

# Establishment of the Logistics Hub in Northeast Asia on the Basis of LME Warehouses

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## 〈목 차〉

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- I. Introduction
  - II. National Policy for the Logistics Hub of Northeast Asia
  - III. Operation of Customs-Free Zone and LME Designated Warehouses
  - IV. Project on Developing Korea as the Logistics Hub of Northeast Asia Through LME Warehousing
  - V. Conclusion
- 

**Abstract :** As is generally known, there is intense competition among ports located in every major economic bloc to become the regional logistics hub. Likewise, Korea is also taking part in the competition to emerge as the logistics hub in the Northeast Asian economic bloc. This paper aims to review the major contents of the Northeast Asian logistics hub project pursued by the Korean government and to suggest measures for successfully implementing the project through LME warehouses. According to policy recommendation from the study, i) Improving the Customs-Free Zone system and expanding Customs-Free Zones, ii) Expanding and attracting more LME warehouses, iii) Inducing global companies to partake in warehouse operations, iv) Benchmarking LME warehousing of advanced countries and strengthening marketing activities, v) Increasing capacity as trading center by linking warehouse operations in Busan Port and Gwangyang Port, and vi) Solving problems in management of LME warehouses and cargoes were regarded as the most significant tasks.

**Keywords :** Logistics Hub, Roadmap, Customs-Free Zone, Non-ferrous Metals, LME(London Metal Exchange) designated warehouse

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## I . Introduction

Transformation of the world economy into a single market is being accelerated as the WTO(World Trade Organization) system takes root and e-business based on cutting-edge IT technology develops. The world is also facing an era of limitless competition wherein only nations and enterprises possessing global competitiveness can survive. Accordingly, firms are engaging in global business and management activities by setting up production and logistics networks at various locations around the world. Also, many firms have introduced the concept of Supply Chain Management(SCM) to manage resources in a comprehensive manner ranging from procurement, product design, manufacturing, marketing and sales. Such activities highlight the fact that establishment of an international logistics management system is a crucial factor in determining a company's competitiveness. As a result, in selecting the logistics center of a specific region, companies tend to choose locations that facilitate their production and logistics activities.<sup>1)</sup>

In response to such global trend, countries in the Northeast Asian region, namely, Korea, China, Japan and Taiwan are engaging in keen competition to become regional production and logistics hubs for global firms. In particular, to pro-actively respond to changes in trade structures and logistics systems in the Northeast Asian region, Korea is pursuing a national plan to develop the Korean peninsular into the logistics hub in Northeast Asia which includes developing major air and sea ports that are strategically located into logistics hubs. More specifically, Korea has designated Busan Port and Gwangyang Port

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1) Ministry of Maritime Affairs and Fisheries, *Study on Mid-to-Long Term Development of Customs-Free Zones*, December 2002, p.3(in Korean).

as Customs-Free Zone(CFZ) as of January 2002 to develop the ports into international logistics centers.

Location of London Metal Exchange(LME) warehouses within CFZ guarantees free logistics activities that conform to international standards as the area is deemed as foreign territory under *the Customs Duties Act*. Housing LME warehouse at Busan and Gwangyang ports is the first successful initiative to attract global firms since the two ports were designated as Customs-Free Zone, and is expected to accelerate Korea's Northeast Asian logistics hub project.<sup>2)</sup>

Accordingly, this paper aims to review the major contents of the Northeast Asian logistics hub project pursued by the Korean government and to suggest measures for successfully implementing the project through LME warehouses.

## II. National Policy for the Logistics Hub of Northeast Asia

### 1. Background

The new administration of President Roh Moo-hyun embarked on the national initiative to create a new engine for economic growth which takes advantage of the emerging Northeast Asian economic zone. In August 2003, the Korean government announced *the*

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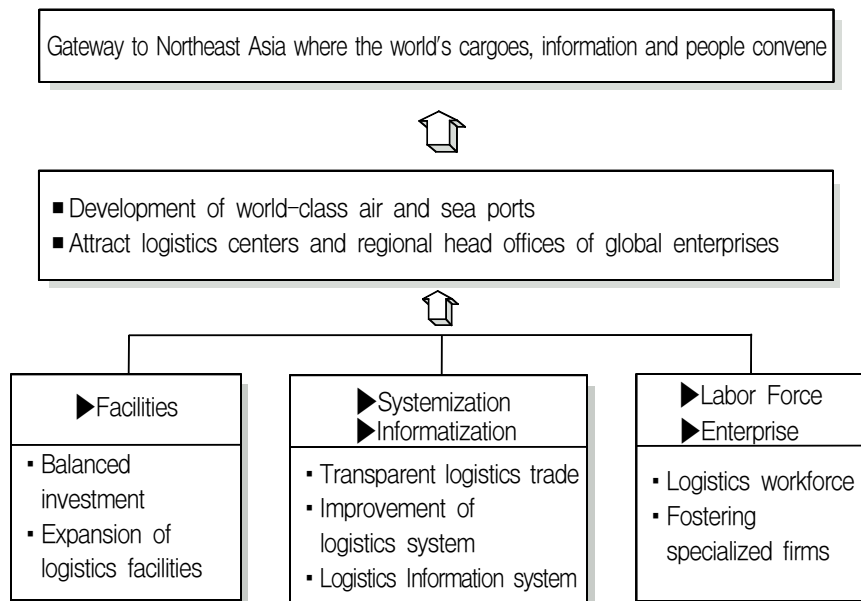
2) ① Busan Metropolitan City, *Application for the Port of Pusan, Republic of Korea : To Be Considered for Listed Location Status by The London Metal Exchange*, June 2000.

② Gwangyang City, *Application for the Port of Gwangyang : To Be Considered for Listed Location Status by The London Metal Exchange*, April 2001.

