

Korea's sole environment-specialized R&BD Special Zone



INNOPOLIS
INCHEON INNOVATION CLUSTER

ICT Convergence Environmental Technology Commercialization Mecca

Incheon Innovation Cluster



INCHEON
NATIONAL UNIVERSITY



01 Research & Business Development

Success of R&BD



R&D

Research & development
as the foundation of innovation



Business

**Commercialization strategies
driving market success**



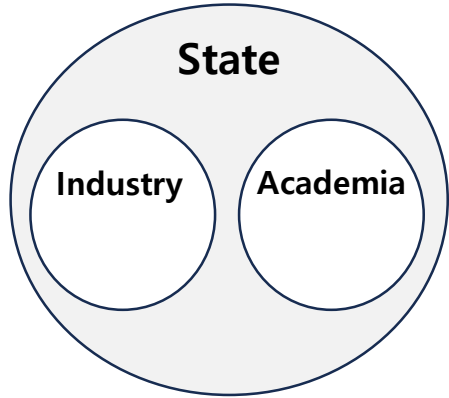
**Intellectual
Property**

Protecting and leveraging
innovation assets

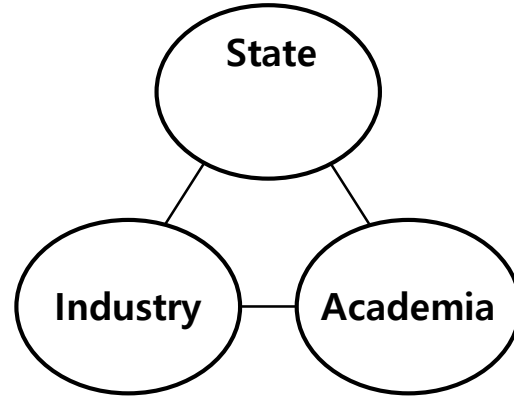
01 Research & Business Development

Three Triple Felix Models

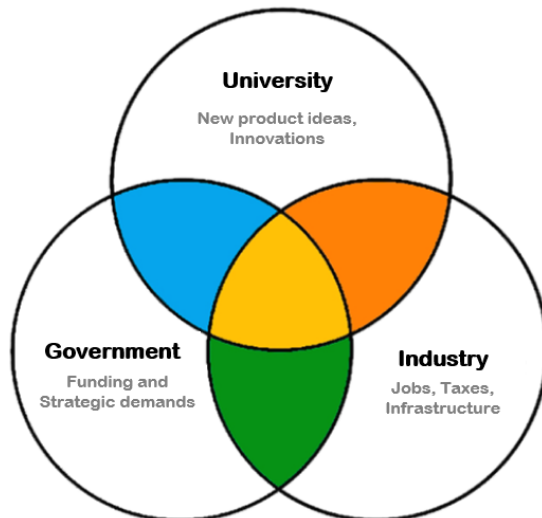
(1) A 'statist' model



(2) A 'laissez-faire' model



(3) The Triple Helix Model



Three configurations

- **Triple Helix I:** Government-dominated (statist model) - Historical in centralized economies
- **Triple Helix II:** Separate spheres with limited interaction (laissez-faire) - Traditional Western industrial model
- **Triple Helix III:** **Balanced collaboration with strong linkages (ideal model) - Modern knowledge economy goal / Tri-lateral networks and hybrid organization**



