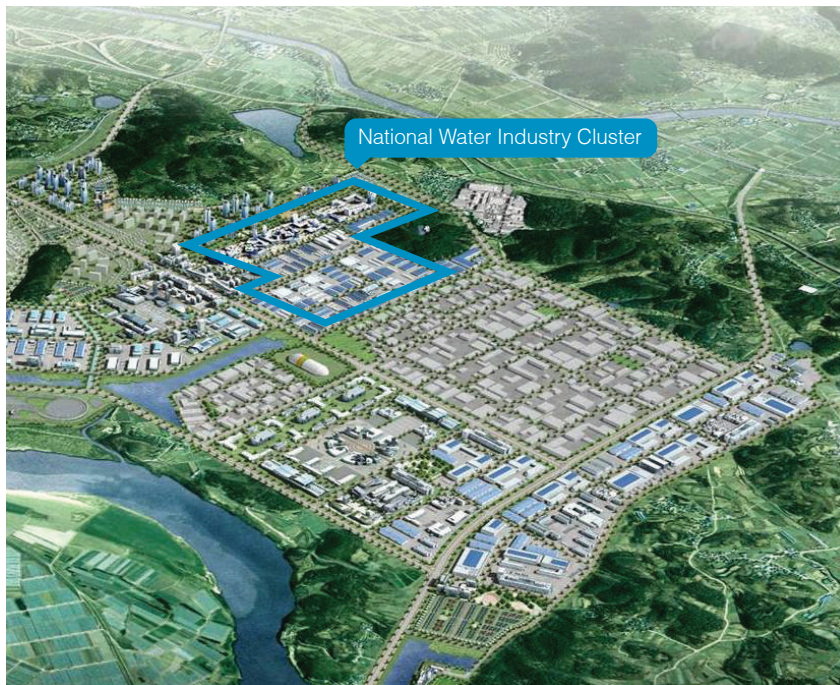


Water Industry Hub

# National Water Industry Cluster

# Daegu, its future blueprint of the National Water Industry Cluster!



## National Industrial Park in Daegu

**Location :** Dalseong County, Guji subdivision    **Size :** 8.5million m<sup>2</sup> (Facilities 4.9million m<sup>2</sup>)    **Project period :** 2009 - 2018

**Project cost :** 2.2 trillion won    **Managing Groups :** LH Group (75%), Daegu Urban Development Corporation (25%)

**Main facilities :** Proving ground for intelligent vehicles & transport system, Water industry cluster, Integrated root industry cluster, Foreign investment zone

**Target Tenant Types :** **Key industry** | machinery, metals, auto parts, electronics

**New Industry fields** | water, IT convergence (medical devices and robotics), renewable energies

**Infrastructure :** **Industrial water** | 31,500m<sup>3</sup>/day    **Tap water** | 13,500m<sup>3</sup>/day    **Wastewater** | 28,000m<sup>3</sup>/day

**Electrical power supply** | max. 120,146kw

## Neighboring Industrial Complexes

**Daegu Technopolis** | support R&D field of National Industrial Complex

Research and Industry, housing, education, culture, and leisure opportunities are well balanced in this multi-functional high-tech complex.

- Gross area : 7.2millionm<sup>2</sup> (Population: approx 50,000, self-sustained area of Daegu)

- Industry field : automotive, machinery such as mechatronics, electronics, research institutes, etc.

**Seongseo Industrial Complex & Dalseong Industrial Complex**(industrial complex in downtown Daegu) | Main industry

- textiles, dyeing processing, machinery & materials, etc.

**Daegu dyeing Industrial Complex** | Main industry

- clothing fabrics, dyeing processing, etc.

Water industry will take up the largest of the world's business market in the next 20 years. Daegu dreams a great achievement in this marketplace with National Industrial Parks and neighboring facilities.



