



# Korea Environmental Policy Bulletin

## Korean Government Policy to Support the Domestic Environmental Industry and Technology Export

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### Summary

Small and medium-sized businesses play an important role in the environmental industry and technology development in Korea, occupying a 90% share of the entire industry. Of Korea's environmental industries and technologies, sewage/waste water disposal and waste disposal technology as well as environmental equipment have gained a world-class status with significant price competitiveness.

The Korean government has been implementing various environmental industry promotion policies to support early overseas market entry of Korean small and medium-sized firms and their efforts to attract project orders. To support environmental technology exports the government provides tailored support for Korean enterprises' overseas market entry by phase – from the collection of information on overseas markets to the establishment of a network for global environmental cooperation and winning overseas project contracts. As part of its efforts to build a network for global cooperation and identify overseas projects, the Korean government also operates the Eco-Trade Support Center for Environmental Business to establish an overseas environmental information network for initial overseas market entry: provides market entry consulting and country-specific legal advice: and supports the establishment of Environmental Improvement Master Plan, mainly for developing countries. Notably, the Green Forum - a business consultation

meeting, and other high-level environmental cooperation meetings were held during Global Green Hub Korea (GGHK), the largest event in the sector in Korea, that played host to many potential clients when celebrating the hosting of the Green Climate Fund in Songdo, Incheon in 2013. The policy outcome has been notably positive. Excellent domestic environmental technologies have been promoted, and small and medium businesses, which typically lack experience in developing overseas projects, now enjoy greater opportunities to win global environmental project contracts.

In fact, the Korean environmental business is rapidly expanding to the global market. Currently, the ECC (Environmental Cooperation Center) is operated in China, Vietnam, and Indonesia and the Training Program

for International Environmental Specialists, an invitational training program for environmental personnel from developing countries, is being provided to introduce Korean environmental technologies and enterprises to importing countries. For overseas projects that Korean firms take part in an open bid for or plan to participate in, support is given for environmental feasibility study to help Korean companies win contracts. In addition, outstanding domestic environmental technology is customized to local conditions through the International Cooperation Program for Environmental Technology which also helps companies to win contracts. Korea has been focusing on entering the Chinese and other Asian environmental markets, but plans to expand its environmental exports to the Middle East, Africa, and Central and Eastern Europe.

## I. Policy Backgrounds

The Korean government is nurturing the domestic environmental industry and technology, and is implementing various policies to encourage the export of domestic technologies with proven excellence. KEITI was established in April 2009 to foster the industry systematically, providing specialized support for it and its technology development. In October 2011 the Support for Environmental Technology and Environmental Industry Act was fully enforced, and the comprehensive mid-to-long term plan to nurture the environmental industry through overseas market expansion was established, thereby laying the policy foundation to support the industry development in Korea.

Korea has high technical skills in the area of sewage, waste water disposal, and waste disposal, which are mostly needed by developing countries. Korea also

has a high level of price competitiveness in the environmental equipment area. To promote the overseas market entry of these high-rate domestic environmental technologies, Korea has been sending "Environmental Cooperation Missions" to developing countries in Asia, South America, Middle East, North Africa, Central and Eastern Europe since 2001.

In addition, Korea has installed the ECCs (Environmental Cooperation Centers) in China, Vietnam and Indonesia to provide Korea's experiences in environmental improvement projects, and introduce to the countries Korean enterprises and technologies that can be utilized for their environment-related public projects. As a result, a win-win system has been developed that benefits both Korea and the partner countries.

## II . The Current State of the Korean Environmental Industry and Implementation of Overseas Market Entry Promotion Policy

### 1. The Current State of the Korean Environmental Industry

In 2011 there were 34,196 environment-related businesses in Korea which employed 183,583

workers. The industry had been growing steadily as the number of businesses in the sector increased by 13% and the revenue by 45% between 2008 and 2011. Table 1 shows an overview of the environmental industry in Korea.

Table 1 : Number of Environment-related businesses by Year

	2008		2009		2010		2011	
	Total	per Business	Total	per Business	Total	per Business	Total	per Business
Number of Businesses	30,221		31,728		33,835		34,196	
Sales (\$million)	35,629	1.2	38,423	1.2	48,505	1.4	51,832	1.50
Employment(persons)	185,346	6.1	195,587	6.2	214,648	6.3	183,538	5.4

Source: Report on the Environment Industry Survey, 2012  
\$1= KRW1145.3 (July. 1. 2013)

The amount of exports by the Korean environmental industry amounted to \$2,874 million (KRW 4.9 trillion) in 2011, which is four times larger than it was in 2006 (KRW 1.2 trillion). Exports to the Middles East and advanced countries (G8) combined occupied the

largest proportion in the total export by the domestic environmental industry in 2011. The amount of exports to the Southeast Asian region was KRW 384.7 billion, a 158.5% increase from the previous year.

