WORLD BANK GROUP | KOREA GREEN GROWTH TRUST FUND | Ministry of Finance and Economy | SEJONG CITY

KGID 2026 SEJONG

[Autonomous Robots for Ocean Pollution Response]

[Gisung Gwon]
[CEO, SHECO Inc., Republic of Korea]

GOING GREEN WITH ROBOTICS

Company Overview

SHECO has spent the past 7 years building breakthrough solutions that overcome the limits of traditional marine response and water purification — selected for Korea's Pan-Government Green New Deal Top 100 and the Ministry of Oceans & Fisheries' Top 100 Innovative Companies as a global water purification robotics company.

Company	SHECO Inc.
Founded	July 1, 2019
Team	25 total (Business 8, R&D 17)
What We Do	Oil spill response / Marine & coastal facility cleanup / Water purification / Floating pollutant recovery & separation
About	Builder of autonomous marine collection robots — development, manufacturing & operations

Slogan

"Sharing the clean environment of the current generation with the next generation."

Securing Market	Patents & Certifications	Investment
Korea Coast Guard, Korea Navy	13 of Patent Registration	Nautilus investment
KOEM, K-eco		Friend Investment partners
Korea Rural Community Corporation	37 of Application	The Wells Investment
Korea Water Resources Corporation		Hyundai Motor Securities
Public Procurement Service	4 of Trademarks	SK Innovation
Innovative Product, SOC Tech Market		The Center for Creative Economy Innovation (Chungbuk)
Samsung Heavy Industry	1 of Design Patent	Honghap Valley Accelerator
Hyundai Motors		KAIST
SK Innovation		MYSC
Jeju Island		

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Ocean pollution is growing. Response methods have not changed.

Oil Spills

Marine Debris

The common problem: 90%+ of operations still require manual labor as the only option

An unmanned robot that recovers, separates, and navigates autonomously

01 Oil Recovery & Separation

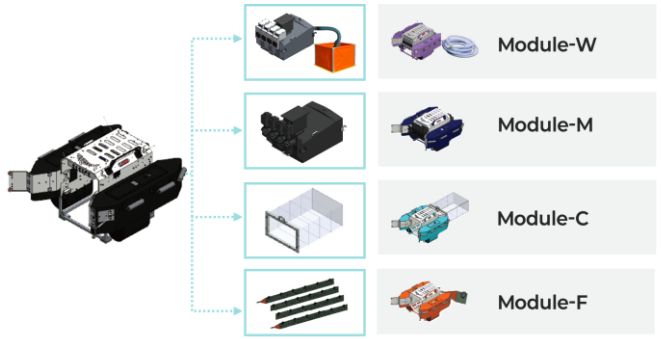
30,000 L/h processing

Real-time oil-water separation

5 PPM discharge

(3x intl standard)

02 Modular Design



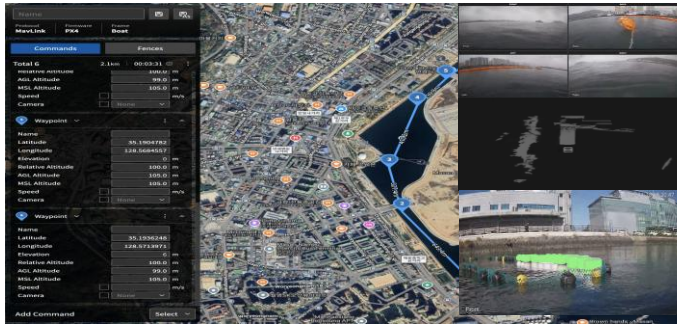
Single platform

Swap modules for:

oil / trash / oil fence /

chemical spray

03 AI & Software System



Autonomous navigation

Oil detection AI

Real-time streaming

Remote control

Swap modules on a single robot to address different ocean challenges

ARK M

Oil Recovery Module

Oil spill response
Real-time separation

ARK C

Trash Collection Module

Marine debris
1,100 L capacity

ARK F

Oil Fence Towing

Containment boom
deployment & towing

ARK S

Chemical Spray Module

Algae & HAB
treatment spraying

Customers choose the module they need - We deliver the same robot

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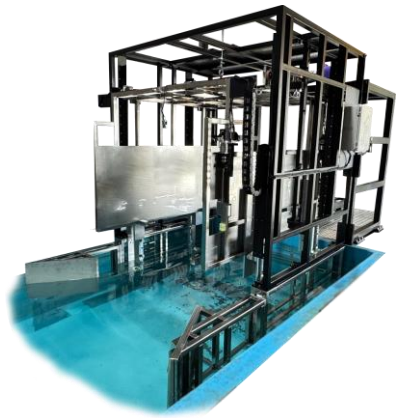
SHECO is building 24/7 unmanned full infrastructure — robots, stations, and a ground control system (GCS), all connected for round-the-clock autonomous response.