## Development of National Water Industry Cluster (National Project)



**Location :** Within Daegu National Industrial Park

**Developing period :** 2015 - 2017

**Gross area/budget :** 645thousand m<sup>2</sup> / 3.5billion won

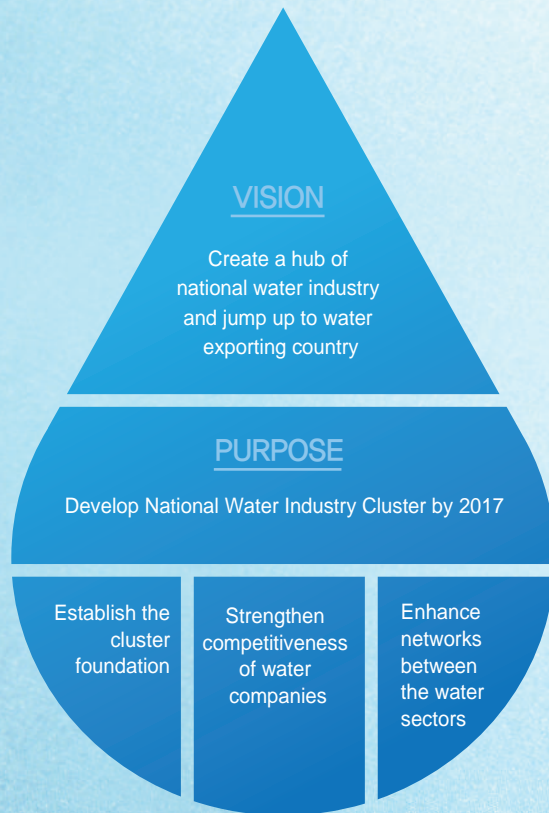
**Developed by:** Ministry of Environment

**Core facilities :** Water Industry Promotion Center (65,000m<sup>2</sup>),  
Test-bed & Demo-plant (100,000m<sup>2</sup>),  
Business Complex (480,000m<sup>2</sup>)

**Construction Period :** January 2016 ~ December 2017



# Water Industry Cluster, Designing National Water Industry!



## ► Major contents

### Establish the cluster foundation

- Establish the Test-Bed and Demo-plants for securing references
- Compose the business complex
- Set up a water industry promotion center and related facilities

