2016 Petrochemical Investment Opportunities In Korea
Petrochemical

Korea’s petrochemical industry has an advantage of being closely located to the world’s largest import market of China as well as the fast growing markets of Southeast Asia and India. Based on such advantage, Korea could reduce distribution costs and delivery time. In addition, thanks to advanced technologies and talented workforce, Korea acquired competitiveness in developing & marketing high value-added products and achieved a higher export ratio (55% of its entire production exported overseas in 2014) than the Middle East and China.

**Industry Overview**

Trend and mid-term outlook of worldwide Petrochemical industry
3 trends of global petrochemical industry

**Competitiveness**

Status of competitiveness of Petrochemical industry in South Korea

**Key Market Players**

Status of major petrochemical companies in South Korea

**Where to Invest**

Location descriptions

1. Yulchon General Industrial Complex
2. Ulsan-Mipo National Industrial Complex
3. Onsan National Industrial Complex
4. Yeosu National Industrial Complex
5. Daesan General Industrial Complex

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**Production ('13)**

USD 9.3 million (7.5% of manufacturing)

**Added value ('13)**

USD 2.2 million (5.4% of manufacturing)

**Employees ('13)**

36,000 (1.3% of manufacturing)

**Export Volume ('14)**

USD 48.2 billion (8.4% of total amount of export)

**Productive Capacity of Ethylene ('13)**

8.5 million (Worldwide No.4, 5.3% market share)
Industry Overview

Trend and mid-term outlook of worldwide Petrochemical industry

Oversupply is expected to intensify in the mid-term because of facility extension.

- Even though the global economic growth is slowing down, rising nations including China is leading the demand in the global petrochemical market.
- Worldwide demand of ethylene* is expected to record an average annual growth rate of 2.6% from 2014 to 2019.
- As a result, share of Asian import market is expected to increase from 44.4% in 2013 to 46.5% in 2019.
- Positive outlook in demand increase is expected in North-America thanks to revival of manufacturing industries with shale gas innovation.
- On the other hand, the growth of demand in saturated market including Japan, Europe, etc. is expected to slow down.

Oversupply is prospected to intensify as production capacity of ethylene is growing 3.5% annually in rising countries like China and India, United States and Middle East.

- Despite the fall in oil prices, petrochemical projects based on gas and coal are still in progress.
- Production capacity of the United States and China is expected to increase by 1,100 ton respectively.
- In the United States, excess supply of ethylene will be increased from 6.5 million ton in 2013 to 8.3 million ton in 2019.
- In the Middle East, mass production and export of ethylene products will continue with the policy to upgrade industry structure.
- On the other hand, production capacity of Japan and Europe is slowing down or continuing stagnation due to the shutting down of deteriorated facilities.

Diversified investment in raw materials is becoming more common centered around the areas (United States, China, etc.) where low-price raw materials are available because of the high oil price seen from 2010 to the first half of 2014.

Low growth trend is intensifying and supply capacity expanded in China, the biggest export market for the petrochemical industry.

Business portfolio that focuses on high value-added products is being pursued by global corporations to optimize profitability.

3 trends of global petrochemical industry

Diversity of raw materials is increasing

Diversified investment in raw materials is becoming more common centered around the areas (United States, China, etc.) where low-price raw materials are available because of the high oil price seen from 2010 to the first half of 2014.

China risk is intensifying

Low growth trend is intensifying and supply capacity expanded in China, the biggest export market for the petrochemical industry.

High value-added product is extending

Business portfolio that focuses on high value-added products is being pursued by global corporations to optimize profitability.
South Korea’s competitiveness in petrochemical industry

**Industry status**

South Korea’s petrochemical industry ranked 4th in the world in terms of production capacity (as of ’14), and 3rd in terms of domestically manufactured production.

- Dow: 10 million ton in terms of capacity resource of Ethylene
- SABIC, ExxonMobil etc.: 8 million ton or more
- LG Chem: 2.2 million ton
- Lotte Chemical: 2.1 million ton
- Yeochun NCC: 1.9 million ton

(based on capacity resource of Ethylene)

**Export Status**

Domestic export of petrochemicals is highly dependent on the Chinese market and is slowing down due to the intensified competition in China.

- High dependence on export market, especially on China (approximately 50% of entire export amount)
- Petrochemicals export amount is slowing down due to intensified competition in Chinese market after the highest record of 48.4 billion dollar in 2013.

**Export Status by Product**

- Trend of export increase and decrease is different by products.
- Self-sufficiency of China has big influence.
- Export amount of elementary petrochemicals has increased since 2014 and the amount of intermediates has increased since 2013.

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**Comparison of capacity resource by companies**

<table>
<thead>
<tr>
<th>Company</th>
<th>Capacity Resource (million ton/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SABIC</td>
<td>12</td>
</tr>
<tr>
<td>Dow</td>
<td>10</td>
</tr>
<tr>
<td>ExxonMobil</td>
<td>8</td>
</tr>
<tr>
<td>Sinopec</td>
<td>5</td>
</tr>
<tr>
<td>LG Chem</td>
<td>4</td>
</tr>
<tr>
<td>Lotte Chemical</td>
<td>2</td>
</tr>
<tr>
<td>PFCC</td>
<td>1</td>
</tr>
<tr>
<td>JTT</td>
<td>0</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Trend of petrochemicals export in South Korea (Unit: million dollar, %)**

<table>
<thead>
<tr>
<th>Category</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>Jan-Oct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrochemicals</td>
<td>35,715</td>
<td>45,587</td>
<td>45,882</td>
<td>48,977</td>
<td>48,214</td>
<td>31,951</td>
</tr>
<tr>
<td>(Growth rate)</td>
<td>(30%)</td>
<td>(27.6%)</td>
<td>(0.6%)</td>
<td>(5.4%)</td>
<td>(0.3%)</td>
<td>(0.2%)</td>
</tr>
<tr>
<td>Export to China</td>
<td>17,070</td>
<td>21,600</td>
<td>21,660</td>
<td>23,490</td>
<td>22,050</td>
<td>14,420</td>
</tr>
<tr>
<td>(Export rate)</td>
<td>(47.8%)</td>
<td>(47.4%)</td>
<td>(47.2%)</td>
<td>(48.6%)</td>
<td>(45.7%)</td>
<td>(45.1%)</td>
</tr>
</tbody>
</table>

Source: Ministry of Trade, Industry and Energy, Korea International Trade Association