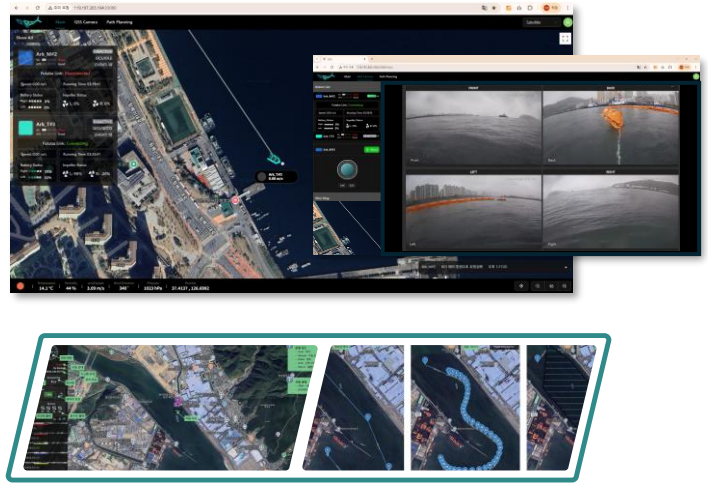
Sheco Ark

Mission execution & data collection



Robot Station

Auto-charging /
Auto pollutant discharge
(24/7 unmanned standby)



SHECO GCS(NOA SYSYEM)

Remote integrated monitoring & data analytics dashboard

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Proven in Korea

KOEM (Korea Marine Environment Management Corporation)— Our Anchor Partner

KOEM Korea Marine Environment Management Corporation

Masan Branch · Since Feb 2025

10 Robots Deployed (3 Types)

4× ARK-C · 4× ARK-F · 2× ARK-M

150+ tons collected — exceeding all targets

26 field demonstrations · 10-unit swarm operation

6 autonomous + 4 manual, single control station

Impact Numbers

150+
tons

50%
Fuel Cost Reduction

60%
Ops Resources Saved

240
tons
CO_2 Reduced / Year

Also serving: Korea Coast Guard · Korean Navy · 6+ Regional Governments

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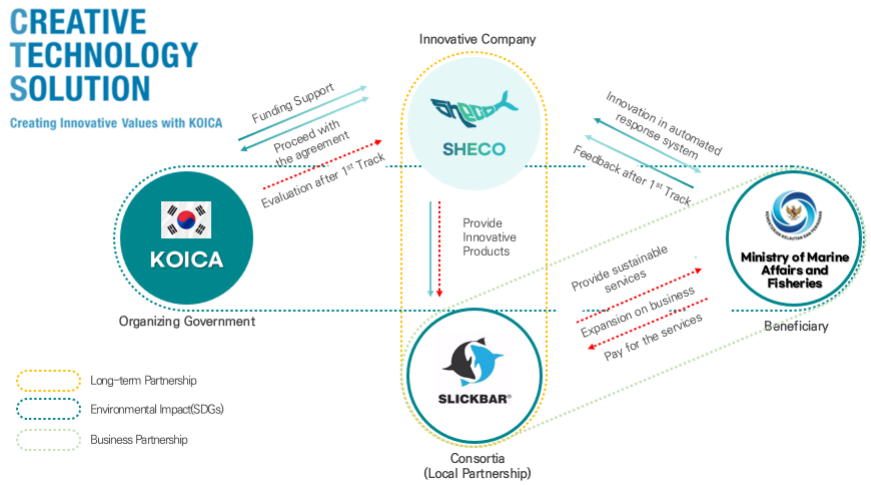
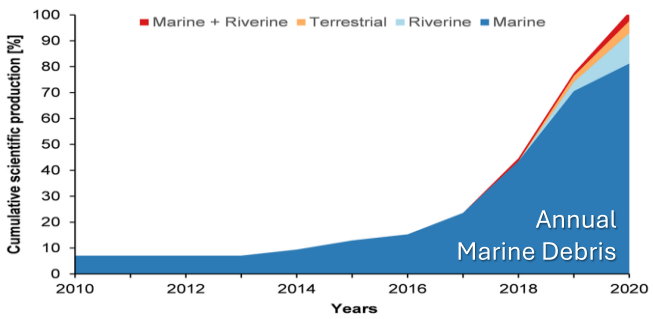
Automating the manual clean-up of 1.29M tons of annual marine debris through the CTS ODA project.