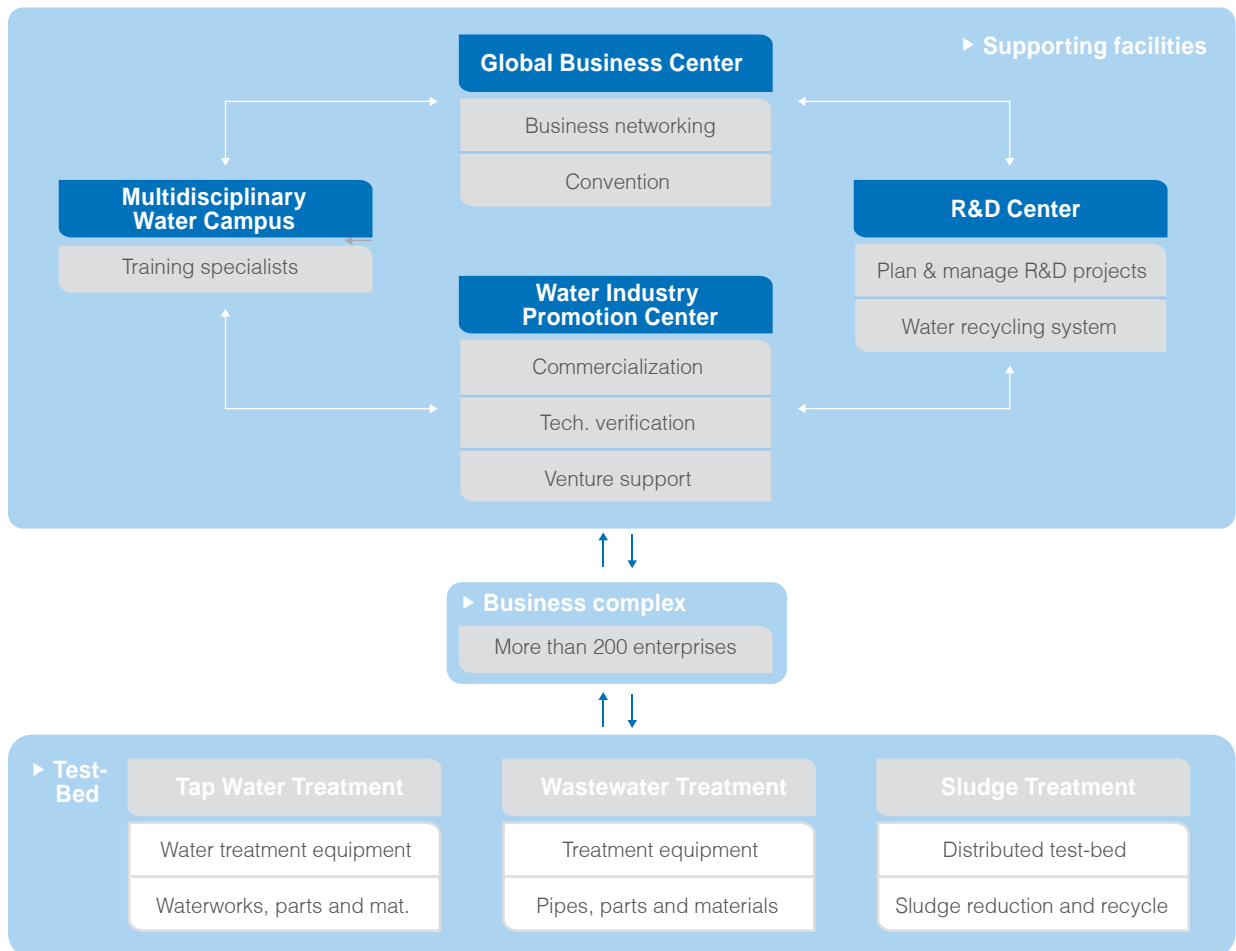
### Strengthen competitiveness of water company

- Enable a lifetime support system
- Make the water industry cluster as a national landmark by concentrating the capabilities of water sectors
- Support technology certification, verification and commercialization

### Strengthen networks between the water sectors

- Provide a value-chain system of water business for the companies in National Industrial Park
- Constitute Korea Water Partnership (KWP)
- Support global marketing and global cooperation with overseas water companies

## ► Structure of Water Industry Cluster



### Test-Bed (100,000m<sup>2</sup>)

- Establish water (water & wastewater) recycling system in National Industrial Park
- Procure the reference by operating full-scale Test-bed
- Develop pilot-scale testing system

### Supporting Facilities (65,000m<sup>2</sup>)

- Water Industry Promotion Center (Support technology certification, verification and commercialization)
- Global Business Center (technology exchange, exhibition and promotion)
- Multidisciplinary Water Campus (Project lab. for research cooperation between Academies and enterprises, Education and training for workforces)