**Trend of increase and decrease rate of export by products**

<table>
<thead>
<tr>
<th>Category</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>15 Jan-Aug</th>
<th>Dependence on China** (As of 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary petrochemicals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>57.5</td>
</tr>
<tr>
<td>Synthetic resins</td>
<td>26.9</td>
<td>52.0</td>
<td>17.6</td>
<td>-4.7</td>
<td>-2.3</td>
<td>-37.9</td>
<td>15.1</td>
</tr>
<tr>
<td>Export amount</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export volume</td>
<td>-7.5</td>
<td>20.5</td>
<td>15.1</td>
<td>-4.9</td>
<td>2.3</td>
<td>1.2</td>
<td>18.6</td>
</tr>
<tr>
<td>Intermediates</td>
<td>31.0</td>
<td>46.6</td>
<td>7.4</td>
<td>31.5</td>
<td>5.1</td>
<td>-11.9</td>
<td>15.5</td>
</tr>
<tr>
<td>Export amount</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export volume</td>
<td>10.5</td>
<td>11.7</td>
<td>6.7</td>
<td>23.7</td>
<td>22.4</td>
<td>36.7</td>
<td>18.5</td>
</tr>
<tr>
<td>Synthetic raw materials</td>
<td>28.6</td>
<td>15.7</td>
<td>0.0</td>
<td>9.3</td>
<td>1.5</td>
<td>-13.3</td>
<td>45.0</td>
</tr>
<tr>
<td>Export amount</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export volume</td>
<td>-0.3</td>
<td>-1.3</td>
<td>7.0</td>
<td>7.6</td>
<td>0.2</td>
<td>1.0</td>
<td>35.9</td>
</tr>
<tr>
<td>3 finished products</td>
<td>20.6</td>
<td>30.0</td>
<td>-18.7</td>
<td>-5.5</td>
<td>-17.4</td>
<td>-31.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Synthetic rubber</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export amount</td>
<td>55.6</td>
<td>66.7</td>
<td>-7.7</td>
<td>-20.6</td>
<td>-6.0</td>
<td>-18.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Export volume</td>
<td>7.2</td>
<td>11.5</td>
<td>11.4</td>
<td>10.2</td>
<td>3.4</td>
<td>3.2</td>
<td>4.8</td>
</tr>
</tbody>
</table>

* : Proportion of the entire export of petrochemicals
** : Dependence on China is based on the export amount in 2014

Source: Ministry of Trade, Industry and Energy, Korea International Trade Association
Performance of domestic company is dropping due to the decline of sales and operating profits for several years.

- Decreased demand of China, which is the biggest export market and increased self-sufficiency of China resulted in sluggish export and deteriorated performance of companies.
- Due to the diversified investment of raw materials when oil prices are high, companies are suffering due to the recent low oil prices.
- Despite the decreased sale figure in 2015, operating profit has increased thanks to the cost reduction resulting from low oil prices.

- Sales of major petrochemical companies in South Korea has dropped by 21.3%. However, operating profit has increased by 85.4% over the same period compared to the previous year.
- Profitability of NCC companies producing elementary petrochemicals - intermediates rebounded. On the other hand, profitability of companies producing finished product was sluggish because Chinese companies producing finished products became highly self-sufficient.

### Key Market Players

**Status of major petrochemical companies in South Korea**

![Graph showing performance trend of major petrochemical companies in South Korea](image)

*Source: Korea Institute for Industrial Economics & Trade, “4QET Industrial & Economic Review”, Quoted from 2015-09*

#### Investment trend on raw materials of domestic companies (Unit: thousand ton)

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Raw material</th>
<th>Main Facility / Production capacity</th>
<th>Operation period</th>
<th>Investment Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG Chem</td>
<td>natural gas</td>
<td>ethylene 840, PE 800</td>
<td>’19</td>
<td>Kazakhstan</td>
</tr>
<tr>
<td>Lotte Chemical</td>
<td>natural gas</td>
<td>PE 380, PP 80</td>
<td>’15</td>
<td>Uzbekistan</td>
</tr>
<tr>
<td>Hanwha Chemical</td>
<td>shale gas</td>
<td>ethylene 1,000, EG 700</td>
<td>’18</td>
<td>United States</td>
</tr>
<tr>
<td>Condensate</td>
<td>MX 1,000</td>
<td></td>
<td>’16</td>
<td>South Korea</td>
</tr>
<tr>
<td>Hanwha Total Petrochemical</td>
<td>natural gas</td>
<td>ethylene 1,000</td>
<td>Undecided</td>
<td>Iraq</td>
</tr>
<tr>
<td>SK Incheon Petro Chem</td>
<td>Condensate</td>
<td>PX 1,000</td>
<td>’14</td>
<td>South Korea</td>
</tr>
<tr>
<td>Hysong</td>
<td>LPQ</td>
<td>Propylene 300</td>
<td>’15</td>
<td>South Korea</td>
</tr>
<tr>
<td>SK Gas</td>
<td>LPQ</td>
<td>Propylene 600</td>
<td>’16</td>
<td>South Korea</td>
</tr>
<tr>
<td>S-Oil</td>
<td>residue</td>
<td>Propylene</td>
<td>’17</td>
<td>South Korea</td>
</tr>
</tbody>
</table>

*Source: Korea Petrochemical Industry Association*

#### Company performance

- Sales of major petrochemical companies in South Korea has dropped by 21.3%. However, operating profit has increased by 85.4% over the same period compared to the previous year.
- Profitability of NCC companies producing elementary petrochemicals - intermediates rebounded. On the other hand, profitability of companies producing finished product was sluggish because Chinese companies producing finished products became highly self-sufficient.

#### Table of major production companies

<table>
<thead>
<tr>
<th>Product category</th>
<th>Major production company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary petrochemicals, Intermediates (9 companies)</td>
<td>NCC: LG Chem, Lotte Chemical, Yeosun NCC, Korea Petrochemical</td>
</tr>
<tr>
<td></td>
<td>NCC+BTX: SK Global Chemical, Samsung Total Petrochemical</td>
</tr>
<tr>
<td></td>
<td>BTX: GS Caltex, S-Oil, Hyundai Cosmo</td>
</tr>
<tr>
<td>3 finished products</td>
<td>NCC: LG Chem, Korea Petrochemical, SK Global Chemical, Hanwha General Chemical, Lotte Chemical, Tongsuh Petrochemical, Samyang Petrochemical, Capro, Taekwang Industrial etc.</td>
</tr>
<tr>
<td></td>
<td>Synthetic rubber (4 companies)</td>
</tr>
<tr>
<td></td>
<td>Kumho Petrochemical, Kumho Polychem, SK Global Chemical, LG Chem</td>
</tr>
<tr>
<td>Others (6 companies)</td>
<td>Samsung BP Chemicals, OCI, Yongsan Chemicals, Isu Chemical etc.</td>
</tr>
</tbody>
</table>