1990s Origin

Developed by Henry Etzkowitz & Loet Leydesdorff



Dynamic Interaction

Innovation emerges from universities, industry, and government working together



Overlapping Roles

Institutional boundaries blur, enabling hybrid innovation spaces



Knowledge Economy

Key driver of innovation in knowledge-based economies



Real-World Examples

Silicon Valley, Science Parks, INNOPOLIS Korea

02 INNOPOLIS Korea Model



6 INNOPOLISes

Daedeok · 2005
IT, Bio-Medical, Nano, Precision

Daegu · 2011
Medical Devices,
Smart Textiles, Mechatronics

Gwangju · 2011
Photonics, AI, Energy,
Advanced Materials

Busan · 2012
Marine Tech, Smart Logistics,
Bio-Health

Jeonbuk · 2015
Agri-Bio, Carbon Fiber,
Functional Foods

Gangwon · 2025
Bio-Health, Clean Energy,
Smart Agriculture

13 INNOTWONS

Incheon · 2022
ICT-Converged Environmental
Management

Hongneung · 2020
Digital Healthcare

Cheongju · 2019
Smart IT Components & Systems

Pohang · 2019
Advanced New Materials

Jinju · 2019
Aerospace Components &
Materials

Uiju · 2020
Next-Generation Batteries

Naju · 2020
Intelligent Solar & Energy Storage

Ansan · 2019
ICT Components & Materials

Cheonan-Asan · 2020
Next-Gen Automotive Components

Gumi · 2020
Smart Manufacturing Systems

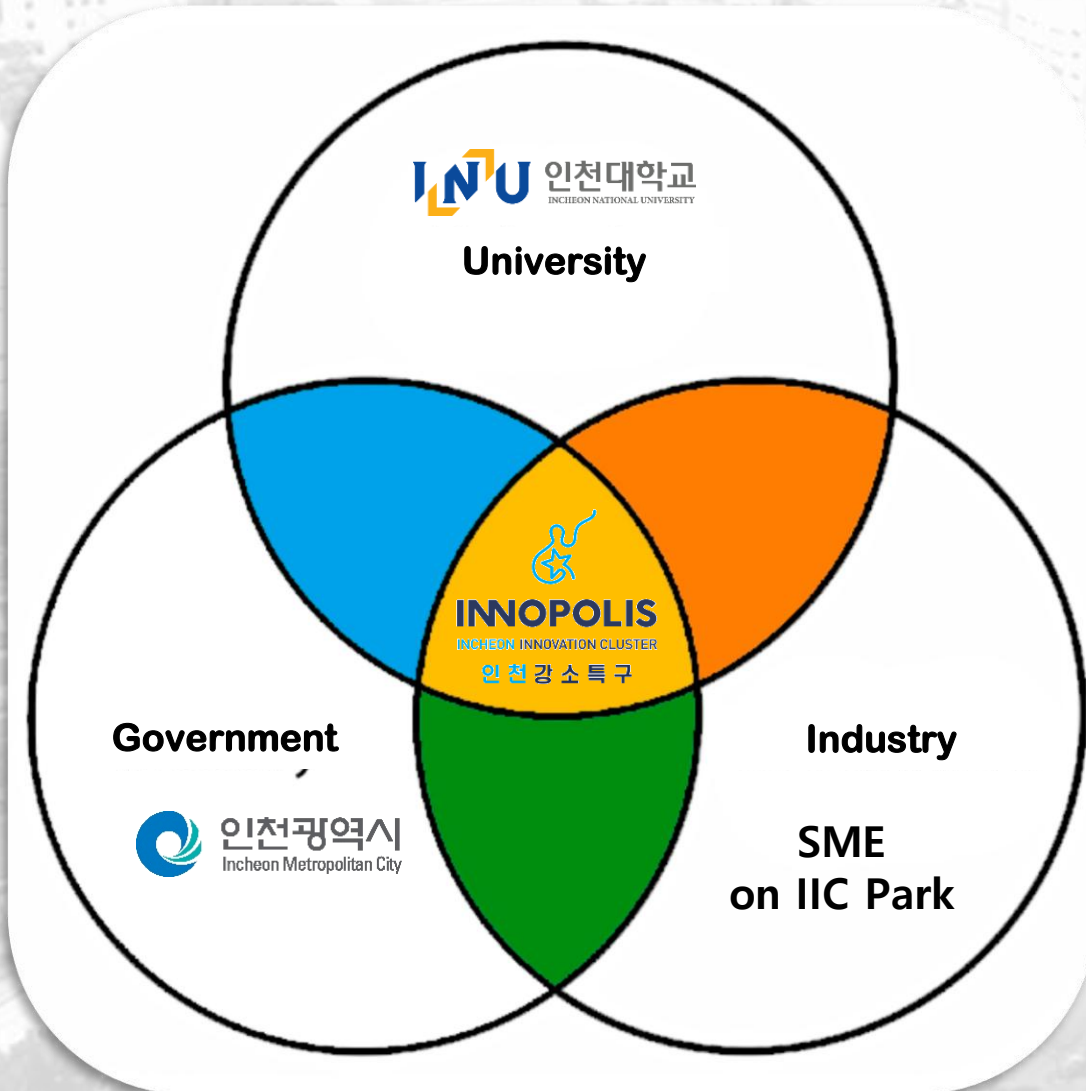
Changwon · 2019
Intelligent Electrical-Mechanical
Convergence

Gimhae · 2019
Bio-Medical & Medical Devices

Gunsan · 2020
Eco-Friendly EV Components

03 Incheon Innovation Cluster Triple Helix

IIC as the institutional convergence zone of three innovation helices



🎓 University — Incheon National University

- Incheon National University
- Institute of Environmental Convergence Technology

🏛️ Government

Incheon Metropolitan City (including sub districts)

🏭 Industry

- Approximately 180-220's SME
- Additional 120-150's SME for new industrial zone

03 Incheon Innovation Cluster Specialized Sectors

3 Specialized Sectors

for treating and managing environmental pollution



Measurement & Treatment of Environmental Pollution Monitoring

Post-treatment and pre-prevention technology for possible environmental pollution by environmental agents

Major Tech.

