A Hub of the Water Industry

Korea Water Cluster
Korea Water Cluster

A forward base for water-related new technology development and global market expansion clustering water related enterprises and institutions
Daegu, its future blueprint of the Korea Water Cluster!

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 Korea Water Cluster (National Project)

Location  Within Daegu National Industrial Park
Period  2015 - 2018 (4years)
Area/Budget  650,000㎡ / USD 248 million (KRW 295 billion)
Core facilities  Water Industry Promotion Center etc. (70,000㎡)
               Test-bed & Demo-plant (100,000㎡)
               Industrial Complex (480,000㎡)
Developed by  Ministry of Environment

National Industrial Park in Daegu

Location  Guji-myeon, Dalseong-gun, Daegu Metropolitan City
Area  8,549,000㎡ (2.59 mill. pyeong)
Project period  2009 – 2020
Stage1  2009 – 2016, Stage2  2015 – 2020
Developer  Korea Land & Housing Corporation, Daegu Urban Development Corporation
Target Tenant Types  Next generation electronic communication, advanced machinery, future vehicles, renewable energy, water industry

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.
- area : 7.2million㎡ (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
- textiles, dyeing processing, machinery & materials, etc.
Daegu dyeing industrial Complex
- clothing fabrics, dyeing processing, etc.
Aerial view of the water industry cluster construction project site

Test-beds

Water Industry Promotion Facilities
Korea water cluster, Designing National Water Industry!

We lay the foundation for systematic development of the national water industry and the water industry cluster as its hub, aiming at becoming a water exporting country.

**VISION**
Create a hub of national water industry and jump up to water exporting country

**PURPOSE**
- Enterprise types: Retailer SME
- Medium R&D firms
- Sales structure: Domestic demand-oriented
- Expand export
- Startup and job creation

**Key initiatives**
- Establish the water industry cluster in a systematic manner [Infrastructure, organization, and support system]
- Develop core technologies related to the water industry [R&D]
- Enhance technology readiness level [Technology certification/verification]
- Promote commercialization [Technology commercialization]
- Close support for global market entry

**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**
- Strengthening exchange and cooperation with the world’s leading cities in the water industry
- Implementing a project to build a water industry network with water companies
- Support global marketing and global cooperation with overseas water companies
· Tenant facilities of the national water industry cluster include Water Industry Promotion Center, Global Business Center, Water Convergence R&D Center, and etc.
· A comprehensive water business complex housing more than 100 water-related facilities

**Structure of Korea Water Cluster**

![Diagram of Korea Water Cluster]

**Test-Bed (100,000㎡)**
- 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 (70,000㎡)**
- 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)

**Industrial Complex (480,000㎡)**
- More than 100 enterprises
Supporting dispersed test-bed

Linking the basic environmental facilities managed by Daegu Environmental Corporation to multi-location test-beds of the water cluster
* 8 Waterworks & Sewage Facilities; 6 Purification Plants, 5 Industrial Wastewater Treatment Plants, 7 Sewage Treatment Plants

Demo-plant complex for Sludge recycling
Seobu and Sincheon Wastewater Treatment Plant
- Wastewater reclamation (quality level up to tapwater)
- Anaerobic digestion technology
- Technologies for sludge volume reduction and recycling, etc

Test-bed for advanced wastewater treatment
Dalseocheon and Bukbu wastewater treatment plant
- Advanced treatment technology for non-organics and micro-pollutants.
- Technologies with direct connection to the wastewater treatment plants