*Source: Korea Petrochemical Industry Association*
## Where to Invest

### Location Descriptions

<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Yulchon General Industrial Complex</strong></td>
<td>Possible to invest in the 1,320,000 m² of idle land in the Yeosu-Yulchon General Industrial Complex 1. This petrochemical site allows foreign investment to be made through private contracts, offering a competitive site price. Closely located to Gwangyang Steel and Hyundai Steel / Yeosu Airport (6 km), Gwangyang Port (20 km)</td>
</tr>
<tr>
<td><strong>2. Ulsan-Mipo National Industrial Complex</strong></td>
<td>Korea’s petrochemical industry has the world’s 4th largest production capacity, and the Ulsan-Mipo National Industrial Complex is one of the two largest petrochemical industrial complexes. POSCO PLANTEC Plant 1 (the Yongyeon Industrial Complex) is now put up for sale.</td>
</tr>
<tr>
<td><strong>3. Onsan National Industrial Complex</strong></td>
<td>Korea’s petrochemical industry has the world’s fourth largest production capacity, and the Ulsan-Mipo National Industrial Complex is one of the two largest petrochemical industrial complexes. POSCO PLANTEC Plant 2 (the Onsan Industrial Complex) is now put up for sale.</td>
</tr>
<tr>
<td><strong>4. Yeosu National Industrial Complex</strong></td>
<td>A stable supply of raw materials is possible thanks to abundant electricity and Gwangyang Steel Works Production Process, the world’s single largest crude steel producer. Based on these strengths, this industrial cluster is suitable for enhancing competitiveness, which is necessary to enter the Northeast Asian markets</td>
</tr>
<tr>
<td><strong>5. Daesan General Industrial Complex</strong></td>
<td>Geographically favorable location for export to China, with S-Oil, LG Chem, and Hyundai Oilbank situated nearby, forming the value chain of the petrochemical industry</td>
</tr>
</tbody>
</table>
1. Yulchon General Industrial Complex 1

Investment Highlights

Location Description
Possible to invest in the 1,320,000 m² of idle land in the Yeosu-Yulchon General Industrial Complex 1. This petrochemical site allows foreign investment to be made through private contracts, offering a competitive site price.
Closely located to Gwangyang Steel and Hyundai Steel / Yeosu Airport (6 km), Gwangyang Port (20 km)

Key Rationale
• Possible to secure an abundant and stable supply of raw materials
• With lack of land for petrochemical investment in Korea, the Yulchon General Industrial Complex 1 provides a competitive location. Serving as a logistics hub of Northeast Asian trade

Location Requirements
- Recommended Business Sector: Petrochemical manufacturing facilities linked with renewable energy facilities
- Type: Pre-sale (*Free Trade Zone [FTZ] in Yulchon 1 available for rent)
- Land Zoning: General Industrial Complex
- Investment Condition: Pre-sale Price: 117 USD/m²
  (Tax relief available for at least $10 million of manufacturing investment)

Location Overview
Case References

Lotte Versalis Elastomers
- Investment Purpose: Establishment of a special rubber plant in the Yeosu Industrial Complex
- Land Area and Purchase Price: 140,000 m² (23.7 million USD)
- Investment Volume: approx. 125 million USD
- By 2018, it plans to establish a plant that can manufacture 50,000 tons of environmentally friendly synthetic rubber (SIS/SBS) annually.
- It will annually produce 200,000 tons of special rubber, such as solution styrene butadiene rubber (SSBR) and high-functional synthetic rubber (EPDM).
- *SIS is used as a hot-melt adhesive for various adhesive tapes and disposable diapers, SBS is thermoplastic elastomers that are used for shoe soles and toys, SSBR is a key material of eco-friendly tires, and EPDM is used as materials of various industrial parts.*

Kumho Petrochemical
- Kumho Petrochemical signed an investment agreement for the establishment of a plant in the Yulchon General Industrial Complex 1 (Feb. 21 in 2013)
- Site: Approx. 160 million m²
- Employees: Approx. 500 people
- It plans to produce 180,000 tons of Tire Derived Fuel (TDF) products per year. (Tire Derived Fuel (TDF) refers to power plant fuel derived from the finely cut waste tires of 3~20 mm in size.)

Business Considerations

Market Perspective
- Global Market Volume: 930.8 billion USD (2013)
  (Domestic 80.5 billion USD)

Business Suggestion
- Construction of petrochemical manufacturing facilities linked with renewable energy facilities

Main Costs
- Pre-sale Price: 383 USD/㎡ (average)
- Rent: 126 USD/㎡ (average)
- Wage: 2,588 USD (real wage of Jeollanam-do Province)

Business Cluster

Major Corporations in the region
- **Upstream**: Kumho Petrochemical, POSCO Kwangyang Mill, Hyundai Steel Mill, and etc.
- **Downstream**: Lotte Versalis, Hanmaek Teco Industrial Co., and etc.
- 71 companies moved in the Yulchon General Industrial Complex 1

Potential Customers
- Domestic companies that supply petrochemical products

Related Organization
- Relevant government agencies: Gwangyang Bay Area Free Economic Zone Authority (GFEZA), Korea Land and Geospatial Informatix Corporation, Korea Occupational Safety & Health Agency, Korea Electrical Safety Corporation, and Korea Environment Corporation
- Financial institutions: Commercial Banks, Korea Credit Guarantee Fund, and etc.
Infrastructure

Utilities
- Water supply: supply capacity 35,000 tons/day, residential water 4,000 tons/day (source of water intake: Juam Reservoir)
- Waste water: waste water treatment plant, treatment capacity 35,000 tons/day
- Industrial waste: disposed in landfill at the waste treatment facility in the complex
- Electricity: voltage 154 kV, capacity 22 MVA
- Communications: Yeosu Telephone Office provides 2,500 lines.