- Advanced water purification treatment
- Ship air pollution
- Fine dust control technology

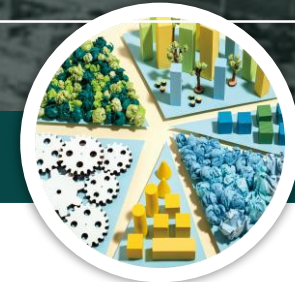


Waste Recycling & Alternative Material Development

Waste recycling and energy conversion for carbon neutrality and energy reduction & **Development of eco-friendly substitute materials** using biomass

Major Tech.

- Recycling of waste plastic
- Anaerobic digestion of bioplastic and waste



AI-based Environmental Management

Environmental management through prediction and **decision-making** applying environmental technology, 4th industrial revolution, digital new dill based **AI and**

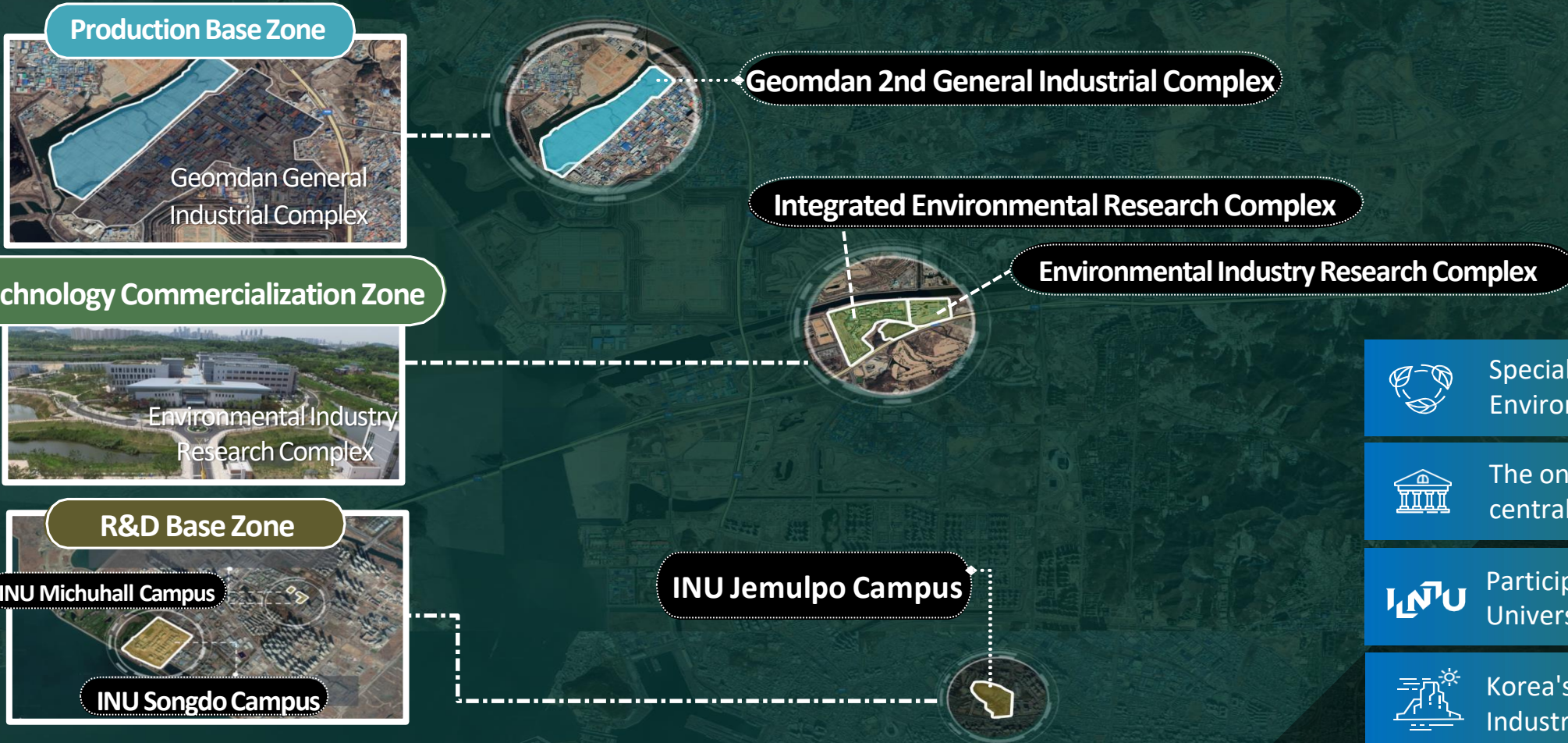
Major Tech.