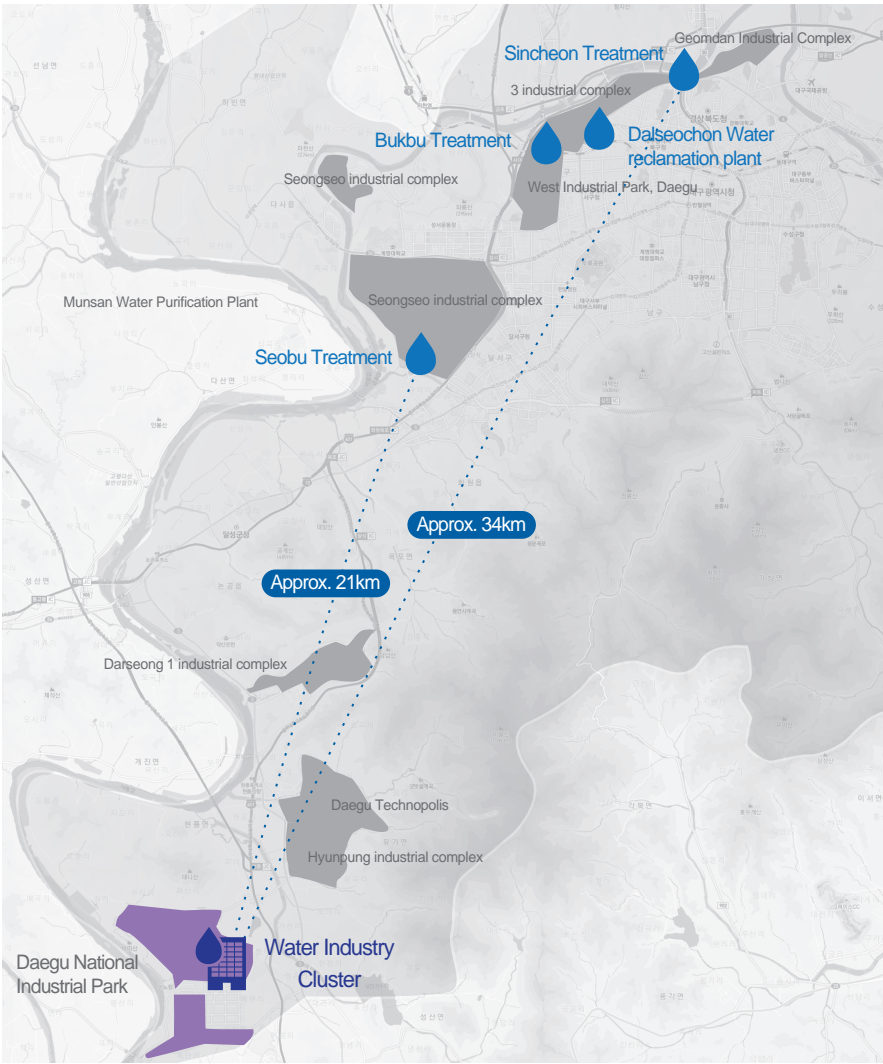
### Business Complex (480,000m<sup>2</sup>)

- More than 200 enterprises

Supporting  
dispersed test-bed

Waste water treatment facilities managed by the Daegu Environmental Corporation will be utilized as the distributed test-beds by linking them to the Test-beds in the water Industry Cluster.

<p>Demo-plant complex for Sludge recycling</p> <p>Seobu and Sincheon Wastewater Treatment Plant</p> <ul style="list-style-type: none"><li>• Wastewater reclamation (quality level up to tapwater)</li><li>• Anaerobic digestion technology</li><li>• Technologies for sludge volume reduction and recycling, etc</li></ul>	<p>Test-bed for advanced wastewater treatment</p> <p>Dalseochon and Bukbu wastewater treatment plant</p> <ul style="list-style-type: none"><li>• Advanced treatment technology for non-organics and micro-pollutants,</li><li>• Technologies with direct connection to the wastewater treatment plants</li></ul>
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Easy access within only one hour from national industrial parks in Pohang, Ulsan, Gumi, and Changwon and global companies like Samsung, Hyundai, and LG



## Logistics and Distribution



- Yeongnam Inland Distribution Center 457,000m<sup>2</sup> (11 warehouses of 154,000m<sup>2</sup>) - Largest in the southern part of Korea
- Daegu Distribution Complex 438,000m<sup>2</sup> (5,186 stores)



# Collaborative network with 3,000 small-giant parts manufacturers

## Business Network

### ► Industrial Distribution

#### Core parts manufacturers clusters (3,238 small giants)

Machinery and metals (1,241), Auto parts (284), IT (186), Medical (97), Chemicals (40), Textiles (639), Other (751)