Transportation
- Airport: Yeosu Airport (6 km) - Seoul (8 flights/day), Jeju (2 flights/day)
- Railroad: Jeolla Line, Yulchon Station (5 km) - Seoul (449.4 km), Busan (227 km), Daejeon (281.5 km)
- Road: Namhae Expressway Suncheon IC (2 km) - Seoul (460 km), Busan (232 km), Daejeon (296 km)
- Port: Gwangyang Port (20 km) - cargo handling capability 51.369 million tons, cargo berthing capacity 47 ships, Yeosu Port (40 km) - cargo handling capacity 2,633 million tons, cargo berthing capacity 8 ships

Labor & Material

Labor Condition
- Regional population: (Unit: persons, %)

<table>
<thead>
<tr>
<th>Items</th>
<th>Population</th>
<th>Available labor force</th>
<th>Bachelor's</th>
<th>Master's</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeollanam-do</td>
<td>1,728,749</td>
<td>1,037,817</td>
<td>14,093</td>
<td>60.0</td>
<td>0.1</td>
</tr>
<tr>
<td>Yeosu-si</td>
<td>268,727</td>
<td>171,322</td>
<td>2,331</td>
<td>63.8</td>
<td>0.9</td>
</tr>
</tbody>
</table>

- Average wage: 2,588 USD (as of April 2015, real wage of Jeollanam-do Province)

Core Resource Supply
- Abundant Utilities: An ample source of electricity (4 plants including Hanbit Nuclear Power Plant) and industrial water (2 dams including Juam Dam, Seomjin River, and Yeongsan River)
- Favorable supply of raw materials: The world's single largest crude steel producer, Gwangyang Steel Works Production Process (18 million tons/year); Korea's largest petrochemical complex, Yeosu National Industrial Complex (fertilizer 1.36 million tons/year), oil refining (650,000 barrels/day), Petrochemical (5.7 million tons/year)

Environment

Living Conditions
- Education: 23 middle schools (12,219 students), 15 high schools (11,787 students), 1 special-education school (148 students), 1 junior college (1,520 students), 1 university (3,317 students), 1 graduate school (312 students)
- Medical Facilities: 3 general hospitals, 243 hospitals, and 40 community health centers
- Others: 5 tourist hotels, 1 membership resort, etc.

Government Support
- Cash grants: High-tech enterprises, with foreign investment ownership more than 30%
- Tax reduction & exemption: 100%, 50% of corporate/income tax (for 5 and 2 years respectively), acquisition tax/property tax (15 years), custom duties (for 3 years)
- Provincial subsidies: Granted by provincial governors within the local government budget after going through deliberation of the Investment Promotion Council
- Special support for large-scale foreign-invested enterprises: Special support that exceeds the amount of general support is provided for the companies with at least 300 million USD of foreign investment or with at least 1,500 regular workers.
- Facilities grants: less than 5% of the installation costs exceeding 1.67 million USD
- Investment/Employment subsidies: When more than 20 people are newly hired, 500 USD per person from the 21st employee can be given per month up to 12 months.
- Education and Training subsidies: When more than 20 people are newly hired, 500 USD per person from the 21st employee can be given per month up to 12 months.
Korea’s petrochemical industry has the world’s 4th largest production capacity, and the Ulsan-Mipo National Industrial Complex is one of the two largest petrochemical industrial complexes. POSCO PLANTEC Plant 1 (the Yongyeon Industrial Complex) is now put up for sale.

**Key Rationale**
- Well-established logistics infrastructure, including KTX and Ulsan Port, which is Korea’s largest industrial logistics port and the world’s 4th largest liquid cargo handling port
- Great accessibility to East Asia’s largest markets, such as China and Japan
- One of the country’s largest industrial complexes and large-scale storage facilities for liquid cargo

**Location Requirements**

<table>
<thead>
<tr>
<th>Recommended Business Sector</th>
<th>Purchase conditions of POSCO PLANTEC Plant 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Pre-sale</td>
</tr>
<tr>
<td><strong>Land Zoning</strong></td>
<td>National Industrial Complex</td>
</tr>
<tr>
<td><strong>Investment Condition</strong></td>
<td>Land Area: 51,482 m² / Building Area: 22,003 m²</td>
</tr>
<tr>
<td></td>
<td>Buildings: Office buildings, factories, etc. (18 buildings)</td>
</tr>
<tr>
<td></td>
<td>Machinery: cranes (50 units), etc.</td>
</tr>
</tbody>
</table>

**Target Area**
- Total Area: 48,443,732 m²
- Available Area: 51,482 m²

**Location Overview**

- Well-established logistics infrastructure, including KTX and Ulsan Port, which is Korea’s largest industrial logistics port and the world’s 4th largest liquid cargo handling port
- Great accessibility to East Asia’s largest markets, such as China and Japan
- One of the country’s largest industrial complexes and large-scale storage facilities for liquid cargo

**Related Companies (14)**
- Major companies: Dongwoo Petrochemical Corp., Samsung Petrochemical Co., etc.
- Oil refining material treatment business: Guling Oil and Chemicals Co., Runbo Petrochemical, etc.
INITZ Company Overview

- INITZ was jointly established by SK Chemicals and Japanese chemical company Teijin.
- It plans to invest approx. 295.83 million USD in the Ulsan-Mipo National Industrial Complex by 2018 (June 23, 2014).

Investment Overview

- It plans to invest 295.75 million USD in the business related to Poly Phenylene Sulfide (PPS)—INITZ's newly developed plastic material.
- INITZ is exclusively responsible for the production and marketing of PPS, which SK Chemicals has successfully developed through investment in R&D for 8 years.
- PPS (Poly Phenylene Sulfide) is a kind of super engineering plastic with high heat resistance and chemical resistance. It is increasingly being used as a material to replace metal in the automotive, electrical and electronic, and high-tech industries.
- SK Chemicals has a sales target of 291.67 million USD by 2024 in the PPS sector. The global PPS market is currently dominated by major companies such as CPC (USA), DIC (Japan), and Toray (Japan). INITZ aims to become one of the world’s top three players in the PPS market by 2019 by increasing its global market share to 20%.

Investment Benefits and Effects

- Corporate tax exemption during the first 5 years, followed by 50% corporate tax reduction for the next 2 years. Reduction on custom duties imposed on imported capital goods. Local tax reduction is also given according to the region.
- New employment of 122 people as well as synergy effects, including an enhanced competitiveness of domestic high-tech chemical industry, are expected.