ODA Project: Creative Technology Solution





Milestones & Roadmap

- '25.04 — 1st Product test with local response company (SLICKBAR)
- '25.08 — Distributorship / R&D Agreement with SLICKBAR
- '26.01 — Selected for the CTS project by KOICA
- '26.04 — Collaboration meeting with Ministry of Marine Affairs and Fisheries of Indonesia
- '26.04 — Collaboration meeting with PPS Nizam and site visit for product adoption
- '26~'29 — Adoption of automated response solution across 22 major ports in Indonesia


MMAF Collaboration Meeting


PPS Nizam Port Meeting


Local Testbeds, R&D

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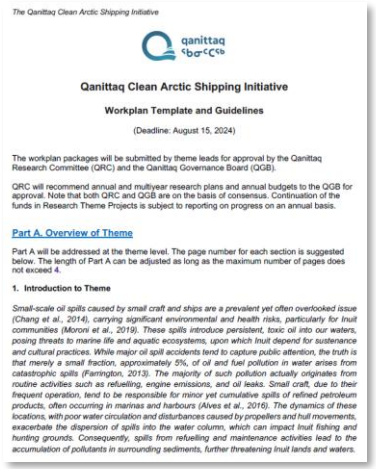
Partnering with Memorial Univ. on the CASI project to establish a self-sustaining spill response system for the Inuit indigenous community.

CASI Project


The Qanittaq Clean Arctic Shipping Initiative

qanittaq

Qanittaq Clean Arctic Shipping Initiative

Workplan Template and Guidelines

(Deadline: August 15, 2024)

The workplan packages will be submitted by theme leads for approval by the Qanittaq Research Committee (QRC) and the Qanittaq Governance Board (QGB).

QRC will recommend annual and multiyear research plans and annual budgets to the QGB for approval. Note that both QRC and QGB are on the basis of consensus. Continuation of the funds in Research Theme Projects is subject to reporting on progress on an annual basis.

Part A. Overview of Theme

Part A will be addressed at the theme level. The page number for each section is suggested below. The length of Part A can be adjusted as long as the maximum number of pages does not exceed 4.

1. Introduction to Theme

Small-scale oil spills caused by small craft and ships are a prevalent yet often overlooked issue (Chang et al., 2014), carrying significant environmental and health risks, particularly for Inuit communities (Moroni et al., 2019). These spills introduce persistent, toxic oil into our waters, posing threats to marine life and aquatic ecosystems, upon which Inuit depend for sustenance and cultural practices. While major oil spill accidents tend to capture public attention, the truth is that merely a small fraction, approximately 5%, of oil and fuel pollution in water arises from catastrophic spills (Farrington, 2013). The majority of such pollution actually originates from routine activities such as refuelling, engine emissions, and oil leaks. Small craft, due to their frequent operation, tend to be responsible for minor yet cumulative spills of refined petroleum products, often occurring in marinas and harbours (Alves et al., 2016). The dynamics of these locations, with poor water circulation and disturbances caused by propellers and hull movements, exacerbate the dispersion of spills into the water column, which can impact Inuit fishing and hunting grounds. Consequently, spills from refuelling and maintenance activities lead to the accumulation of pollutants in surrounding sediments, further threatening Inuit lands and waters.

SHECO	Provide innovative response technology
Memorial Univ.	Apply national project in Canada / Consortia
Nunatsiavut Government	Adopt independent solution for community

Milestones & Roadmap

- ’23.02 Kick-off meeting with Memorial University at SHECO headquarters
- ‘24.04 Collaboration discussion for a national project at ICMCR 2024
- ‘24.11 Apply for Qanittaq Clean Arctic Shipping Initiative
- ‘25.05 Project evaluation by stakeholders
- ’26~’27 Adoption of automated response solution for the indigenous community in Makkovik

Collaboration Meeting with Memorial University

Project Meeting with Inuit Government of Canada


Local Testbed - Makkovik Port

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Establishing national spill response SOPs through the Singapore MPA R&D project and strategic partnership with OSRL.