*Northeast Asian Logistics Hub Roadmap* comprising vision and strategy for the logistics hub, project to develop a world-class air and sea ports, and seven major tasks. With the announcement, the project to develop the Korean peninsula into the logistics hub in Northeast Asia is pursued in full-scale.<sup>3)</sup>

Based on *the Roadmap for Northeast Asian Logistics Hub* proposed by the Presidential Committee on Northeast Asian Business Hub, the Korean peninsula will be developed as the gateway to Northeast Asia where the world's cargoes, information, and people convene. The goal is to develop world-class air and sea ports and to attract logistics center and regional headquarters of global enterprises(See <Figure-1>).

〈Figure-1〉 Vision, Goal and Tasks in Becoming Northeast Asian Logistics Center



Source : Presidential Committee on Northeast Asian Business Hub.

3) Presidential Committee on Northeast Asian Business Hub, *Roadmap for Northeast Asian Logistics Hub*, 27th August, 2003(in Korean).

The Roadmap also puts forth seven major tasks for achieving the vision and goal as follows : i ) balanced investment in transportation facilities, ii ) fostering specialized logistics firms possessing international competitiveness, iii ) transparent logistics trade, iv ) fostering logistics manpower, v ) improving systems to support international logistics and attracting logistics firms, vi ) establishing seamless and paperless logistics information system, and vii ) setting up rail network in Northeast Asia.

There are two reasons why *the Roadmap for Northeast Asian Logistics Hub* has been prepared by the Roh Administration. First, although there is keen competition among countries within Northeast Asia to become the logistics hub in the region, efforts on a national level to develop and expand facilities such as ports and hinterland and to foster specialized logistics firms and manpower have been weak thus far. Second, there is an imbalance in investments in SOC facilities and a lack of effort to improve old and inefficient domestic logistics facilities. In sum, the roadmap aims to supplement the existing logistics hub project to accomodate changes in environment, so that Korea can preempt other countries in becoming the logistics hub of Northeast Asia and can achieve remarkable growth in logistics.

## 2. Major Contents

The Korean government plans to develop Busan and Gwangyang ports as gateway to Northeast Asia that provides logistics service to key locations around the region by setting up an innovative integrated logistics system. In other words, to foster the two ports into the logistics hubs in Northeast Asia, the following detailed strategies will be pursued.

First, in order to preempt the status of the logistics hub of Northeast Asia, development of Busan New Port and Gwangyang Port will be accelerated. Total 63 berths will be newly built by 2011, including 30 berths at Busan New Port and 33 berths at Gwangyang Port(of which 8 berths are in operation as of July 2003), thereby upgrading the annual cargo handling capacity to 17.37 million TEU. This is approximately three times the current handling capacity of Busan Port (See <Table-1>).

Second, a 'tailored' port hinterland development plan will be implemented which takes into account the specific demands of global shippers and logistics firms(such as timing of tenantry, required space, etc.). In the long term, total 4 million pyong<sup>4)</sup> of logistics complex will be established at Busan New Port and Gwangyang Port. In addition, 220,000 pyong of hinterland will be created near Busan New Port and 590,000 pyong of hinterland will be set up in the vicinity of Gwangyang Port by 2007. Furthermore, to establish a port cluster that creates high value-added cargo traffic, measures to link the port, port hinterland, and industrial complex will be pursued(See <Table-2>).<sup>5)</sup>

<Table-1> **Container Terminal Development Plan at Busan and Gwangyang Ports**

Category	Busan New Port ( '95~2011)	Gwangyang Port ( '87~2011)
Development Plan	30 berths	33 berths (8 berths completed)
Annual Handling Capacity	8.04 million TEU	9.33 million TEU

Source : Ministry of Maritime Affairs and Fisheries(MOMAF).

Note : Seven berths at Busan New Port and 16 berths at Gwangyang Port will be developed by 2007 and 2006, respectively.

4) 1pyong = 3.3058m<sup>2</sup>

5) Ministry of Maritime Affairs and Fisheries, *Comprehensive Plan on Port Hinterland Development*. October 2002, Appendix 1(in Korean).

〈Table-2〉 Port Hinterland Development Plan

Category	Busan New Port	Gwangyang Port
Size	Phase 1 : 930,000 pyong <sup>1)</sup> Phase 2 : 1.95 million pyong	Phase 1 : 590,000 pyong Phase 2 : 530,000 pyong
Developer	Pusan Newport Company ※ Commissioned to Busan Urban Development Corporation	Central government/ Gwangyang City
Project Cost	Phase 1 : 530.4 billion won Phase 2 : Not determined	Phase 1 : 273.3 billion won Phase 2 : 183.8 billion won
Project Period	By 2013	By 2011
Remarks	Total 220,000 pyong to be developed, including 90,000 pyong by 2005 and 200,000 pyong by the end of 2007.	Total 590,000 pyong to be developed by the end of 2007.

Source : Ministry of Maritime Affairs and Fisheries(MOMAF).

Note : 1 pyong = 3.3058m<sup>2</sup>.

Third, production at the port will be improved to a world-class level. Ports will be operated as a part of the overall logistic network. Cargo flow will be improved, manpower management will be more flexible, and stevedoring equipment will be reinforced so that productivity at Korean ports will be at a level similar to those of Hong Kong, Singapore and Rotterdam within three years.

Fourth, measures will be sought to attract more transshipment(T/S) cargo to Korean ports. Various initiatives will be pursued such as giving priority to Shipping Alliances in selecting container terminal operators.

Fifth, shipping industry will be promoted and intermodal transportation will be further developed. Korea will pursue policies to strengthen international competitiveness of its shipping industry such

as introducing the tonnage tax system that conform to international standards and promoting the vessel investment company system. Other initiatives include expanding T/S transportation network/feeder network for northern China and Japan and guaranteeing stable handling of cargoes of feeder carriers by securing exclusive-use terminals. Companies that can help achieve such initiative will be given priority in selecting terminal operators.