* Test-beds

<table>
<thead>
<tr>
<th>Classification</th>
<th>Demonstration Plants</th>
<th>Free Design Zone</th>
<th>Outdoor Experiment Zone</th>
</tr>
</thead>
</table>
| Overview        | Install demo plants for tap water, sewage water, etc.  
· Area 1: Standard processes (Control group)  
· Area 2: Promising technologies | Process management and facility installation by companies and free experiments conducted  
· Necessary utilities incl. power supply, raw water, etc. provided | Area for comprehensive review & experiment  
· various piping types, valves and many other auxiliary facilities  
· To facilitate the development of piping maintenance technologies  
Outdoor experiment zone  
· Flexible operation of large-scale facilities and others as necessary |
| Capacity (m³/day) | Water Purification: 2,000 (1,000 × 2 lines)  
Sewage: 1,000 (500 × 2 lines)  
Wastewater: 1,000 (500 × 2 lines)  
Reuse: 1,000 (500 × 2 lines) | 3,000 (m³/Day)  
1,000 (m³/Day)  
1,000 (m³/Day)  
2,000 (m³/Day) | Washing and treatment of piping, pipe network leakage checks and large-scale equipment testing |
| Applications    | Performance test of parts and equipment including UV sterilization, spin-dryers, etc  
Certification and verification of new processes |  |  |
Dreams of a future water industry
Our march toward success

Establish the Korea Water Cluster with leading global water companies, universities and research institutes

Establishing a bridgehead for China’s water industry market worth USD 84.4 billion

- USD $15.2 million technology transfer contract signed between EnbioCons Co., Korea and Jiangsu Philip Environment Engineering Co., China (Dec. 14, 2015)

- Korea-China joint venture agreement signed to establish a sewage treatment company in China and USD 60.8 million invested by Daegu Environmental Corp., EnbioCons Co., Korea, Jiangsu Philip Environment Engineering Co., and Yixing Industrial Park for Environmental Science & Technology, China
Lotte Chemical, the first anchor company to be located in the Korea Water Cluster

- A membrane manufacturing facility on an area of 32,261㎡ (Construction scheduled to start in August 2016)
- Providing a springboard to success of the Cluster as the green light for investment

Expanding global network with advanced water cities and water industry clusters

- Four party agreement signed between Daegu-Milwaukee-Korea Water Partnership-US Water Council (Apr. 14, 2015)
- A LOI signed between Daegu-NEWTECH, Israel (April 14, 2015)
- A MOU signed between Daegu-Milwaukee on cooperation in the water industry (Sept. 30, 2015)

Strengthening networking through industry-academia-research MOUs

Signed business agreements and investment LOIs with 8 universities, 4 technical/polytechnic colleges, 3 research institutes and 30 companies to foster the Korea Water Cluster

8 universities 4 college 3 research institutes 30 companies
Meet the future of water industry in advance in Daegu!

Daegu has the optimal conditions for the growth of water industry, including convenient transportation, liveable urban environment, plentiful supply of manpower and agglomeration of related companies.

Convenient accessibility
- Changwon, Ulsan and Pohang within an hour
  *Expressway(8), KTX, international airport(Daegu, Gimhae), international port(4)
- 15 minutes to the city center (exclusive for motor vehicles)
- Jungbu Naeryuk Expressway adjoining Hyeonpung IC

Liveable urban environment

Education City of the best academic achievement nationwide
Culture Various cultural performances year round
- International Opera Festival | Int’l Musical Festival, Yangnyeongsi Herb Medicine Culture Festival, Dongseogno Street Festival
- Diverse local culture and leisure attractions in Dalseong around national industrial complexes | Dalseong Reservoir, Dodongseowon Confucian Academy, Biseulsan Azalea Cultural Festival, Leports Valley
Healthcare High quality healthcare services in 12 general hospitals and over 3,000 medical facilities
Center of the Nakdong River Belt

- Gumi electronics
- Daegu (National Industrial Park) water, parts and materials
- Changwon machinery

R&D hub of Yeongnam region

- Over 50 R&D institutions, incl. DGIST, Korea Institute of Industrial Technology, Korea Institute of Machinery & Materials, Korea Institute for Robot Industry Advancement, etc.
- 22.25㎢ of Gyeongsan City designated as R&D Special Zone
- ITS-based intelligent automotive parts testing site located near the complex (construction completed in Apr. 2014)
- High-tech Medical Complex (completed in 2014, 1.03 mill. m² within Sinseon Innovation City