Table 2 : Amount of Exports by Area

	2010		2011		Rate of Change
	Export (\$million)	Share	Export (\$million)	Share	
Total	2,874	100%	4,345	100%	51.2%
China	394	13.7%	435	10.0%	10.3%
Southeast Asia*	130	4.5%	336	7.7%	158.5%
Middle East	773	26.9%	1,073	24.7%	38.9%
Africa	115	4.0%	66	1.5%	-42.8%
Advanced countries**	759	26.4%	1,186	27.3%	56.2%
Oceania	75	2.6%	122	2.8%	63.5%
Others	628	21.9%	1,128	26.0%	79.6%

Source: Report on the Environment Industry Survey, 2012

\* Southeast Asia: Vietnam, Laos, Cambodia, Thailand, Myanmar, Malaysia, Singapore, Indonesia, Philippines, Brunei

\*\* Advanced country(G8): France, the United States, the United Kingdom, Germany, Japan, Italy, Canada, Russia

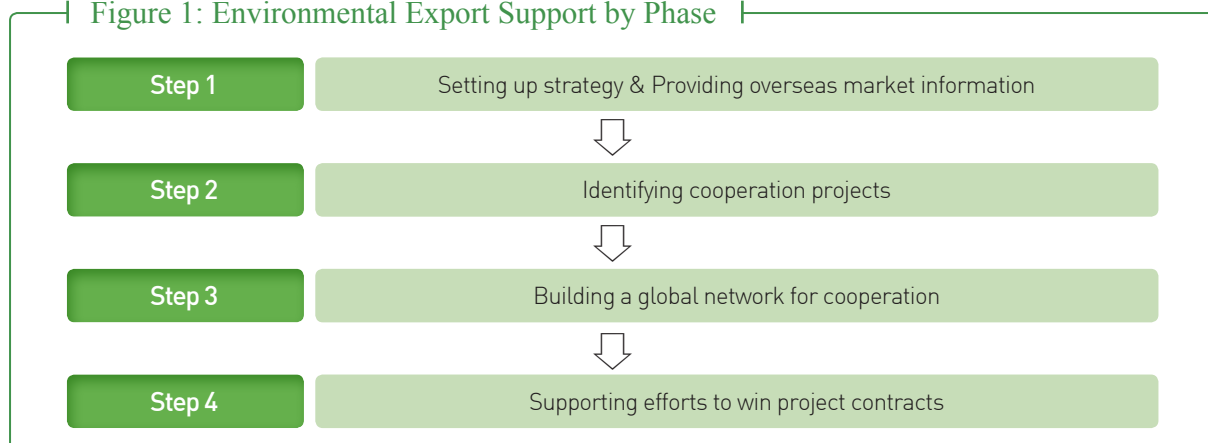
\$1= KRW1145.3 (July. 1. 2013)

Korea's environmental industry has accumulated a large amount of environmental technology used to resolve diverse environmental problems that the country has encountered during its remarkable history of economic growth. In particular, Korea attained a world-class level in end of pipe technology, such as sewage/waste water disposal, and waste disposal; and is equipped with high price competitiveness in the area of environmental equipment. As such, Korea can substantively contribute to the provision of the end of pipe technology needed by developing countries.

## 2. Implementation of Overseas Market Entry Promotion Policy

The Korean government devised and has been implementing a policy to foster its environmental industry through export expansion. The policy provides support tailored to the needs of different stages of export activity by Korean companies in the environmental sector— from the provision of market information to the identification of cooperation projects, the establishment of a cooperation network with major overseas partners, and to support for winning contracts.

Figure 1: Environmental Export Support by Phase



### Step 1: Setting up strategy and providing overseas market information

Korea has been developing and operating an overseas environmental information network (encompassing overseas bidding and buyer information, international environmental regulations/standards, etc.) to facilitate early and stable overseas market entry of Korean enterprises. It

also publishes the yearly Promising Environmental Market Outlook based on overseas environmental market surveys while the Eco-Trade Support Center for Environmental Business provides market entry strategy consulting and legal advice on target countries.