### III. Operation of Customs-Free Zone and LME Designated Warehouses

#### 1. Purpose of Customs-Free Zone

Korea has introduced the Customs-Free Zone(CFZ) system in order to promote areas such as airports and seaports as international logistics centers of Northeast Asia, utilizing their favorable geographical location. Korea will attract global logistics firms and cargoes to its airports and seaports(including their hinterland) that are situated at favorable locations and will foster the logistics industry, thereby promoting such locations as logistics hubs of Northeast Asia.<sup>6)</sup>

For this, the Korean government prepared a legal basis for introducing Customs-Free Zones in Korea, a concept similar to Free Trade Zone around the world. Thus, *the Act on Designation and*

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6) Article 1 (Purpose) of the Act on Customs-Free Zone stipulates that “the purpose of this Act is to contribute to the sound development of the national economy by designating and managing any specific area on which an airport or seaport, etc. is centered, as a Customs-Free Zone in order to promote the flow of international cargoes and developing it into an international logistics center.



*Management of Customs-Free Zones for Building International Logistics Centers*(hereinafter '*the Act on Customs-Free Zone*') was enacted in 1999, and specific areas within Busan Port and Gwangyang Port were designated as CFZ in January 2002 and managed as such since(See <Table-3>).<sup>7)</sup>

<Table-3>                      **Status of Customs-Free Zone**

Category	Customs-Free Zone	Prearranged Zone
Busan Port	<ul style="list-style-type: none"> <li>▪ Area of PECT (Shinsundae)               <ul style="list-style-type: none"> <li>- PECT</li> <li>- LME warehouse site in Yongdang</li> </ul> </li> <li>▪ Specific areas around western part of Gamcheon Pier               <ul style="list-style-type: none"> <li>- Hanjin Container Terminal</li> <li>- Former site of Cheil Jedang</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Hinterland neighboring CFZ               <ul style="list-style-type: none"> <li>- Site in Yongdang (near PECT)</li> <li>- Reclaimed sites of Korea Vessel Engine Repair Cooperative and Daesun Shipbuilding &amp; Engineering (near Gamcheon Pier)</li> </ul> </li> </ul>
	Total 400,000 pyong	Total 260,000 pyong
Gwangyang Port	<ul style="list-style-type: none"> <li>▪ Phase 1 and Phase 2-1 container terminal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Areas near CFZ               <ul style="list-style-type: none"> <li>- Area for pier development in Phase 2-2</li> <li>- Port hinterland sites on the east side</li> </ul> </li> </ul>
	Total 420,000 pyong	Total 300,000 pyong
Incheon Port	<ul style="list-style-type: none"> <li>▪ Inner harbor of Incheon Port</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hinterland near Pier 4</li> <li>▪ Phase 1 of Samsung-PSA southern harbor container terminal development</li> </ul>
	Total 510,000 pyong	Total 170,000 pyong
Incheon International Airport		<ul style="list-style-type: none"> <li>▪ Area to the east of Incheon Int'l Airport to be designated as CFZ</li> </ul>
		Total 300,000 pyong
Total	1.33 million pyong	1.03 million pyong

Source : Ministry of Maritime Affairs and Fisheries(MOMAF).

Note : 1 pyong = 3,3058m<sup>2</sup>.

7) Korea Maritime Institute, *Study on Introduction of Customs-Free Zones to Korean Ports*, May 2000, pp.341-415(in Korean).

According to *the Act on Customs-Free Zone*, CFZ is an area wherein exception to tax laws such as *the Customs Duties Act*, *the Value-Added Tax Act*, *the Special Consumption Tax Act*, and *the Liquor Tax Act* is recognized for goods brought-in and carried-out. Thus, various indirect taxes such as customs duties and value-added tax are exempted in the CFZ, and foreign companies investing in the area receive exemption or reduction of direction taxes such as corporate tax, income tax, acquisition tax, registration tax, etc. Also, various administrative benefits are provided to firms doing business in the CFZ. Administrative benefits are offered to businesses and there is no administrative oversight of goods by the customs authority in the CFZ so that businesses may engage in their operations and activities freely without limitation.<sup>8)</sup>

## 2. Status of LME Warehouses in the Customs-Free Zone

### 1) General Conditions for LME Warehousing

Several conditions have to be met in order for a site to be designated as a LME warehouse, including low transaction cost(including exemption of customs duties) and free movement of cargoes and goods(guaranteeing free logistics).<sup>9)</sup>

#### (1) System

First, customs duties should not be levied on non-ferrous metals

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8) Korea Customs Service, *Working Guide to Customs-Free Zone*, August 2001, pp.2-4.

9) Minister of Maritime Affairs and Fisheries, *Application for Expansion of Busan Port Customs-Free Zone : Yongdang LME Designated Warehouse*, 2002. 12, pp.9-13(in Korean).

imported to or stored in LME designated warehouse. Value-added Tax(VAT) should also not be levied on non-ferrous metals stored in LME designated warehouse until the ownership is transferred. Furthermore, there should not be a limit in the duration of cargo storage. Also, cargo management should be implemented freely and conveniently, allowing for cargo movement within the warehouse without filing thereof to the tax authorities.

## (2) Transportation Network

Non-ferrous metal traded in LME should be provided to the end user rapidly. As such, the LME headquarters places high emphasis on hinterland and connecting transportation networks such as port facilities, maritime transport network, rail transport network and road transport network of the region where the LME warehouse is to be located.

## (3) Facilities

First of all, there is no special restriction on structure or design of the warehouse, but as non-ferrous metal are heavy cargo, floor of the warehouse should withstand a load of 10 tons or more per square meter(Load of Saebang Warehouse in Busan Port stands at 16~25 ton/m<sup>2</sup>). Facilities to inhibit corrosion due to rain or humidity is also required. As for the entrance/exit door, its size should be big enough to pass a forklift truck. Fire extinguisher should be placed at the door to enable quick response to fires.