\* 300 world-leading class companies (12 named by the Ministry of Trade, Industry and Energy)

Hidden champions (20)

Regional small giants (20)

Daegu "Star companies" (126)

### ► Root Industries

#### Technological support for high-value-added and cutting-edge industries

- Root industries (Daegu and Gyeongbuk Province) : 15.3% of the whole nation (843 companies)

\* Metal forming (351), Molding (182), Surface treatment (154), Casting (90), Heat treatment (42), Welding (24)

- Performance evaluation of high-function and high-precision mold prototypes

- 3<sup>rd</sup> Industrial Complex focused on root industries (7,600m<sup>2</sup> lease-based knowledge industrial center to be built)

# R&D and institutional support to help businesses achieve sustainable growth

## R&D Support

### ► R&D Institutions

<b>Daegu Gyeongbuk Institute of Science and Technology</b>	New materials, IT, robotics, energy, and brain science
<b>Electronics and Telecommunications Research Institute</b>	Core technology for IT convergence
<b>Korea Institute of Industrial Technology</b>	New renewal energy, and IT convergence industrial technology
<b>Korea Institute of Machinery &amp; Materials</b>	Machinery and metals, parts materials, mechatronics, and R&D for mold
<b>Korea Automotive Technology Institute</b>	Research for commercialization of intelligent vehicles, and development of powertrain parts
<b>INNOPOLIS Daegu</b>	Commercialization of technology developed in the special zone and total design business
<b>Korea Institute for Robot Industry Advancement</b>	Development of technology for commercialization of intelligent robots
<b>Korea Basic Science Institute</b>	Development of high-tech research devices, and analysis of new materials and compounds
<b>Korea Institute of Science and Technology Information</b>	Development of science and technology information, and super computing

### ► Support Institutions

<b>Daegu Technopark (foundation)</b>	Support for companies in the nano, mobile convergence, bio, and oriental medicine fields
<b>Daegu Digital Industry Promotion Agency (foundation)</b>	Nurturing of the software and digital industries, and support for the visual and new media industries
<b>Daegu Mechatronics and Materials Institute</b>	Support for innovation in IT convergence, mold technology, and heat application manufacturing processes
<b>Daegu-Gyeongbuk Automotive Parts Foundation</b>	Development of test devices for intelligent vehicles and performance testing and evaluation of auto parts
<b>Daegu-Gyeongbuk Design Center (foundation)</b>	Support for SMEs brand development and nurturing of the design industry



# Steady supply of manpower and robust industry-academic cooperation based on outstanding educational infrastructure

## Human Resources

### ► Development of Industrial Manpower

**The specialized high schools and universities of the Daegu region contribute about 50,000 graduates in science and engineering fields to the workforce each year.**

Technicians (24,000) : Junior colleges (20,000 in engineering disciplines) and specialized vocational high schools (4,000)

- Yeungjin College : Electronics, Computer Science
- Yeungnam College of Science and Technology : Machinery, Automobile
- Korea Polytechnics Daegu : Machinery, Computer Science
- Daegu Technical University : Automobile, Aviation
- \* National Skills Competition : 1 st place (2011), 2nd place (2012)
- Gyeongbuk Machinery Technical High School : Machinery, Metals
- Daegu Electronic Technical High School : Electronics, Communication
- Yeungnam Technical High School : Robotics, Energy

High-quality manpower (27,000) :

- Daegu Gyeongbuk Institute of Science and Technology (DGIST) (IT, BT, NT, and MT)
- POSTECH (new materials)
- Kyungpook National University (electronics)
- Yeungnam University (convergence)
- Keimyung University (automobile)