MPA Project + Industrial Collaboration

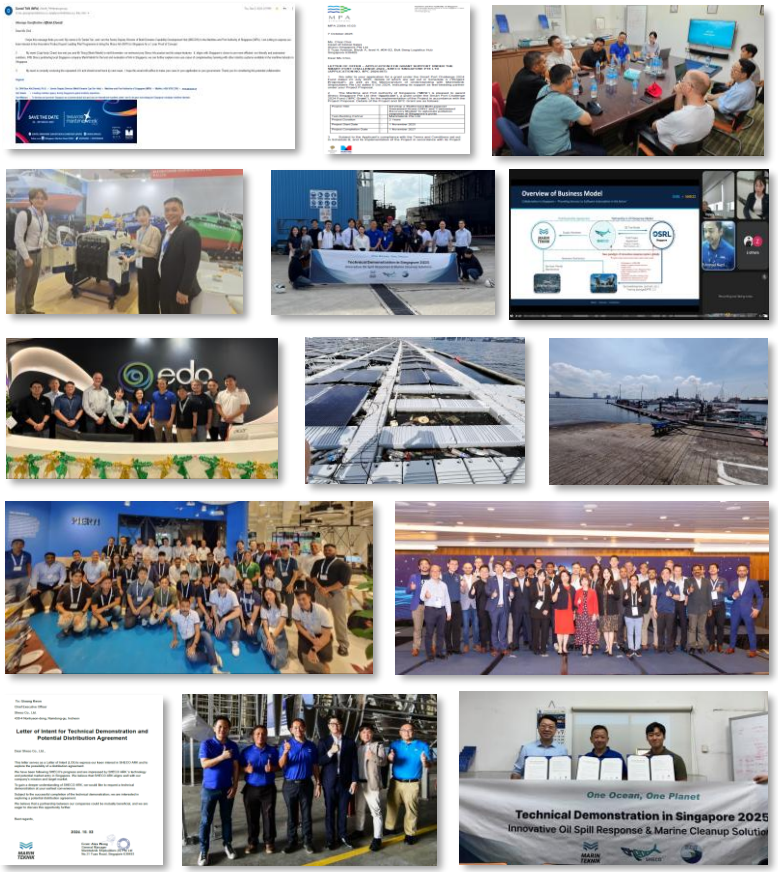
MPA SINGAPORE

OSRL

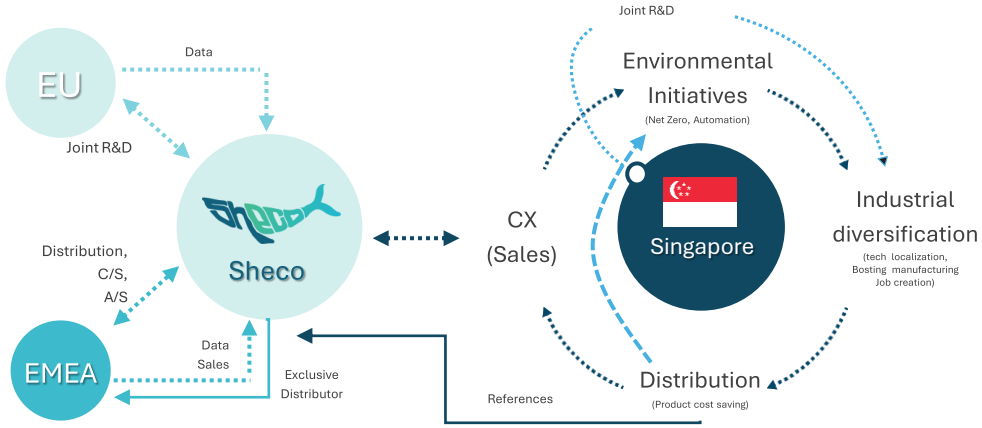
edp

PIER71
Port Innovation Ecosystem Reimagined at BLOCK71

MARIN TEKNIK



Milestones & Roadmap



- ‘24.12 Selected as TOP 8 company in Smart Port Challenge by PIER71
- ‘25.01 Incorporated in Singapore
- ‘25.08 Selected for MINT-Startup Grant by MPA
- ’25.11 Technical demonstration to MPA, PSA, MOT, OSRL
- ‘26.03 Meeting at OSRL and EDP Headquarters
- ‘26.04 Site-visit to EDP solar panel facility
- ’26~’27 Plan for standardization of Marine Cleaning Robots in Singapore

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Driven by national initiatives, Malaysia and Taiwan are leading Asia's emerging spill response market with high demand for automation.