One of the most important factors considered in designating LME warehouse is security facilities. LME warehouses store cargoes on behalf of the client. As such, the warehouse should be equipped with

advanced security facilities so as to secure the trust of those storing cargoes in LME warehouses. Security facilities include Closed-circuit Televisions(CCTVs), infrared sensors, and electric locks.

#### (4) Marketability

At the hinterland of LME designated warehouse, the domestic market should be sufficiently big enough to accomodate LME traded cargoes. Also, countries within the region where LME is located should also possess adequate market sizes so that the LME location may play the role of regional logistics center.

### 2) Advantages of the Customs-Free Zone System

One of the reasons behind designating Busan Port and Gwangyang Port as Customs-Free Zones is to provide systematic national support to attracting LME warehousing.<sup>10)</sup>

Among international logistics-related systems in Korea, the Customs-Free Zone system and the Integrated Bonded Area system can support LME business. Of the two, applying the Customs-Free Zone system is more favorable for LME warehousing, in terms of levying no VATs and having simplified customs procedures. During its approval of LME location in November 2001, the LME headquarters has reviewed Korea's customs duties and customs clearance systems and concluded that the Customs-Free Zone system was most appropriate for LME business(See <Table-4>).

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10) ① Minister of Maritime Affairs and Fisheries, *Application for Expansion of Busan Port Customs-Free Zone : Yongdang LME Designated Warehouse*, December 2002, pp.19-23(in Korean).

② Minister of Maritime Affairs and Fisheries, *Application for Expansion of Gwangyang Port Customs-Free Zone*, March 2003, pp.7-10(in Korean).

〈Table-4〉 Comparison of Customs-Free Zone and Integrated Bonded Area

Category	Customs-Free Zone	Integrated Bonded Area
Legal basis	<i>Act on Designation and Management of Customs-Free Zones for Building International Logistics Centers</i>	<i>Customs Duties Act</i>
Authorized person for Designation	Minister of Finance and Economy	Commissioner of Korea Customs Service
Areas for designation	Airport/Seaport and their hinterland, Distribution complex, Cargo Terminal	FDI areas, Industrial Complex, etc.
Major business types supported (Possible tenants)	Logistics business(logistics, vessel repair, etc.)	Manufacturing business (manufacturing, warehousing, sales, etc.)
Nature of location in accordance to the Customs Duties Act	Non-customs area(Customs Duties Act not applied)	Bonded area(customs duties reserved)
Scope of customs tax exemption	All items(excluding consumption goods)	Raw materials for manufacturing
Whether domestic goods brought in are deemed as exports	All filed goods brought in	Raw materials for export
VAT on items and goods supplied to the location	None	Levied
Filing to the customs authority in case items/goods are transferred between registered entities	No	Filed
Whether processing or various activities on foreign goods should be filed with the customs authority	No	Filed(for approval)
Requirement to file the use or consumption of foreign items/goods	No	Yes
Control on domestic goods of inward carriage	None	Filing required for some goods

Source : Ministry of Maritime Affairs and Fisheries(MOMAF).

### **3) Status of Attracting LME Warehouses**

#### **(1) Developments**

Ministry of Maritime Affairs and Fisheries, Public Procurement Service, Busan Metropolitan City, and Gwangyang City, since 1998, have jointly endeavored to attract LME warehouses to Busan and Gwangyang ports, based on the vision to secure materials vital for the national economy as well as to foster the two ports into a trading center for non-ferrous metals. As a result, the ports were approved by the LME headquarters to handle four LME-traded cargoes of aluminum, copper, nickel and tin. To provide systematic support to the bid to attract LME warehouse, the Korean government designated areas of Busan and Gwangyang ports as Customs-Free Zones in December 2001. Then in August 2002, Korea submitted a request to the LME headquarters for approval of sites in Busan Port and Gwangyang Port as LME locations. In October 2002, the requested sites received approval from the LME headquarters to be designated as LME depots.

#### **(2) Attraction Efforts**

LME warehouses are not directly owned by the operators. Globally, LME warehouses are operated by private warehouse operators that have received approval from the LME headquarters. Currently, 400 LME designated warehouses are operated at 13 countries around the world, of which most are located in Europe. In Asia, LME warehouses are operated in Singapore(since 1987) and Japan(since 1990). Korea will become the third nation in Asia to operate LME designated warehouse with approval of Busan and Gwangyang ports by the LME headquarters.

Of six warehouses in Korea approved by the LME headquarters as LME warehouse in October 2002, four are related to Customs-Free Zone. One is located in Busan Port(Yongdang LME warehouse) and three are located in Gwangyang Port. Two warehouses exclusively handle LME-traded cargo ; one in Busan Port(Global Enterprises Warehouse in Yongdang) and the other in Gwangyang Port(Global Enterprise Warehouse at the port hinterland site). Other LME warehouses are used also as general cargo warehouse or CFS. Storage capacity of the Global Enterprise warehouse in Yongdang is 15,000 tons and that of the Global Enterprise warehouse in Gwangyang is around 90,000 tons(See <Table-5>).

<Table-5> Status of LME Warehouse in Korea

Port	Warehouse	Location	Operator		Area Size			Remarks
			Domestic	Foreign	Total area size	Warehouse	Open storage yard	
Busan	Global Enterprise Warehouse in Yongdang	Yongdang site near PECT	Global Enterprises Ltd.	Henry Bath & Son	15,601m <sup>2</sup> (4,719 pyong)	5,721m <sup>2</sup> (1,731 pyong)	9,880m <sup>2</sup> (2,988 pyong)	<ul style="list-style-type: none"> <li>• Government owned</li> <li>• Designated as CFZ (Jan. 1, 2003)</li> </ul>
	Warehouse in Cheonghak-dong, Yeongdo-gu	1-51, Cheonghak-dong, Yongdo-gu, Busan	Kukbo Co., Ltd.	Steinweg	23,870m <sup>2</sup> (7,220 pyong)	6,086m <sup>2</sup> (1,841 pyong)	17,574m <sup>2</sup> (5,316 pyong)	<ul style="list-style-type: none"> <li>• Privately owned</li> <li>• Integrated Bonded Area</li> </ul>
	Dongyang Cement Warehouse in Gamcheon	Eastern part of Gamcheon Port	Dongyang Logistics	Cornelder	17,729m <sup>2</sup> (5,363 pyong)	4,214m <sup>2</sup> (1,275 pyong)	13,516m <sup>2</sup> (4,088 pyong)	<ul style="list-style-type: none"> <li>• Privately owned</li> <li>• Integrated Bonded Area</li> </ul>

