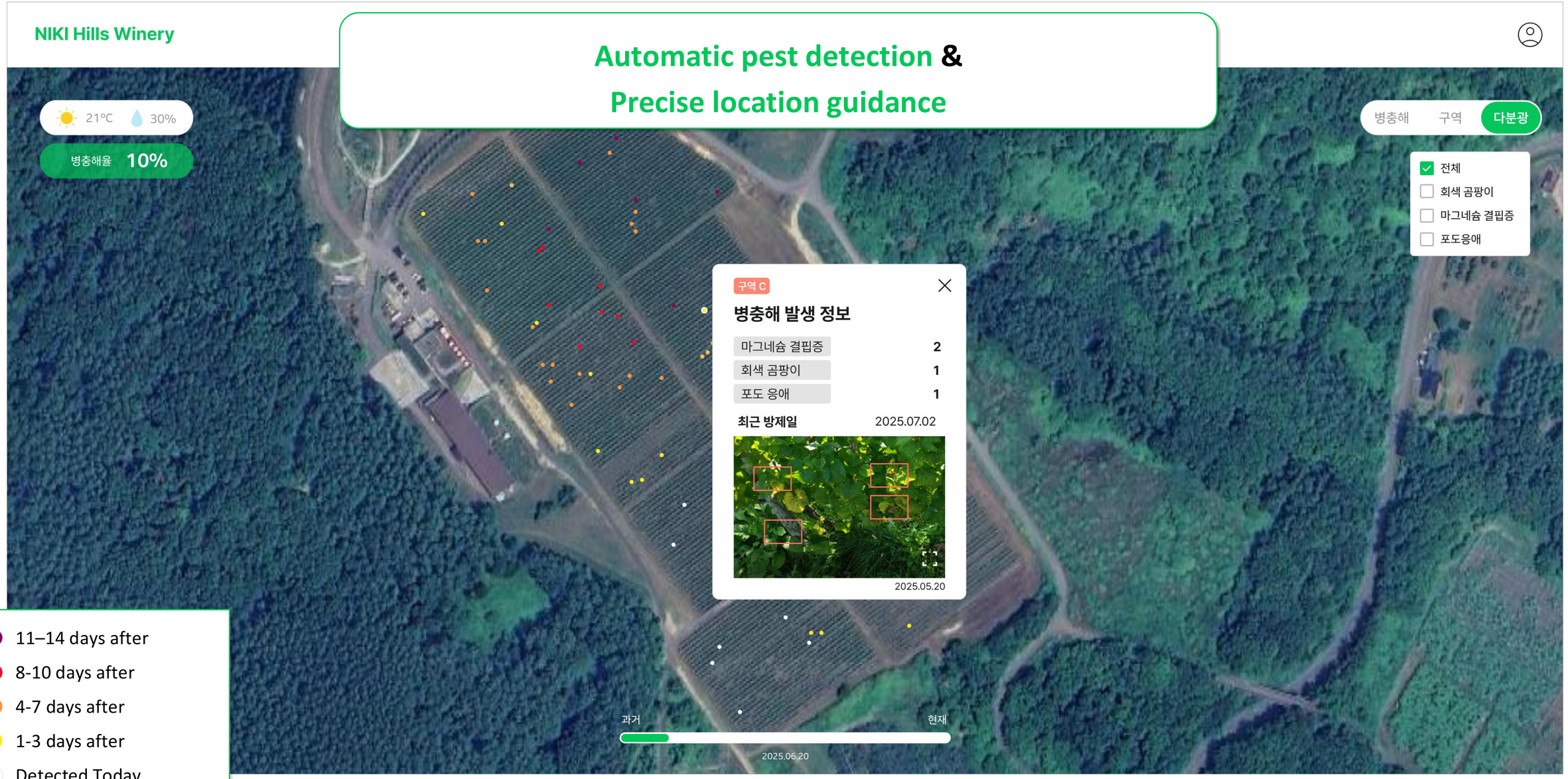
Improved work efficiency through the development of a user-friendly platform



Potential for reinvestment of savings from reduced pesticide purchase costs

Improvement in quality and increase in yield

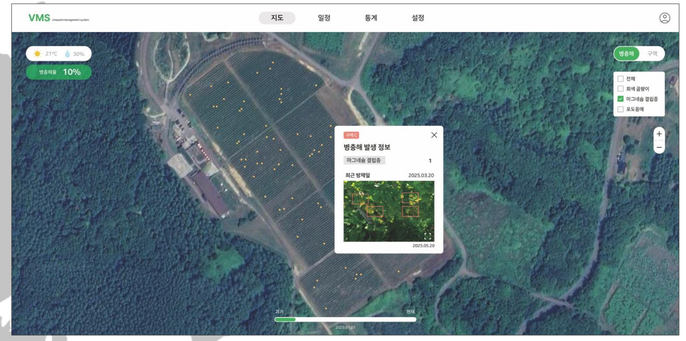
Service Page



VisionPlus Implementation Cases

Agriculture Project UNIDO(Vienna)