### ► Industry-Academic Cooperation

- Leading universities in the industry-academic cooperation (Kyungpook National University, Keimyung University)
- Leading junior colleges in the industry-academic cooperation (3 colleges including Taegu Science University)
- Innovation Center for Engineering Technology Education for customized expert development (Yeungnam College of Science & Technology)
- Hotline center for industrial technologies to assist companies in addressing technical issues and supporting technological innovation (Kyungpook National University)
- Company R&D centers engaged in industry-academic cooperation to develop innovative and mid-sized companies (4 universities including Kyungpook National University)
- 135 R&D centers willing to cooperate with businesses (4,800 researchers)



# Foreign-invested Company

## Rental Cost Reduction

Item	Complex-type FIZ	Standalone-type FIZ
Requirements	<ul style="list-style-type: none"> <li>• FDI Share of 30% or higher</li> <li>• FDI of more than 2 times land price</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturing company of \$30 million or more</li> </ul>
Reduction Rate	<ul style="list-style-type: none"> <li>• 100% exemption for high-tech companies with FDI of \$1 million or more</li> <li>• 75% reduction for general manufacturing companies with FDI of \$5 million or more</li> </ul>	<ul style="list-style-type: none"> <li>• 100% exemption for government-owned land</li> </ul>
Rental Cost	<ul style="list-style-type: none"> <li>• 1% of land price</li> </ul>	
Lease Period	<ul style="list-style-type: none"> <li>• Up to 50 years</li> </ul>	

## Tax Reduction

Item	Complex-type FIZ	Standalone-type FIZ
Requirements	<ul style="list-style-type: none"> <li>• Manufacturing company of \$10 million or more</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturing company of \$30 million or more</li> </ul>
National Taxes	<ul style="list-style-type: none"> <li>• 100% of income tax (corporate tax) for 3 years and 50% for the subsequent 2 years</li> </ul>	<ul style="list-style-type: none"> <li>• 100% of income tax (corporate tax) for 5 years and 50% for the subsequent 2 years</li> </ul>
Local Taxes	<ul style="list-style-type: none"> <li>• 100% of acquisition tax and property tax, respectively, for any property acquired or retained to perform any reported business for 15 years</li> </ul>	

## Financial Support

Item	Foreign Invested Company
Requirements	<ul style="list-style-type: none"> <li>• Businesses involving in high technology</li> <li>• Businesses with at least 300 regular employees for the manufacturing industry</li> <li>• Foreign Direct Investment (FDI) of 30% or higher</li> <li>• Regular employees with master's degrees or higher, or more than 3 years of research experience; More than 5 employees in the R&amp;D area</li> </ul>
Support Details	<ul style="list-style-type: none"> <li>• FDI subsidies at a rate to be determined through negotiation &lt;Purposes of support&gt;</li> <li>• Land purchase costs, rental costs, construction costs</li> <li>• Purchasing costs for capital goods and research equipment</li> <li>• Subsidies for employment and education/training</li> <li>• Infrastructure installation costs, etc.</li> </ul>

## Event

### Host the 7th World Water Forum

The biggest water-related triennial event in the whole world supervised by the World Water Council

- Date : Sunday, April 12th ~ Friday, April 17th, 2015
- Organizers : Ministry of Land, Infrastructure and Transport, Ministry of Environment, Daegu Metropolitan City, Gyeongbuk Province, World Water Council
- Supervisor : The National Committee for the 2015 World Water Forum Korea
- Size : More than 200 countries, 8,500 participants (35,000 man-days) (the heads of state, minister, scholar, specialist, etc.)
- Program : Political Process, Thematic Process, Regional Process, Science and Technology Process (total four process), More than 300 sessions, Water film festival, EXPO and Various side events.







## National Water Industry Cluster

### Contact information

Inhwan Kim / Director (Overseas Investment Promotion Team of Daegu Metropolitan City Government)  
+82-53-803-3320, inhwan@daegu.go.kr

Eugena Seo / Project Manager (Overseas Investment Promotion Team of Deagu Metropolitan City Government)  
+82-53-803-3315, eunyseo@daegu.go.kr