- Measurement & analysis of marine environment
- Environmental info. Monitoring tech.
- Recyclable resource recovery robots

03 Incheon Innovation Cluster

Location

+ Establishing an ICT-Convergence Hub for Environmental Pollution Treatment & Management + Technology Commercialization



-  Specialized in the Environmental Industry
-  The only participation of central government departments
-  Participation in Incheon National University, a leading start-up in Korea
-  Korea's Largest Environmental Industry Infrastructure Area

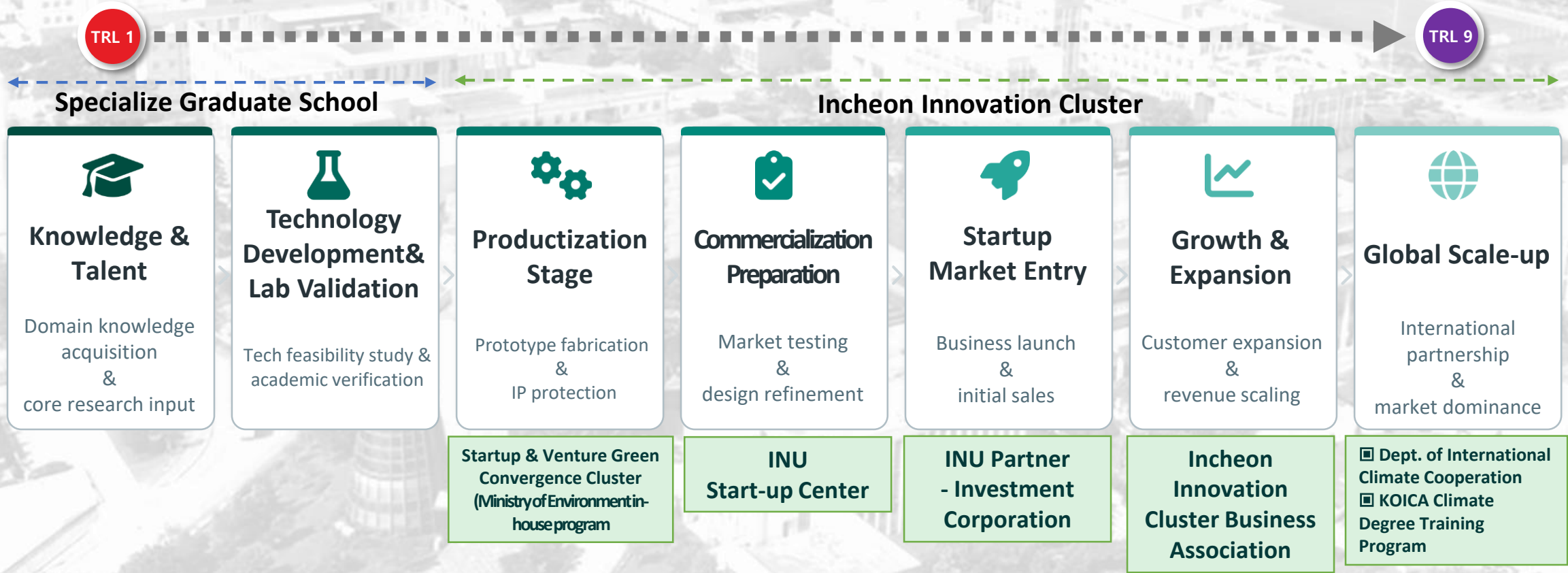
03 Incheon Innovation Cluster

Incheon National University

All-in-One R&BD Platform

Talent Engine

Specialized Graduate School · Environment-Focused Entrepreneurship Track



Ecosystem Support

Incheon Innovation Cluster · Regional Corporate Alliance

03 Incheon Innovation Cluster IIC Branch Office Network

Connecting IIC's R&D innovation to overseas markets through the i-GESP platform

MN Mongolia #1 — Darkhan	PK Pakistan #2 — Karachi	MY Malaysia #3 — Kuala Lumpur	TH Thailand #4 — Bangkok	MN Mongolia #5 — Ulaanbaatar
<p>ESTABLISHED</p> <p>Partner: Mongolian University of Life Sciences, MULS</p> <p>Signed: Nov. 2023</p>	<p>ESTABLISHED</p> <p>Partner: NED University of Engineering & Technology</p> <p>Signed: Sep. 2025</p>	