## Status of LME Warehouse in Korea(continued)

Port	Warehouse	Location	Operator		Area Size			Remarks
			Domestic	Foreign	Total area size	Warehouse	Open storage yard	
Gwangyang	Global Enterprise CFS	Phase 1 terminal at Gwangyang Port	Gwangyang Global Enterprise Terminal Ltd.	Comelder	5,280m <sup>2</sup> (1,597 pyong)	5,280m <sup>2</sup> (1,597 pyong)	-	<ul style="list-style-type: none"> <li>• Government owned</li> <li>• Within CFZ</li> </ul>
	KIT CFS	Phase 2 terminal at Gwangyang Port	KIT	Steinweg	5,280m <sup>2</sup> (1,597 pyong)	5,280m <sup>2</sup> (1,597 pyong)	-	<ul style="list-style-type: none"> <li>• Government owned</li> <li>• Within CFZ</li> </ul>
	Global Enterprise warehouse in port hinterland site	Near Global Enterprise Terminal	Global Enterprise Ltd. Gwangyang Global Enterprise Terminal Ltd.	Comelder, Henry Bath & Son	52,358m <sup>2</sup> (15,838 pyong)	19,614m <sup>2</sup> (5,933 pyong)	32,744m <sup>2</sup> (9,905 pyong)	<ul style="list-style-type: none"> <li>• Government owned</li> <li>• Designated as CFZ</li> </ul>

Source : Ministry of Maritime Affairs and Fisheries(MOMAF).

Note : 1 pyong = 3.3058m<sup>2</sup>.

In case of Global Enterprise Warehouse in Yongdang, approximately 17,000 tons of LME cargoes are stored, exceeding the appropriate storage level. Therefore, additional storage space is urgently needed at the warehouse. On the other hand, cargoes stored at the LME designated warehouse in Gwangyang Port is a mere 10.4% of total warehouse capacity. Such disparity in storage volume exists between Busan Port and Gwangyang Port even though rates at Gwangyang Port is relatively lower than that at Busan Port. The reason is that Busan Port is preferred over Gwangyang Port because the former has better international recognition and consumer/market is situated in the South and North Gyeongsang provinces. In addition,



advantages of Gwangyang Port has not been sufficiently promoted among foreign traders.

### (3) Impact of LME Warehousing in Korea

Designation of sites in Busan Port and Gwangyang Port as LME warehouses is expected to have a positive ripple effect both nationally and regionally.<sup>11)</sup>

Nationally, it will act as a stepping stone for Korea to develop as the logistics hub for non-ferrous metals in Northeast Asia, which accounts for 30% of global demand for non-ferrous metals. Furthermore, it conforms to national policy to secure a stable supply of raw materials strategically important for the national economy. Also, operation of LME warehouse is expected to have a significant impact on the regional/local economy in terms of investment in newly building(or renovating) LME warehouse, increased sales related to LME warehouse operations such as stevedoring and storage, job creation, income creation from futures trade and actual commodity trade, and promotion of transport sector(See <Table-6>).<sup>12)</sup> In particular, LME-traded cargoes have more value-added than T/S cargoes as they require more steps in handling which range from loading and unloading of cargo from ship to warehouse input and output(See <Table-7>).

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11) ① Minister of Maritime Affairs and Fisheries, *Application for Expansion of Busan Port Customs-Free Zone : Yongdang LME Designated Warehouse*, December 2002, p.31(in Korean).

② Minister of Maritime Affairs and Fisheries, *Application for Expansion of Gwangyang Port Customs-Free Zone*, March 2003, pp.16-18(in Korean).

12) Hee-Seok Bang and Choong-Bae Lee, "Approaches to the Efficient Logistics Management of Non-Ferrous Metals in Korea", *Northeast Asia Non-ferrous Metals & Logistics Forum Proceedings*, September 22, 2003, p.189.

〈Table-6〉 Economic Effects of LME Warehouse

Unit : Mil. Won

Category			Standard Turnover	Production Creation	Income Creation	Employment Creation
Busan	Turnover Creation	2001	6,757	10,540	2,429	191
		2004	9,277	14,471	3,335	263
	Construction		7,069	13,266	3,200	147
	Total (In 2004)		16,346	27,737	6,535	410
Gwangyang	Turnover Creation		4,582	3,763	1,476	33
			18,325	15,048	5,902	130
	Construction		15,809	13,866	6,213	135
	Total		34,134	28,914	12,115	265

Source : The Daewoo Economic Research Institute and KIET, 1999.