Business Considerations

Market Perspective

Global Market Volume: 930.8 billion USD (2013)
(Domestic 80.5 billion USD)

Business Suggestion

Creation of new value through cooperation with chemistry-related (petrochemicals, fine chemicals, etc.) enterprises which moved in the industrial complexes in Ulsan Metropolitan City (national industrial complex and general industrial complex)

Main Costs

Average Pre-sale Price: 139 USD/㎡, down payment in the Yongyeon area 20%, middle payment (1 month) 30%, balance payment (4 months) 50%
Wage: 3,218 USD (Real wage of Ulsan Metropolitan City, as of April 2015)

Business Cluster

Major Corporations in the region

- Upstream and downstream: Hyundai Mobis, Hyundai Motors Company, Daihan Swiss Chemical, Miwon Chemicals Co., Korea Engineering Plastics Co., KPX Chemical Co., Hanhwa Chemical Co., BASF Korea, Dongsuh Petrochemical Corp., Kumho petrochemical
- Petrochemical companies: 162 resident corporations

Potential Customers

- Domestic companies that supply petrochemical products

Related Organization

- Financial institutions: A multitude of financial institution branches at home and abroad
Infrastructure

Utilities
- Water supply: Industrial water (705,000 tons/day, usage 641,000 tons/day), residential water (supply capacity 268,000 tons/day [the supply rate of water utility 82%], water charge 0.4 USD/ton)
- Waste water: Disposed at the sewage treatment plant in the complex (treatment capacity: 250,000 tons/day)
- Electricity: Entry route (KOSPO Youngnam Power → Sinulsan Transforming Station → transforming stations in the complex 4 sites) → resident companies, supply capacity (voltage 154 kV, capacity, power receiving capacity 4,825 million kW, power distribution capacity 580,000 kW)
- Communications: 707,400 lines provided
- Industrial waste: Contracted out to Korea Environment Corporation and 12 firms including Kotentech, Yoosung, and Yoonikeun
- Energy supply facilities: Ulsan Comprehensive Gas and Kyungdong City Gas (output 17.452 million tons/year, supply for industrial use 15.706 million tons/year)

Transportation
- Airport: Ulsan Airport (3km) - Seoul (7 flights/day), Jeju (2 flights/day)
- Railroad: Gyeongbu Line and Donghae Nambu Line accessible through KTX Ulsan Station, Taehwagang Station (formerly Ulsan Station), and Hyomun Station
- Road: Gyeongbu Expressway Eonyang IC (25 km), Ulsan Expressway Ulsan IC (10 km)
- Port: Ulsan Port (cargo handling capacity 24.823 million tons/year, cargo berthing capacity 71 ships)

Labor & Material

Labor Condition
- Regional population: (Unit: persons, %)

<table>
<thead>
<tr>
<th>Items</th>
<th>Total Population</th>
<th>Available labor force</th>
<th>Bachelor's</th>
<th>Master's</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gyeongsan-gu, Pop.</td>
<td>3,119,571</td>
<td>1,974,411</td>
<td>351,198</td>
<td>34,313</td>
<td>6,300</td>
</tr>
<tr>
<td>Ulsan Metropolitan</td>
<td>1,071,673</td>
<td>719,360</td>
<td>125,331</td>
<td>10,641</td>
<td>1,673</td>
</tr>
</tbody>
</table>

- Average wage: 3,218 USD (as of April 2015, real wage of Ulsan Metropolitan City)

Core Resource Supply & Environment
- Stable supply of raw materials and human resources: The supply of raw materials is ensured through the national industrial complexes (Onsan, etc.) and general industrial complexes (Maegok, Jungsan, Bonggye, etc.) in Ulsan Metropolitan City; and human resources related to the petrochemical industry are easily secured.
- The Ulsan Support Center of Korea Research Institute of Chemical Technology; Korea Testing & Research Institute, Yeongnam Headquarters; Ulsan Fine Chemical Industry Center; and the Center for Practical Use of Biochemical (under construction)
- Kombinat industry: Raw materials are easily supplied and intermediate products are supplied directly from adjacent plants, which contributes to reducing a waste of time and space, and even by-products and wastes can be re-used.

Living Conditions
- Education: 194 kindergartens (18,615 students), 62 middle schools (43,116 students), 55 high schools (47,637 students), 12 vocational high schools (10,864 students), 2 junior colleges (11,576 students), 2 universities (16,039 students)
- Medical Facilities: 4 general hospitals, 90 hospitals, 530 clinics, 346 dental hospitals, 282 oriental hospitals, 8 community health centers, etc.
- Others: 9 hotels, 13 sports facilities, 4 city parks, 6 culture & welfare facilities, etc.

Government Support

Business types eligible for support:
- Business that involves a highly sophisticated technology, industrial support service enterprises, resident companies in an individual-type foreign investment zone

Support Details
- National tax (corporate tax, income tax): tax exemption for 5 years + 50% tax reduction for the next 2 years
- Local tax (acquisition tax): tax exemption for 15 years
- Local tax (property tax): tax exemption for 7 years + 50% tax reduction for 3 years
- Employment subsidies, education and training subsidies, and facilities grants
Korea’s petrochemical industry has the world’s fourth largest production capacity, and the Ulsan-Mipo National Industrial Complex is one of the two largest petrochemical industrial complexes.

POSCO PLANTEC Plant 2 (the Onsan Industrial Complex) is now put up for sale.

**Recommended Business Sector**
POSCO PLANTEC Plant 2 (Onsan Industrial Complex)

**Type**
Pre-sale

**Land Zoning**
National Industrial Complex

**Investment Condition**
- Land Area: 102,161 m² / Building Area: 16,129 m²
- Buildings: Office buildings, moving shelters, etc. (28 units)
- Machinery: cranes (31 units), etc.

**Location Overview**

- **Target Area**
  - Total Area: 25,939,303 m²
  - Available Area: 102,161.3 m²

**Location Description**
Korea’s petrochemical industry has the world’s fourth largest production capacity, and the Ulsan-Mipo National Industrial Complex is one of the two largest petrochemical industrial complexes.

**Key Rationale**
- Well-established logistics infrastructure including KTX and Ulsan Port, which is Korea’s largest industrial logistics port and the world’s 4th-largest liquid cargo handling port
- Great accessibility to Northeast Asia’s largest markets such as China and Japan
- One of the country’s largest industrial complexes and large-scale storage facilities for liquid cargo

**Recommended Companies**
- Dongwha Petrochemical Corp., Sunchon Petrochemical Co., etc.
- Oil re-refining material treatment business: Ulsan Heavy Oil (UNOH, Ulsan Heavy Oil), etc.
Odfjell Terminals Korea was jointly established in May 2002 by Korea Petrochemical and Odfjell SE (Norway), the world's largest liquid chemical logistics services enterprise.

Overland Storage Tank: The company holds a total of 87 tanks, fully equipped with tank heating facility and state-of-the-art equipment for environmental protection.

Reasons behind Investment Decision:

- Around the harbor is located the oil reserve base of the Korea National Oil Corporation as well as Korea's largest petrochemical complex, where major domestic refineries, such as SK and S-OIL, and a number of petrochemical companies are forming a cluster.
- A rapid and smooth local transport of goods is possible through Ulsan Port, adjoining Gyeongbu Expressway and several local national highways; and it is easy to transport goods overseas by ship thanks to an excellent geographic accessibility to the neighboring countries with a high demand of liquid cargo, such as Japan and China.
- Thanks to the depth of the water, the berthing of large ships is easier compared to other ports in the West Sea or Japan. Water levels at the port facilities are relatively low because there are a lot of relatively recent storage facilities, which would appeal to customers for tank rent than storage facilities in Japan where rent fee for tanks is high.
- Blessed with the natural environment and relatively favorable weather conditions, the city rarely sees large-scale natural disasters that can greatly interfere with port operations.
- The very safe and efficient handling of ship activity at Ulsan Port.