<p>ESTABLISHED</p> <p>Partner: Centre for Innovation & Technology Transfer, University Kebangsaan Malaysia</p> <p>Signed: Oct. 2025</p>	<p>ESTABLISHED</p> <p>Partner: Chulalongkorn University</p> <p>Signed: Nov. 2025</p>	<p>ESTABLISHED</p> <p>Partner: National University of Mongolia</p> <p>Signed: Feb. 2026</p>

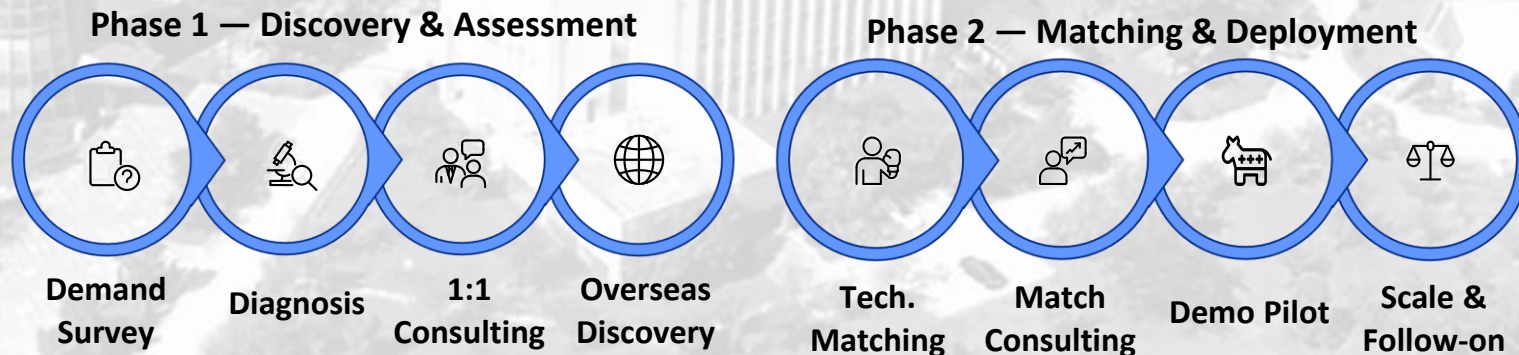
 In Progress

KZ Kazakhstan — Almaty
Kazakh National Agrarian Univ.

IN India — Chennai
Anna University

TN Tanzania —

i-GESP 8-Step Pipeline



03 Incheon Innovation Cluster IIC Branch Office Network

Mongolia-Darkhan



Mongolia-Ulaanbaatar



Pakistan-Karachi



Malaysia-Kuala Lumpur



Thailand-Bangkok



03 Incheon Innovation Cluster I.ENERGY & IIC Confex

Incheon International Environmental Technology Confex

5th Edition

- Sept 3-4, 2026
- Songdo Convensia

K-MICE Certified

Selected as 'K-Promising International Conference'
— up to ₩600M in national funding over 6 years

2025 Highlights

MOU signed with UNIDO; strategic partnership
with INOVASI

@UKM (University Kebangsaan Malaysia)

2022



2023



2024



2025



Incheon Innovation Cluster

03 Korea-Central Asia Science & Technology Center



Korea - Central Asia Science & Technology Center

Establish Sustainable Korea-Central Asia Future Platform
through S&T Based Development Cooperation Model