〈Table-7〉 Process of Inward Carriage into or Outward Carriage from LME Warehouse

Category	Process	T/S Container Cargo	LME Cargo	Remarks
Nation (Port Authority)	Port entry or leaving	○	○	Wharfage Dockage
Warehouse operator	Cargo discharging	○	○	Stevedoring charge
	Transport (Pier→warehouse)	×	○	Transport charge (Drayage charge)
	Off-load from vehicle : inward carriage	×	○	Handling charge
	Lotting	×	○	Handling charge
	Warehouse storage	×	○	Storage charge
	Load on vehicle : outward carriage	×	○	Handling charge
	Transport (Warehouse→pier)	×	○	Transport charge (Drayage charge)
	Cargo loading	○	○	Stevedoring charge

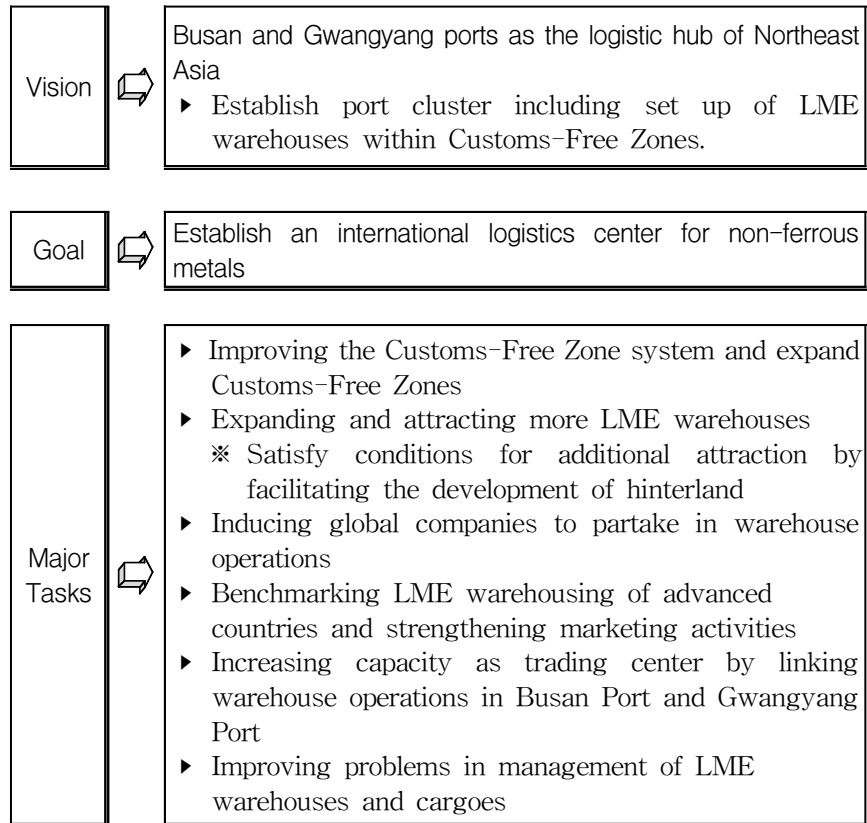
Source : Korea Maritime Institute(KMI).

## **IV. Project on Developing Korea as the Logistics Hub of Northeast Asia Through LME Warehousing**

### **1. Goal and Implementation Direction**

The goal of the project on developing Korea as the logistics hub of Northeast Asia through LME warehousing is developing Busan Port and Gwangyang Port as international logistics centers for non-ferrous metals in Northeast Asia by promoting LME warehousing locations and attracting more LME warehouses. The following five major tasks will be actively pursued to achieve the goal. They are i) Improving the Customs-Free Zone system and expanding Customs-Free Zones, ii) Expanding and attracting more LME warehouses, iii) Inducing global companies to partake in warehouse operations, iv) Benchmarking LME warehousing of advanced countries and strengthening marketing activities, v) Increasing capacity as trading center by linking warehouse operations in Busan Port and Gwangyang Port, and vi) Improving problems in management of LME warehouses and cargoes(See <Figure-2>).

〈Figure-2〉 Vision, Goal and Tasks in Becoming Northeast Asian Logistics Center through LME Warehousing



Source : Korea Maritime Institute(KMI).

## 2. Task Details

### 1) Improvement of the Customs-Free Zone System and Expansion Customs-Free Zones

LME warehousing is the first successful bid by Korea to attract a global logistics company to the Customs-Free Zone since Busan Port

and Gwangyang Port were designated as such on January 1, 2002. As such, if LME warehouse operations are successful, then it will act as a momentum for attracting more global logistics companies to Korea's Customs-Free Zones and ultimately contribute to Korean ports playing an active role in comprehensive logistics in Northeast Asia. This is because LME warehouses perform not just storage functions, but also perform futures and actual commodity trading functions based on the non-ferrous metals stored in the designated warehouse. Thus, they are multi-functional to include both logistics and finance. Korean ports have thus far only performed simple functions such as stevedoring and temporary storage. The successful bid to house LME designated warehouses will lay the foundation for Korean ports to perform integrated and value-added logistics functions, thereby emerging as the logistic hub of Northeast Asia.

Meanwhile, as part of the 'Seven Major Tasks to Emerge as Logistics Hub of Northeast Asia,' the Korean government plans to make innovative revisions to the Act on Customs-Free Zone including improvement of the international logistics support system so that more global logistics companies may invest in Korea. Such improvement efforts are pursued because the current Customs-Free Zone system is relatively inferior to similar systems in other countries in terms of land development, management and operation, authorization procedures, and incentives. Thus, an overhaul in relevant laws and systems will be sought so that Korea's Customs-Free Zone system will offer similar level or more favorable business conditions as compared to other relevant systems in neighboring countries.

Accordingly, Ministry of Maritime Affairs and Fisheries and other relevant agencies of the central government including Ministry of Finance and Economy, Ministry of Commerce • Industry and Energy, and Ministry of Construction and Transportation are coordinating

with one another to improve the Customs-Free Zone system. *The Act on Customs-Free Zone* and *the Act on Free Trade Zone*(under the jurisdiction of Ministry of Commerce, Industry and Energy) will be integrated and accompanying revisions will be completed within this year. According to the draft of *the Integrated Act(Revised Act on Free Trade Zone)*, businesses receiving priority in being housed in the Customs-Free Zone will be expanded from the current logistics businesses to processing, assembly and manufacturing businesses. Also, criteria for granting tax cuts to foreign businesses will be adjusted downward, meaning eligible companies will be expanded from those with investment amount of USD 30 million or more to include companies with investment amount of USD 5 million or more for logistics business and companies with investment amount of USD 10 million or more for manufacturing business. Furthermore, necessary support will be provided from the development stage, and tax and administrative support will be granted in connection with site preparation and facility and equipment set up. The rent system will also undergo a full-scale reorganization process. Ministry of Maritime Affairs and Fisheries, in coordination with Ministry of Finance and Economy, will offer low rental rates to both domestic and foreign businesses becoming tenants in the Customs-Free Zone. Foreign companies investing in the zone will receive a reduction of rental charges of up to 100%.