Malaysia

Strategic Position: Malaysia's sole dedicated oil spill response agency.

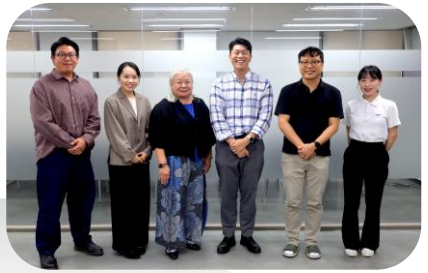
Pain Point & Needs: Automating end-to-end spill response to overcome the manual constraints of a limited 60-person workforce.

- ‘25.10 Kickoff meeting with PIMMAG at RITAG in Japan
- ’26.03 Collaboration meeting at PIMMAG headquarters
- ‘26.04 Review Letter of Intent (LOI) for product sales

Taiwan

新北市政府 New Taipei City Government

YongLi Ocean Engineering



- ‘25.09 Collaboration meeting with YongLi Ocean Engineering at SHECO headquarters
- ’25.12 Product (Sheco Ark-M) export to Taiwan
- ‘26.01 Signed a distributorship agreement
- ‘26.02 Product (Sheco Ark-C, F) export to Taiwan
- ‘26.04 Secure Letter of Intent for product sales
- ‘26.04 Product training for Taiwan Coast Guard
- ‘26.07 Plan to demonstrate at the National Oil Spill Exercise (invited by New Taipei City)

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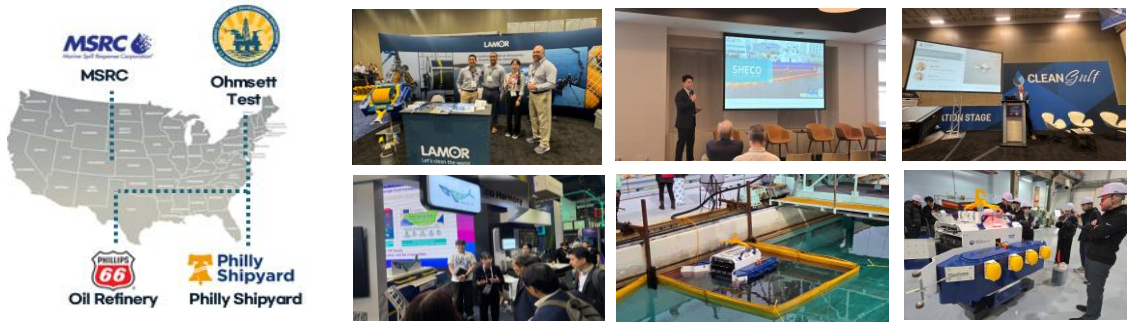
The US and Saudi Arabia are accelerating spill response automation to mitigate severe safety risks and meet compliance.

Saudi Arabia

- ‘24.02 Conducted technical demonstration and received an appreciation letter from NCEC
- ’25.02 Joint R&D agreement with KACST
- ‘25.02 JV agreement with AlphaNarmo KSA
- ‘25.07 Product exports (3 units) to ARAMCO
- ‘25.10 Technical demonstration to SAIL and ARAMCO
- ‘26.01 Product training to SAIL and ARAMCO

USA



- ‘24.01 Won CES innovation awards in 2 categories
- ‘ 25.01 Exhibit and IR at CES 2025
- ‘25.05 Speech at Shell & Chevron Marathon Workshop
- ‘25.10 Conducted product testing and received reports from Ohmsett (under BSEE)
- ‘25.09 IR in NY Climate Week 2025
- ‘25.11 Exhibit and speech in Clean Gulf 2025
- ‘26.05 Technical demonstration at MSRC with Shell, P66, and major oil spill responders

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CSR + Climate Tech + Education: A Replicable Model

4-Party MOU — A Replicable Model for Ocean Sustainability

1. Funds the robot — SK ecoplant
2. Manages funds, purchases robot — World Vision
3. Donates robot to KOEM — World Vision
4. Operates robot + ocean education for students

All four organizations share ESG impact data

KOEM Korea Marine Environment Management Corporation

Company funds → NGO manages → Government operates → Children learn

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Thank you
One Ocean, One Planet, Going Green with Robotics