Business Considerations

Market Perspective

(Domestic 80,503 million USD)

Business Suggestion

Creation of new value through cooperation with chemistry-related (petrochemicals, fine chemicals, etc.) enterprises which moved in the industrial complexes in Ulsan Metropolitan City (national industrial complex and general industrial complex)

Main Costs

Average Pre-sale Price: approx. 68 USD/㎡ (Trimonthly constant payment over 2 years with a 1-year grace period)
Wage: 3,218 USD (Real wage of Ulsan Metropolitan City, as of April 2015)

Business Cluster

Major Corporations in the region:
- Upstream and Downstream: POSCO Plantec, Odfjell Terminals Korea, LS Oil and Chemicals, Unimaxpolysack, Hanwha Onsan Factory, Sejin Heavy Industries, JeongilStolthavenUlsan
- Petrochemical companies: 80 resident corporations

Potential Customers:
- Domestic and foreign companies that supply petrochemical products
- Potential foreign-invested companies

Related Organization:
- Financial institutions: A multitude of financial institution branches at home and abroad
Infrastructure

Utilities
- Water supply: Industrial water 342,000 tons/day (Taking Nakdong River as a source of water intake, simultaneous use of industrial and residential water is possible)
- Waste water: Treatment capacity 150,000 tons/day (disposed at the Onsan Sewage Treatment Plant)
- Electricity: Voltage 154kV, capacity, power receiving capacity 1.8 million kW, power distribution capacity 0.24 million kW
- Communications: Onsan Telephone Office provides 52,600 lines.
- Energy supply facilities: Ulsan Kyungdong City Gas (supply capacity: 15.706 million tons/year)

Transportation
- Airport: Ulsan Airport (20km) - Seoul (7 flights/day), Jeju (2 flights/day)
- Railroad: Donghae Nambu Line (2.3km, Namchang-ri boundary-Daean-ri boundary) and Onsan Line (11.7km, Namchang-ri Junction-Bangdo-ri) accessible through Onsan Station, KTX Ulsan Station also accessible
- Road: Gyeongbu Expressway (Eonyang IC, 25km), Ulsan Expressway (Ulsan IC, 15km) / National Highway Route 7 (Gyeongju-Ulsan-Busan), National Highway Route 14 (Ulsan-Busan)
- Port: Onsan Port located in the complex - cargo handling capacity 15,984 million tons, cargo berthing capacity 32 ships

Labor & Material

Labor Condition
- Regional population: (Unit: persons, %)

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<thead>
<tr>
<th>Items</th>
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<td>-</td>
<td>719,360</td>
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<td>10,641</td>
</tr>
</tbody>
</table>

- Average wage: 3,218 USD (as of April 2015, real wage of Ulsan Metropolitan City)

Core Resource Supply
- Reliable supply of raw materials and human resources: It is easy to secure an adequate supply of raw materials through the national industrial complexes (Mipo, etc.) and general industrial complexes (Maegok, Jungsan, Bonggye, etc.) in Ulsan Metropolitan City, and human resources related to the petrochemical industry can be easily secured.
- Ulsan Support Center of Korea Research Institute of Chemical Technology; Korea Testing & Research Institute, Yeongnam headquarters; Ulsan Fine Chemical Industry Center, and the Center for Practical Use of Biochemical (under construction)

Environment
- Education: 62 middle schools (43,116 students), 55 high schools (47,637 students), 2 junior colleges (11,576 students), 2 universities (16,039 students)
- Medical Facilities: 4 general hospitals, 90 hospitals, 530 clinics, 346 dental hospitals, 282 oriental hospitals, and 8 community health centers
- Others: 9 hotels, 13 sports facilities, 4 city parks, 6 culture & welfare facilities, 1 urban street planting area, and 1 funeral facility

Living Conditions

Government Support

Business types eligible for support:
- Business that involves a highly sophisticated technology, industrial support service enterprises, resident companies in an individual-type foreign investment zone

Support Details
- National tax (corporate tax, income tax): tax exemption for 5 years + 50% tax reduction for the next 2 years
- Local tax (acquisition tax): tax exemption for 15 years
- Local tax (property tax): tax exemption for 7 years + 50% tax reduction for 3 years
- Employment subsidies, education and training subsidies, and facilities grants
4. Yeosu National Industrial Complex

Investment Highlights

Location Description
A stable supply of raw materials is possible thanks to abundant electricity and Gwangyang Steel Works Production Process, the world's single largest crude steel producer. Based on these strengths, this industrial cluster is suitable for enhancing competitiveness, which is necessary to enter the Northeast Asian markets.

Key Rationale
- Korea's largest petrochemical complex, with excellent accessibility to Gwangyang Port and Mokpo Port on the world's major arterial courses
- An ample and stable supply of raw materials, such as steel, algae, medicinal herbs, power, industrial water, etc.
- Serving as a bridgehead for entry into Northeast Asia's largest markets such as China and Japan

Location Requirements

<table>
<thead>
<tr>
<th>Recommended Business Sector</th>
<th>Petrochemical manufacturing business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Pre-sale</td>
</tr>
<tr>
<td>Land Zoning</td>
<td>National Industrial Complex</td>
</tr>
<tr>
<td>Investment Condition</td>
<td>Pollution-causing business</td>
</tr>
</tbody>
</table>

Location Overview

- Related Companies: Lotte Chemical, LG Chem, Hanwha Chemical, Chang-sin Chemical, Y-Enic
- Korea's largest petrochemical complex, with excellent accessibility to Gwangyang Port and Mokpo Port on the world's major arterial courses
- An ample and stable supply of raw materials, such as steel, algae, medicinal herbs, power, industrial water, etc.
- Serving as a bridgehead for entry into Northeast Asia's largest markets such as China and Japan

Target Area
- Total Area: 50,649,710 m²
- Available Area: 6,645 m²
Established in 1998 and then designated as a foreign investment zone in 2000, the Yeosu plant of BASF Korea now has an annual capacity of producing 190,000 tons of MDI, 160,000 tons of TDI, and 20,000 tons of CCD, all of which are polyurethane-based raw materials (*MDI is used as a raw material of polyurethane foam, insulation material, automotive interior material, spandex, and shoe soles).