Such improvement to the Customs-Free Zone system will lead to set up of more LME warehouses and promotion of value-added logistics activities, thereby contributing to Korean ports and their neighboring areas emerging as hub of international logistics and business activity. Thus, measures should be sought to accelerate improvement of the Customs-Free Zone system and to provide active support to businesses by designating sites that satisfy conditions for

LME warehousing as Customs-Free Zones.

## 2) Expansion of LME Warehouse

Globally, 400 LME warehouses are operated in 13 countries. However, cargo volume stored in those warehouses differ by country, meaning that the cargo volume is closely linked with the geographical location of the warehouse or location of the port.

In Asia, Port of Singapore, six ports in Japan, Dubai Port in United Arab Emirates, and Busan Port and Gwangyang Port in Korea are LME designated locations. As for the warehouse in Singapore, Steinweg, a Dutch company, set up its subsidiary in Singapore to operate the warehouse there in 1984. Then the warehouse was designated as LME location in 1987, the first LME location to be designated outside of Europe. Six companies including Henry Bath & Son, Steinweg, and Cornelder are currently operating LME warehouses in Singapore. In Japan, Hakada, Kobe, Moji, Nagoya, Osaka and Yokohama are designated as LME locations. Singapore, which is evaluated to be successful in LME warehousing, handles a variety of items ranging from aluminum, aluminum alloy, electrolytic copper, lead, zinc, and nickel to silver, cocoa, coffee, and rubber. Goods stored in warehouses on a daily basis ranges from 250,000 to 500,000 tons. On the other hand, LME warehouses in Japan handle only one item of aluminum. Volume stored in the six locations stands at a minimal level, and thus LME warehouse operations in Japan is evaluated to be unsuccessful.

Meanwhile, LME warehouses in Busan Port and Gwangyang Port commenced storage of non-ferrous metals starting early this year. Global Enterprise Warehouse in Yongdang has already exceeded its maximum limit of storage and is being saturated with cargo. Thus,

expansion of warehouse space is urgently called for. The Yongdang site scheduled to be designated as Customs-Free Zone or the site in Gamcheon Port scheduled to be designated as Customs-Free Zone should be utilized as additional LME warehouses.

As for Gwangyang Port, there is no need to expand LME warehouses for the time being as there is sufficient storage space. However, in light of the fact that large-scale port hinterland development projects are being implemented which may attract international logistics business, it is desirable to expand LME warehouses in Gwangyang Port as well. In particular, having LME warehouses in sites within port hinterland will act as a positive factor in attracting domestic and foreign investors when port hinterland development is completed.

To sum up, from a logistics cost viewpoint, Busan and Gwangyang ports are in a more favorable position than Port of Singapore in serving major consumers like China, Japan and Taiwan due to shorter transportation routes. However, measures should be sought to diversify the items handled by Korean ports (currently handling only aluminum) to include other high-value items such as nickel, tin, silver, cocoa and coffee so as to increase income.

### **3) Inducing Global Companies in Warehouse Operations**

There is a limit to attracting sufficient volume of LME cargo volume with only domestic warehouse operators. Thus, efforts should be made to induce global companies with LME marketing know-how and LME warehouse operation experience in ports in advanced countries to participate in LME warehouse operations in Korea.

For this, joint ventures between domestic warehouse operator and foreign LME warehouse operators should be expanded, with the



domestic operator taking responsibility for warehouse operation, inward and outward carriage of cargoes, and inland transport and the global logistics firm assuming responsibility for attracting LME cargoes, developing overseas markets, and other marketing activities. As LME warehouse business in Korea is in its initial stage, its competitiveness lags behind that of countries with advanced know-how in LME warehouse operations like Singapore. Thus, Korea should accumulate relative know-how and experience in LME warehouse operations through strategic alliances with foreign operators.

#### **4) Benchmarking LME Warehousing of Advanced Countries and Strengthening Marketing Activities**

Korea should foster experts on LME trade and warehouse operation by having employees of Korean warehouse operators undergo training courses offered by LME headquarters or training/education programs offered by foreign joint venture companies to receive education on function and role of LME, LME participation and trade procedure, items traded and status of production/consumption, know-how on warehouse operations.

Employees of Korean warehouse operators should also be dispatched to LME warehouses in overseas locations to tour the facilities, examine operations, and look at transportation methods by cargo type, so that they may benchmark warehouse operations. They should also take part in simulation training using virtual reality tools along with operational staff there. In this way, expertise and skills in warehouse operations will be promoted.

Meanwhile, LME warehousing and operations and its future plans should be included in port sales activities of Busan Port and

Gwangyang Port, so as to establish a strong awareness that the two ports will be developed as international logistics and trading center for non-ferrous metals. Also, efforts should be made to create favorable conditions for attracting additional LME warehouses by actively promoting implications of a Northeast Asian logistics hub in Korea and its effect on the regional economy.

#### **5) Increasing Capacity as Trading Center by Linking Warehouse Operations in Busan Port and Gwangyang Port**

As of year 2000, self-sufficiency rate of non-ferrous metals of Korea, China, Japan and Taiwan stood at 65.8%. This translates into an annual shortage of non-ferrous metals of five million tons. To make up for such shortage, approximately 2.7 million tons of non-ferrous metals are traded between the four countries and Singapore annually.

In light of geo-economical advantage and growth potential of both Busan and Gwangyang ports, foreign LME-related companies estimate that daily capacity to accommodate LME trade cargo of the two ports is a maximum 300,000 tons(with 200,000 tons for Busan Port and 100,000 tons for Gwangyang Port).