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



Winery Field (SAPPORO)

Air Quality Measurement (SEOUL)
Korea Media Rating Board (Busan)



Safety Management (Hochimin city/MOU)



Expansion

Market Expansion Strategy

2025

Agriculture (Pest Detection)

▶ Japan
- Demo session in December with 20 winery owners

▶ US
- Network with UC Davis
- Network with Napa valley

▶ Europe
- In contact with wineries in France, Germany

▶ UNIDO
- Planning Agriculture Project (Vienna)

Air (Fine Dust Measurement)

▶ Domestic
- Seoul District
- Olympic Park

▶ Global
- Joining Air Quality project in Birmingham

2026

Agriculture (Pest Detection)

▶ Japan
- Applied to 10 Wineries

▶ US
- POC in Napa valley
- Collaboration with UC Davis

▶ Europe
- POC in big vineyards
- First customers in smaller wineries

▶ UNIDO
- Initiation on Agriculture Project (Vienna)

Air (Fine Dust Measurement)

▶ Domestic
- Ministry of Environment National Project
- Applied in 5 local governments

▶ Global
- Entry via ODA Projects in Developing Countries (e.g., Laos, Vietnam)
- New York, Chicago (US)
- Birmingham (UK)

2027

Agriculture (Pest Detection)

▶ Japan
- Applied to 50-100 Wineries

▶ US
- Customers in Napa valley
- Expansion to Oregon, Washington, New York, Virginia
- Collaboration with UC Davis

▶ Europe
- 10-30 wineries in France and Germany
- Expansion to Italy and Spain

▶ UNIDO
- Agriculture Project (Vienna)

Air (Fine Dust Measurement)

▶ Domestic
- Ministry of Environment National Project
- Applied in 10 local governments

▶ Global
- Applied in multiple local governments in East Asian countries
- Smart City Projects in big cities (US)
- Birmingham, London (UK)

Investment

Investment and Growth Goals

~2023

Revenue: 700 million KRW

Investor: IMPACT SQUARE.

R&D

Pre-A

2024

Revenue : 900 million KRW(BEP)

Investors: mysc, PEOPLE OF VALUE NEXTDREAM ANGEL CLUB, 한국사회투자 KOREA SOCIAL INVESTMENT FOUNDATION

Commercialization & BEP Achievement

Bridge

2025

Revenue :1.2 million USD (Projected)

Investors: NAVER

?

Global Commercialization

Series A

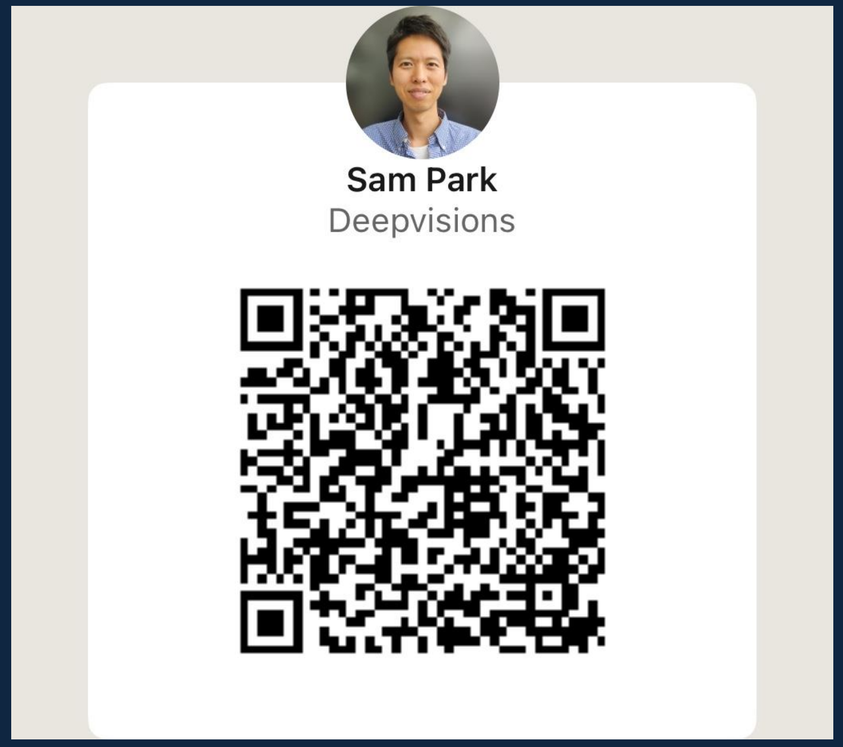
2026

Revenue: 3 million USD (Projected)

Business Scale up

Series B

sampark@deepvisions.co.kr



Thank You.


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SV SUMMIT
Plug and Play GOAL
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PLUGANDPLAY

Sv summit

GOAL

AWARDS



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PLUGANDPLAY

Sv summit

Thank you For Attending

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