Investment Overview

- On June 14, 2011, Jeollanam-do Province and BASF (German) signed an investment agreement to build a production facility of polyurethane-based raw materials in the Yeosu National Industrial Complex.
- According to the agreement, BASF plans to invest 66.7 million USD in increasing the annual production capacity of raw materials of the existing production factory in the Yeosu National Industrial Complex from the current 190,000 tons to 250,000 tons.
- On July 28, the company signed an 60.8 million USD investment agreement with Jeollanam-do Province.
- By 2018, it plans to invest a total of 57.8 million EUR (approx. 60.8 million USD) in the Yeosu National Industrial Complex, with the aim of increasing the capacity of the Ultrasone manufacturing plant to annually produce 6,000 tons of highly functional engineering plastic products (PPSU).

(*Due to its excellent chemical resistance and mechanical strength, polyphenylene sulfone (PPSU) is used as raw materials of pipe fittings, baby bottles, coffee machine parts, and medical equipment parts.)

Business Considerations

Market Perspective  Global Market Volume : 930.8 billion USD (2013)
(Domestic 80.5 billion USD)

Business Suggestion  Possible to create new value and develop a new market in the petrochemical industry and other related fields, through collaboration with resident companies in the Yeosu National Industrial Complex and occupant enterprises in the nearby industrial complexes.

Main Costs  Average Pre-sale Price : 191 USD/㎡ (down payment 10%, half-yearly constant payment according to land use season)
Wage : 2,818 USD (the total per capita wage of Jeollanam-do Province)

Business Cluster

Major Corporations in the region  • Upstream and Downstream : Lotte Chemical, LG Chem, Hanwha Chemical, Chang-shin Chemical, Y-Entec
• Petrochemical companies : 118 resident corporations

Potential Customers  • Domestic companies that supply petrochemical products

• Financial institutions : Korea Development Bank, Kookmin Bank, Kwangju Bank, Standard Chartered Bank, Industrial Bank of Korea, Hana Bank, Woori Bank, Shinhan Bank, Post Office, and NH Bank
Infrastructure

Utilities
- Industrial water: Juam Dam supply capacity 540,000 tons/day, usage 400,000 tons/day (※ back-up source of water supply: Sueo Dam 340,000 tons/day)
- Residential water: Supplied by purifying industrial water through each company’s own purification system, supply capacity 540,000 tons/day
- Waste water: All disposed at the sewage treatment plant in the complex (treatment capacity 135,000 m³/day, throughput 73,000 m³/day)
- Electricity: supply capacity 840,000 kW (Honam Thermal Power Plant: 300,000 kW, Yeosu Thermal Power Plant: 540,000 kW)
- Power demand: 580,000 kW
- Communications: Out of 8,800 lines in total, Yeosu Telephone Office provides 6,600 lines.
-Cogeneration plants: A total of 5 corporations including Yeocheon NCC Co., Ltd. supply heat to them and their affiliates and electrical power is transmitted by KEPCO
- Industrial gas: Supplied by the resident companies Daesung Industrial Gases Co., Ltd., Praxair Korea Co., Ltd., Air Liquide Korea Co., Ltd., and SPG Chemical Co., Ltd.
- City gas: Daehwa City Gas supplies the complex with city gas.

Transportation
- Airport: Yeosu Airport (10 km), Sacheon Airport (86 km)
- Railroad: Yeocheon Station in Jeolla-do Province (5.32 km, Seoul 437 km, Gwangju 128 km)
- Road: Honam Expressway, Namhae Expressway Suncheon IC (33 km), National Highway Route 17 (Yeosu ~ Suncheon ~ Namwon ~ Jeonju)
- Port: 14 jetties including Nakpo Pier, Jungeung Pier, and Wonju Pier (31 ships in the 2,000 ~ 300,000-ton class, handling capacity 146.66 million tons/year), the project to construct the Gwangyang Port container terminal is under way (54 berths)

Labor & Material

Labor Condition
- Regional population: (Unit: persons, %)

<table>
<thead>
<tr>
<th>Items</th>
<th>Total Population</th>
<th>Available labor force</th>
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<th>Master's</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeollanam-do</td>
<td>Population ratio</td>
<td>-</td>
<td>62.0</td>
<td>8.6</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td>-</td>
<td>1,728,749</td>
<td>1,037,817</td>
<td>148,836</td>
</tr>
<tr>
<td>Yeosu-si</td>
<td>Population ratio</td>
<td>-</td>
<td>63.8</td>
<td>10.4</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td>-</td>
<td>268,727</td>
<td>171,322</td>
<td>27,866</td>
</tr>
</tbody>
</table>

- Average wage: 2,618 USD (the total per capita wage of Jeollanam-do Province)

Core Resource Supply
- Abundant Utilities: An ample source of electricity (4 plants including Hanbit Nuclear Power Plant) and industrial water (2 dams including Juam Dam, Seorin River, and Yeongsan River)
- Reliable supply of raw materials: The world's single largest crude steel producer, Gwangyang Steel Works Production Process (18 million tons/year); Korea's largest petrochemical complex, the Yeosu National Industrial Complex (fertilizer 1.36 million tons/year), oil refining (650,000 barrels/day), Petrochemical (5.7 million tons/year)

Environment
- Education: 67 elementary schools (15,912 students), 27 middle schools (10,590 students), 10 general high schools (7,485 students), 3 specialized high schools (2,251 students), 1 special-purpose high school (425 students), 1 junior college (1,305 students), 1 university (5,163 students), 1 graduate school (305 students)
- Medical Facilities: 3 general hospitals, 5 hospitals, 127 clinics, 60 dental hospitals, 47 oriental hospitals, 1 community health center, and 1 convalescent hospital
- Others: 7 tourist hotels, 3 indoor stadiums, and 15 cultural facilities

Living Conditions
- Business types eligible for support:
  - Business that involves a highly sophisticated technology, industrial support service enterprises, resident companies in an individual-type foreign investment zone

Support Details
- National tax (corporate tax, income tax): tax exemption for 5 years + 50% tax reduction for the next 2 years
- Local tax (acquisition tax): tax exemption for 15 years
- Local tax (property tax): tax exemption for 7 years + 50% tax reduction for 3 years
- Employment subsidies, education and training subsidies, and facilities grants

Government Support
5. Daesan General Industrial Complex

Investment Highlights

Location Description
Geographically favorable location for export to China, with S-Oil, LG Chem, and Hyundai Oilbank situated nearby, forming the value chain of the petrochemical industry

Key Rationale
• Being located close to Daesan Port, the nearest export port to China. A convenient transportation system with Dangjin-Daejeon Expressway and National Highway Route 38 nearby. It has other outstanding locational conditions in various aspects.
• R&D cooperation and convenient supply of raw materials at a low price are possible, not only because of the proximity to the large-scale industrial complexes, such as the Daesan and Daejuk complexes, but because of plentiful raw material industries, such as petrochemical, steel, and automotive industries.