In the future, LME warehouses will continue to be expanded in response to increases in LME traded cargoes in Northeast Asia. Also, by linking LME warehouses of Busan and Gwangyang ports, storage capacity and capacity to attract cargo will greatly be increased.

## **6) Improvement of Problems in Management of LME Warehouses and Cargoes**

### **(1) Measures to Reduce Charges for Use of LME Warehouse Facilities**

Currently, *the State Properties Act* and *the Regulation on the Use of Facilities at Trade Port and Fees Charged* are the legal basis for charging usage fees for warehouse and CFS located in the port area. Of the two, the latter is applied to port facilities within the port area as charges are lower than when the former is applied. Furthermore, *the Regulation on the Use of Facilities at Trade Port and Fees Charged* may also be applied to port facilities located outside of the port area pursuant to notification by the Minister of Maritime Affairs and Fisheries.

On the other hand, *the State Properties Act* is applied to the LME warehouse in Yongdang in Busan Port even though it is a port facility located in the Customs-Free Zone. As a result, charges there is about 2.2 times higher for warehouse usage and about 3.1 times higher for CFS usage than charges applicable under *the Regulation on the Use of Facilities at Trade Port and Fees Charged*. Therefore, as LME warehousing will be utilized as the engine to help Korea emerge as the logistics hub of Northeast Asia, measures should be sought to apply *the Regulation on the Use of Facilities at Trade Port and Fees Charged* to LME-related business in order to lower charges. Currently, most warehouses located in Yongdang(Busan Port) are old and insolvent and LME warehouses are saturated with cargo. Thus, repair, maintenance and redevelopment should be performed on the old warehouses so that they may be utilized as LME warehouses.

As for the LME warehouse of Global Enterprise at Gwangyang

Port, construction thereof was performed by the private developer/company which recovers its investment through long-term free use of facilities. Therefore, there is a high cost burden for the investor. In order to alleviate investment burdens on warehouse operators, measures should be sought to reduce the period of investment recovery.

## (2) Improvement of Procedures for Inward Carriage into or Outward Carriage out of LME Warehouses

When cargo is brought into the LME warehouse, volume adjustment procedure is inevitable due to the gap in the B/L volume and actual measured volume. In such a case, each shipping company is required to revise the ship's manifest in addition to filing the revision during cargo's warehouse entry. As the system is inefficient, improvements are called for, such as introduction of system shared by shipper, carrier and terminal operator that enables one filing to automatically revise all relevant files.

Second, flexibility in submitting B/L surrender and original B/L is needed. In case of cargo coming from adjacent countries, documents may arrive later than the cargo itself. Thus, systems should be put in place so that cargo arriving at Customs-Free Zones earlier than its documents may be handled before the documents are submitted.

Third, issuance of license(permit) should be simplified in re-exporting and importing LME cargoes. After inward carriage into warehouse, LME cargo is divided up and distributed to multiple shippers/cargo owners by being re-exported to other countries or imported to the domestic market. The B/L code stated in the declaration differs according whether the whole volume of cargo is re-exported/imported or whether the volume of cargo is divided up

for re-export/import. Due to such difference in B/L code, the shipper must issue several declarations when purchasing cargo which is to be divided up for re-export/import. Also, the shipper must prepare several invoices to pay the clearing fee in accordance with the number of declarations. Therefore, it will be more efficient if clearing fees were calculated on a case-by-case basis rather than on a percentage of amount on the invoice. Also, issuance of declarations should be simplified for LME cargoes by applying a separate code for LME cargo.

Lastly, unnecessary submission of documents to relevant authorities and inefficient administration service should be improved in order to facilitate the smooth flow of LME cargo.

## V. Conclusion

This paper aims to suggest methods for promoting Busan Port and Gwangyang Port as the logistics hub of Northeast Asia through LME warehousing, which commenced operations in full-scale this year.

As is generally known, there is intense competition among ports located in major economic blocs to become the regional logistics hub. Likewise, Korea is also taking part in the competition to emerge as the logistics hub in the Northeast Asian economic bloc. Korea is second to none in terms of being favorably located at the center of Northeast Asia. Taking advantage of its geographical location, the Korean government has prepared the *Northeast Asian Logistics Hub Roadmap* to make Korean peninsula the logistics hub of Northeast Asia. In addition, the government is taking measure to bring about innovative improvements to the Customs-Free Zone system, which

will be most favorable to LME warehouse operations.

The successful bid by Korea to house LME warehouse is only the first time that a global logistics company has been attracted to invest in the Customs-Free Zone. Thus, LME warehousing operations is still in its initial stage in Korea. Regardless, its future looks bright as both Busan and Gwangyang ports are favorably located to emerge as international logistics and trading center for LME cargoes, as there is sufficient market demand and potential for LME warehousing, and as the Korean government plans to expand Customs-Free Zones to attract more LME warehouses by designating port hinterland currently under construction as Customs-Free Zones.

Therefore, in order for LME warehousing to be successfully operated in Korea to result in Korea's preempt of logistics hub position in Northeast Asia, improvements to the Customs-Free Zone system should be facilitated, to make Korea's Customs-Free Zone more attractive to businesses than the Free Trade Zones in other countries. Also, backed by the Northeast Asian market which accounts for more than 30% of the global demand for non-ferrous metals, Korea should attract more LME warehouses and devise other measures to promote logistics including joint-ventures with global logistics firms possessing warehouse operation know-how and marketing capabilities. Also, considering that LME warehousing is only in its initial stage in Korea, LME warehouse operations of advanced countries should be benchmarked and expert manpower should be actively fostered. Lastly, various related charges and costs should be reduced and systems and procedures related to LME cargo flow should be improved so that price and non-price competitiveness of Korea's LME warehouses can be strengthened and maintained.

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