Plentiful supply of manpower

- Over 50 local universities and specialized educational institutions supply 50,000 skilled technical manpower every year
- DGIST(IT / BT / NT / MT), POSTECH(new material), Kyungpook National Univ.(electronics), Yeungnam Univ.(convergence), Keimyung Univ.(automobile), Daegu Haany Univ.(oriental medicine)
- 135 R&D centers able to cooperate with businesses (over 4,800 research manpower)

Agglomeration of related companies

- Water industry-related companies (over 1,800): Service consulting and engineering (760); water-related construction (123); water-related equipment and goods manufacturing (696); sewage/waste water treatment (109); water supply-related (81)
- Key components manufacturers (over 3,300): Machinery and metals (1,241); auto parts (284); electrical/electronics (186); medical (97); chemical (40); textile (639); and others (751)
### Financial Support

#### Requirements

<table>
<thead>
<tr>
<th>Companies with Large Amount of Investment</th>
<th>General Companies</th>
<th>General Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Companies with an investment of $30 million or more</td>
<td>· Manufacturing companies with a total investment of KRW 2 billion or more</td>
<td>· Companies that have performed business in Korea for 3 years or longer</td>
</tr>
<tr>
<td>· Companies with high-tech or parts/materials companies making an investment of $10 million or more</td>
<td>· Cultural business with a total investment of KRW 1 billion or more</td>
<td>· Companies with 10 or more regular employees</td>
</tr>
<tr>
<td>· Business of high-tech and industrial supporting service with an investment of $10 million or more</td>
<td>· Software companies and company affiliated R&amp;D center</td>
<td>· SMEs or mid-sized enterprises with a new investment of KRW 1 billion or more, or large companies with an investment of KRW 30 billion or more in business expansion</td>
</tr>
<tr>
<td>· Companies with 300 or more regular employees</td>
<td>· Industrial supporting service business with 50 or more regular employees</td>
<td>· Job creation of 10% or higher</td>
</tr>
</tbody>
</table>

### Support Details

- **Companies with large amount of investment and general companies**

<table>
<thead>
<tr>
<th>Item</th>
<th>Companies with Large Amount of Investment</th>
<th>General Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidies for Land purchase / Investment</td>
<td>· Within 50% of gross investment</td>
<td>· Up to 5% of the exceeded amount when a total projected cost exceeds KRW 2 bn (max. KRW 1 bn)</td>
</tr>
<tr>
<td>Subsidies for employment</td>
<td>· Up to monthly KRW 500,000 per additional person for 6 months once the number of regular employees exceeds 20</td>
<td>· Same as left</td>
</tr>
<tr>
<td>Subsidies for education &amp; training</td>
<td>· Up to monthly KRW 500,000 per additional person for 6 months once the number of regular employees exceeds 20</td>
<td>· Same as left</td>
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</table>

#### Companies Newly Established and/or Expanding Investment in the Local Area

<table>
<thead>
<tr>
<th>Item</th>
<th>Incentive for land purchase</th>
<th>Incentive for facility investment</th>
<th>Matching ratio b/w central and local gov't</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large company</td>
<td>· Up to 6% of investment amount for facility</td>
<td>· Max. ratio of 65% is from the central government.</td>
<td></td>
</tr>
<tr>
<td>Mid-sized company</td>
<td>· Up to 10% of land purchasing price</td>
<td>· Up to 9% of investment amount for facility</td>
<td></td>
</tr>
<tr>
<td>SME</td>
<td>· Up to 30% of land purchasing price</td>
<td>· Up to 12% of investment amount for facility</td>
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* The benefits are subject to change depending on fiscal conditions and tax system revisions
Tax Reduction

- Up to 75% of Acquisition Tax (50% according to the 'Local Tax Incentives Limitation Act' + 25% according to the 'Daegu Municipal Ordinance')
- About 75% of Property Tax

※ 100% reduction on Acquisition Tax and Property Tax for 5 years is applicable, if a company who signs on an land sale agreement within the end of Dec. 2015 contracts an occupancy agreement by the end of Dec. 2017.