

# RECOVERY OF CONSTRUCTION BUSINESS CONDITIONS THROUGH EXPANSION OF PLANT EXPORTS

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## Plant market trends

The world plant market showed some symptoms of a gradual recovery. The market size of plants increased 2% year-over-year to reach \$118.7 billion in 1999. Even though the plant market in Asia is still reduced because of the 1997 economic crisis, plant orders from Europe dramatically increased to make the EU the world's biggest plant market. By plant category, environment plants recorded the highest growth rate, increasing over 15% year-over-year. Industrial & petrochemical plants also rose by 5%. Other plant markets however, including those for manufacturing, transportation, water and power plants, showed a decreasing trend. If one compares corporate performance in the world plant market, the Bechtel Group ranked first in industrial & petrochemical plants, power plants, and environmental plants. Among Korea's construction corporations, Hyundai Engineering & Construction ranked fifth in power plants and Samsung Corporation ranked eighth in environment plants respectively.

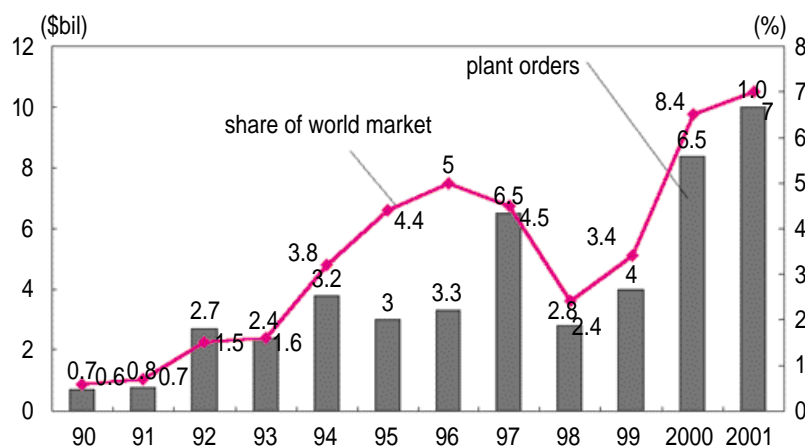
*The world plant market showed some symptoms of a gradual recovery.*

Table 1. Top 10 Contractors in the World Plant Market

Rank	Industrial & Petrochemical	Manufacturing	Power	Environment	Water
1	Bechtel Group	Takenaka Corp.	Bechtel Group	Bechtel Group	IMPREGILO
2	Kellogg Brown & Root	Taikisha Ltd.	Foster Wheeler	Skanska AB	Dragados
3	Kvaerner Group	Hochtief AG	Raytheon E&C	Ed. Zublin AG	Vinci
4	Fluor Corp.	Chiyoda Corp.	Black&Veatch	Kvaerner Group	Philipp Holzmann
5	TECHNIP	Kajima Corp.	Hyundai E&C	Walter Bau-AG	Odebrecht SA
6	JGC Corp.	Skanska AB	Vinci	Earth Tech Inc.	Taisei Corp.
7	Foster Wheeler	AMEC PLC	Fortum	Bilfinger+Berger	Kvaerner Group
8	Snamprogetti	Shimizu Corp.	Odebrecht SA	Samsung Corp.	Ferrovial
9	Toyo Eng.	NCC	Fluor Corp.	Toa Corp.	Hochtief AG
10	SAL	Morrison	TECHNIP	Philipp Holzmann	Dick Corp.

Source: ENR, 2000. 8.

Figure 1. Trend and Prospects for the Domestic Plant Orders



Note: Figure in 2001 is an estimate by the Ministry of Commerce, Industry and Energy.

*Plant orders in Korea doubled to reach \$8.4 billion in 2000, due to the recovery of Asian economies and special demands in the Middle East.*

Plant orders in Korea doubled to reach \$8.4 billion in 2000, due to the recovery of Asian economies and special demands in the Middle East. Thus, the share of Korea in the world plant market rapidly increased to over 6% from 1% in the early 1990's. Korea's major plant category was petrochemical plants, which logged orders of 3.7 billion dollars, and 38.6% of total orders. In turn, power plants and off-shore plants received orders of 3.1 billion dollars and 0.8 billion dollars respectively. Asian orders, including those from the Middle East, occupied over 50% of the total. If orders from Central and South America are included, one can see the severe concentration of orders in developing countries.