Strategic Framework: From Foundation to Sustainability



01 Foundation & Outreach

Network Building
Talent Exchange
Governance
Feasibility



02 Cooperation & Execution

Joint R&D
Technical Survey
Pilot Projects
Workshops



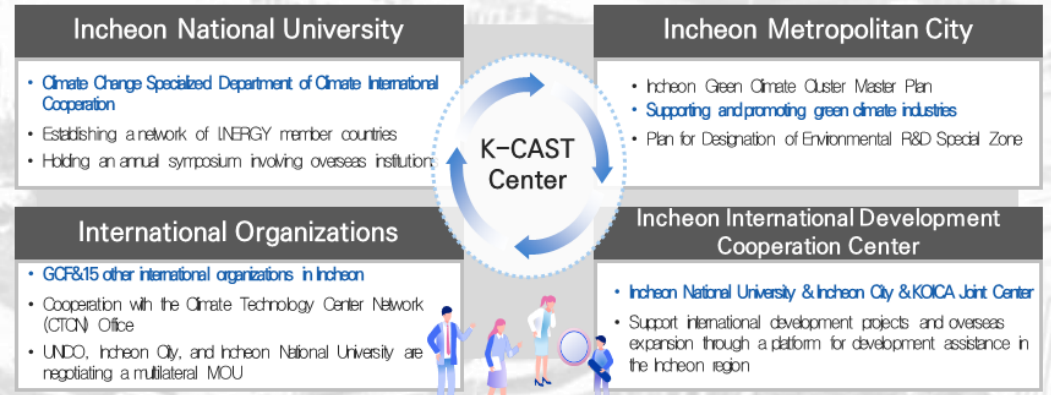
03 Expansion & Sustainability

Demo Projects
ODA Linkage
Business Platform
Incubation

Incheon Innovation Cluster

03 Korea-Central Asia Science & Technology Center

- ▣ The project's principal investigator, Prof. Heekwan Lee, established I.ENERGY in 2011, building a coop. network spanning 30 countries worldwide
- ▣ Sustain active academic & tech exchanges on environment, energy, climate with I.ENERGY and International organizations (KOICA, GCF, CTCN, UNDP, UNIDO).



03 Incheon Innovation Cluster INU-KOICA Degree Program

Capacity Building: INU-KOICA Degree Program

Modular curriculum training convergence experts for climate and environment infrastructure

Technology & Industry

FOUNDATION

- Understanding Climate Environment
- Climate Big-Data Statistics

ADVANCED

- Industrial Infrastructure Inventory
- Sustainable Carbon Capture

PROFESSIONAL

Strategic Outcomes:

- Strengthening K-Climate Technologies
- Industrial Tech Dissemination
- Research-Exchange Cooperation

Climate & Environment Policy

- AI-based Climate/Env. Modeling

- Project Concept Paper (PCP) Prep
- Climate Adaptation Policy

Governance Systems:

- Improvement of Climate Governance
- Policy Formulation Capacity
- Country-Specific Context Analysis

Climate Finance & Enterprise

- Environmental Economics

- Understanding Climate Finance
- Green Finance & Investment

Global Linkages:

- GCF (Green Climate Fund) Networking
- CTCN Technology Transfer
- International Patent Filing Support

★ **Key Feature:** Learner-centered modular curriculum with thesis supervision aligned to partner country needs and ODA project linkages.

03 Incheon Innovation Cluster INU-KOICA Degree Program

Master's Training Program for Climate-Environment Capacity Building



Thesis Supervision & Degree



Incheon Innovation Cluster
· IDCC (International Development Cooperation Center)
· Songdo Global Campus

International Cooperation

KOICA

GCF **Green Climate Fund**

- Adjunct faculty invitation
- INU-KOICA-GCF project-discovery network
- Educational capacity building

CTC N **Climate Technology Centre & Network**

- Tech transfer via PCPs
- International patent filing
- Technology upscaling (TA projects)

K-Climate Tech · Dissemination

Climate-Env · Governance

Climate Finance · Linkage

03 Incheon Innovation Cluster

Why partner with IIC



Korea's Only ENV Special Zone

Unmatched concentration of environmental IP, talent, and infrastructure.



Global Network & Confex Access

Bangkok, Karachi branches; growing MOU partners; annual I-NET Confex (K-MICE certified).



World-Class R&D Infrastructure

2.98 km² zone with INU labs, Comprehensive Environmental Research Complex, and co-located public research institutions.



Full-Cycle Support

IP scouting → incubation → prototype grants → enterprise certification → regulatory sandbox → overseas market entry



Government-Backed Ecosystem

Backed by Ministry of Environment, Ministry of Science & ICT, Incheon City, and INU — policy stability and long-term funding.



Carbon-Neutral Alignment

Aligned with South Korea's 2050 Carbon Neutrality agenda — directly targeting key national decarbonization goals.

Connect with IIC

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