Location Requirements

<table>
<thead>
<tr>
<th>Recommended Business Sector</th>
<th>Heavy oil upgrading facilities, chemical material production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Pre-sale</td>
</tr>
<tr>
<td>Land Zoning</td>
<td>General Industrial Complex</td>
</tr>
<tr>
<td>Investment Condition</td>
<td>Petroline manufacturing business</td>
</tr>
</tbody>
</table>

Target Area
• Total Area: 1,103,283㎡
• Available Area: To be discussed
Hyundai Oilbank

Hyundai Oilbank Company Overview
• Hyundai Oilbank, Korea’s first private refiner, was established in 1964 and is based in Daesan, with 5 branch offices at home and 18 international offices. It has secured the industry’s highest rate of heavy oil upgrading, embarked on a project to increase the production capacity of the aromatic (BTX) and entered the lube base oil business.

Investment Overview
• Amount Invested : Approx. 2.5 billion USD (heavy oil upgrading facilities : 1.67 billion USD, BTX : 0.83 billion USD)
• Products : Gasoline, diesel, kerosene, heavy oil, BTX (benzene, toluene, xylene), LPG, jet fuel, lubricating oil, etc.
• Based on its abundant capital and advanced technology, the company in 2008 embarked on the construction of heavy oil upgrading facilities as well as a facility to produce the BTX petrochemical raw materials (benzene, toluene, and xylene) in the Seosan-Daesan Industrial Complex.
• Hyundai Oilbank’s Daesan plant has 390,000 barrels/day of oil refining capacity in total (110,000 barrels/day at Factory 1 and 280,000 barrels/day at Factory 2). The company operates 10 gas stations and 11 shipments in major cities across the country.
• Accordingly, Chuncheongnam-do Province is expected to see new employment of more than 500 people, and Hyundai Oilbank is projected to accomplish an annual revenue growth of 1.25 billion USD and an annual exports increase of 1 billion USD.

Market Perspective
Global Market Volume : 930.8 billion USD (2013)
(Domestic 80.5 billion USD)

Business Suggestion
Creation of excellent refining facilities as well as production and export of chemical materials, by securing a cheap supply of raw materials and development of high value-added technology in affiliation with the two adjacent, large-scale industrial complexes of Daesan and Daejuk

Main Costs
Land Rent: N/A
Wage : 2,593 USD (Real wage of Chungcheongnam-do Province, as of April 2015)

Major Corporations in the region
• Upstream and Downstream : LG Chem, Lotte Chemical, SPG Chemical, Hyundai Oilbank, and Choongwon S&P
• Petrochemical companies : 5 resident corporations

Potential Customers
• Domestic companies that supply petrochemical products

Related Organization
• Industrial activity support agencies: Daejeon District Court Seosan Sub-court, Daejeon Immigration Service Seosan Office, Seosan Tax Office, Seosan Chamber of Commerce, and Korea Appraisal Board Dangjin-Seosan Office
• Financial institutions : Kookmin Bank, Shinhan Bank, Woori Bank, NH Bank, and Suhyup Bank, and National Livestock Cooperative Federation
Infrastructure

Utilities
- Water supply: Industrial water 42,000 m³/day, residential water 59.5 m³/day
- Waste water: Disposed at the sewage treatment plant in the complex (treatment capacity: 18,059 m³/day)
- Electricity: 607,678 MWh/year (entry route: Asan power plant - Seosan transforming station - Danji transforming station - resident companies)
- Communications: Seosan Telephone Office provides 167 lines.
- Energy supply facilities: Seohae City Gas (monthly average supply for the Seosan area: 12,607 million m³)

Transportation
- Airport: Gimpo Airport (140 km)
- Railroad: Janghang Line (Hongseong Station: 70 km)
- Road: West Coast Expressway Seosan IC (55 km), Haemi IC (54 km), National Highway Route 29 (Seosan-Boseong)
- Port: Daesan Port (adjacent port, the berthing capacity of 8 ships in the 10,000~20,000-ton class, cargo handling capacity 5.685 million tons/year), Asan Port (74 km, the berthing capacity of 6~8 ships in the 20,000~50,000-ton class, cargo handling capacity 24.5 million tons/year)

Labor & Material

Labor Condition
- Regional population: 
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<tbody>
<tr>
<td>Chungcheongnam-do</td>
<td>Population</td>
<td>2,000,473</td>
<td>1,193,274</td>
<td>187,496</td>
<td>25,427</td>
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<tr>
<td></td>
<td>ratio</td>
<td></td>
<td>59.6</td>
<td>9.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Daesan-si</td>
<td>Population</td>
<td>155,082</td>
<td>90,510</td>
<td>13,667</td>
<td>1,520</td>
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<tr>
<td></td>
<td>ratio</td>
<td></td>
<td>58.4</td>
<td>8.8</td>
<td>1.0</td>
</tr>
</tbody>
</table>
- Average wage: 2,593 USD (as of April 2015, real wage of Chungcheongnam-do Province)

Core Resource Supply
- Stable supply of raw materials: A stable supply of raw materials is possible through the industrial complexes adjacent to the Daesan General Industrial Complex (Daejuk General Industrial Complex, Daesan General Industrial Complex, and Daejuk Resource Stockpile General Industrial Complex).
- Core personnel: Located adjacent to Seoul, the city’s excellent human resources with expertise can be adequately supplied, along with human resources in the Chungcheongnam-do region.

Environment

Living Conditions
- Education: 41 kindergartens (1,866 students), 16 middle schools (6,497 students), 8 high schools (5,574 students), 2 vocational high schools (1,346 students), 1 university (10,747 students)
- Medical Facilities: 2 general hospitals, 1 hospital, 67 clinics, 30 dental hospitals, 1 oriental hospital, 30 Chinese medicine clinics, 11 community health centers and branches, and 16 community health clinics.

Government Support

Business types eligible for support:
- Business that involves a highly sophisticated technology, industrial support service enterprises, resident companies in an individual-type foreign investment zone

Support Details
- National tax (corporate tax, income tax): tax exemption for 5 years + 50% tax reduction for the next 2 years
- Local tax (acquisition tax): tax exemption for 15 years
- Local tax (property tax): tax exemption for 7 years + 50% tax reduction for 3 years
- Employment subsidies, education and training subsidies, and facilities grants