#### Four reasons for expansion of plant exports

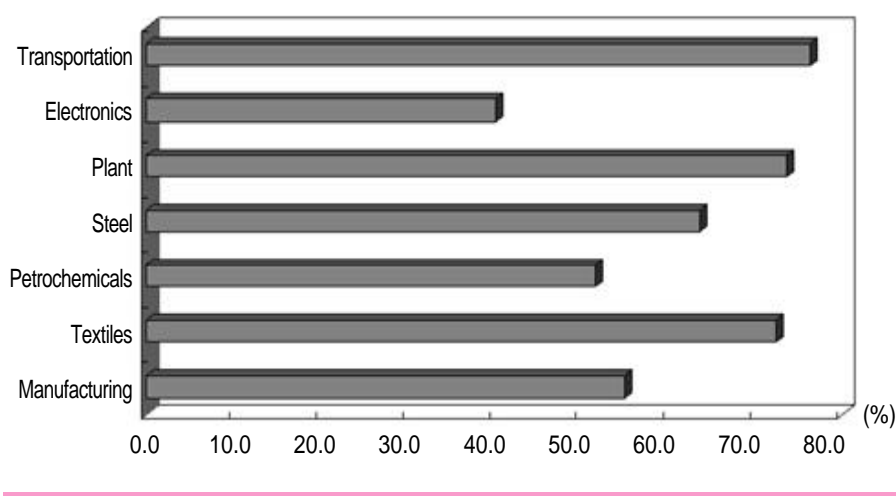
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**High value-added:** The plant industry offers many opportunities to add value, because of the need for high technology in manufacturing and diverse knowledge services. In other words, the plant industry can create profits in a range of activities including manufacturing a single part of the plant, planning, engineering, consulting, financing and equipment operation. Besides, after the completion of a plant, additional profit can be created by exporting expandable supplies and dispatching manpower for plant maintenance.

**Broad industrial linkage effect:** As the plant industry is a general construction industry that includes machinery, planning, and construction, it has a broad industrial linkage effect. The plant industry has a forward and backward industrial linkage effect of 94%, which exceeds the average level of manufacturing (57%) and the average level of services (39%).

**High earning ratio of dollars:** The plant industry can earn dollars by exporting

Figure 2. Earning Ratio of Dollars by Industry



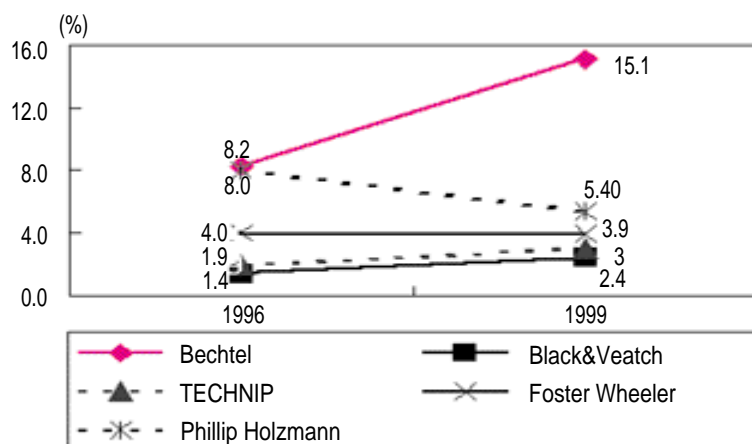
Note: 2000 basis.

machinery equipment, without any trade frictions or import regulations. If the earning ratio of dollars among the main industries are compared, the plant industry comes in second to the transportation industry. The earning ratio of dollars in the plant industry is 73.6%, much higher the average level of manufacturing (55%).

*Increasing plant exports can help the construction industry take off and promote the recovery of construction corporations.*

**Breakthrough of Construction Depression:** Until recently, the domestic demand and investment of the construction industry were depressed after the economic crisis. Therefore, increasing plant exports can help the construction industry take off and promote the recovery of construction corporations. As investment in construction decreased for two consecutive years and is expected to

Figure 3. Comparison of Corporate Plant Ratios



increase 3% in 2001, the overseas market will have to be the source of growth in the industry.

Looking at the plant ratio for various construction companies, the companies with high plant ratios, such as Bechtel and Black&Veatch, show good business performance. In contrast, companies with low plant ratios, such as Foster Wheeler and Phillip Holzmann, have seen their growth stagnate or even decline.

### Suggestions for expansion of plant exports

**Specialization in core field:** Construction corporations should have a strategy in which they specialize in a competitive field. For example, Bechtel and Kellogg have concentrated on petrochemical plants, Foster Wheeler on power plants, and Kvaerner on environmental plants.

*M&As of the engineering corporation can be considered to acquire system technology.*

**Securing system technology through M&A:** As it is very difficult for domestic construction corporations to secure core technology in a short time, M&As of the engineering corporation can be considered to acquire system technology. System technology can be helpful for efficient commitment of plants and increasing orders for plants. Furthermore, by making a technology road map that reports a concrete level of technology in a time schedule, construction corporations can improve their technical abilities.

*Cooperative orders are helpful not only for risk-sharing in long term construction, but also for market expansion.*

**Promoting strategic alliances:** Strategic alliances can take the form of consortiums and joint ventures with advanced corporations. Cooperative orders are helpful not only for risk-sharing in long term construction, but also for market expansion.

**Increasing financial support:** With the current financial difficulties faced by domestic construction corporations, the government should formulate a policy to financially support plant exports. The government of Japan introduced a public support system for plant exports. The Korean government should also increase funding for plants and domestic banks should support plant exports through advanced financial techniques like syndicate loans.

**Building a cooperative system to increase orders:** As the plant businesses that are ordered in developing countries are mostly from national policy, a cooperative system between the government and corporations should be established for full ordering activity. **VIP**