#### • Setting up the Basic Plan for Environmental Industry's Overseas Market Entry and the 3rd Environmental Technology and Environmental Industry Nurturing Plan

The Ministry of Environment drew up the Basic Plan for Environmental Industry's Overseas Market Entry (November 2011) to strategically nurture the domestic

environmental industry and promote overseas entry, by analyzing the present conditions of the domestic and global market, as well as the existing overseas entry

support policy for the industry. The 3rd Environmental Technology and Environmental Industry Nurturing Plan implemented in 2013 is a comprehensive pan-governmental plan that connects environmental technology development with the aspects of industrial

#### • Overseas Environmental Market Survey

The Korean government publishes the Promising Environmental Market Outlook as part of its efforts to increase overseas market entry of domestic environmental industries. It surveys, analyzes and distributes the information on the trends of environmental technology development and industrial

application. The plan consists of identifying projects to expand the global market, increasing support for winning contracts, and increasing cooperative projects with developing countries using the Multilateral Fund.

policy, and lists countries with promising potential in each continent. The Outlook also covers economic characteristics of surveyed countries, analyses of their investment environment, environmental market trends and government policy.

#### • Eco-Trade Support Center for Environmental Business

The Eco-Trade Support Center for Environmental Business was established in June 2009 to solve various difficulties faced by small and medium-sized environmental firms in relations to export. The Center provides export consulting by dedicated internal staff members, as well as specialized consulting by an overseas market entry support team composed of external export specialists including specialized law and accounting firms under working agreement with

the Center. In addition, the Center collects information to provide standard export contract documents to export companies, and to publish and distribute export practice guidebooks for China and Vietnam. Also, a briefing session on overseas market entry strategies for the industry is held every year (8 times in total so far) to share information on local market conditions and successful/failed cases of overseas market entry of domestic firms.

### Step 2: Identifying cooperation projects

To establish a network for global environmental cooperation with target countries and to identify environmental projects, ① Establishment of

Environmental Management Master Plan ② Environmental Technology Pilot Project and ③ Global Green Hub Korea (GGHK) project have been initiated.

#### • Establishment of Environmental Management Master Plans for Partner Countries

The Korean government has provided resources for building up Environmental Management Master Plans in partner countries since 2007 to facilitate friendly market entry of Korean environmental companies. The Plan involves analyzing the environmental technology of developing countries, supporting the establishment

of a comprehensive environmental improvement plan, and identifying inter-governmental cooperation projects and other promising areas for Korean companies including investment targets based on a thorough analysis of the present market conditions of the countries involved. The Plan is implemented

in several countries, including Vietnam, Indonesia, Azerbaijan, Tanzania, and Algeria in association with the ODA (Official Development Assistance) and/or

private investments, assisting Korean businesses with early entry into and occupation in target markets.

**Table 3 : Environmental Management Master Plan Project**

	2007	2008	2009	2010	2011	2012	2013
Project Cost (KRW million)	1,200	400	1,000	1,200	1,800	1,800	3,000
Project Cost (\$ million)	1.0	0.3	0.9	1.0	1.6	1.6	2.6
Country	Vietnam	Indonesia	Cambodia, Azerbaijan	Uzbekistan, Tanzania	Mozambique, Mongol, Algeria	Peru, Chile, Bangladesh	Myanmar, Laos, Colombia, Mexico

Source: Ministry of Environment  
\$1= KRW1145.3 (July. 1. 2013)

### • Environmental Technology Pilot Project

The quality of Korean technology and its application potential have been verified through field applications, in the form of a pilot project, that have helped solve ongoing environmental issues in countries involved. Pilot

projects have been implemented in China, Indonesia and some African countries, such as the one that has been underway since 2012 installing a harmful waste incinerator in the city of Linyi in Shandong, China.

- Pilot project to provide water supply facility in Africa

As part of the Pilot Project the government has been installing water supply facilities in small villages in Africa since 2011. Korean water companies expect to enter the African water market through the development of water supply systems that suit local conditions in Africa. The project has been implemented in close association with the Well Digging Project by KOICA

(Korea International Cooperation Agency), an ODA project designed to alleviate water shortage in the continent. In 2011 a small-scale water supply facility was installed in Ghana, followed by one in Nigeria in 2012, providing access to clean water to their residents previously deprived of it.

### • Commencing Global Green Hub Korea (GGHK)

The Korean government has put forward the GGHK program, which is the largest invitational event for contracting authorities in the environmental sector in the entire world, in order to establish a network with major partners having market potential for Korean businesses. GGHK serves as a bridgehead that allows promising domestic export enterprises to enter overseas markets. The event consists of the Green

Forum—a business consultation meeting and briefing sessions on contract winning methods tailored to each country as well as on export financing, in addition to an exhibition of high-performing Korean small and medium businesses. This is to support overseas business development of small and medium-sized environmental firms that typically lack project discovery and marketing capability.

### Step 3: Building a network for global environmental cooperation

The “Environmental Cooperation Mission” is dispatched to potential markets in Asia, Central and South America, Central and Eastern Europe, Africa, and Middle East, to support domestic enterprises’ efforts

to win contracts for overseas government projects and to promote their technologies. In addition, the Environmental Cooperation Centers are currently in operation in China, Vietnam, and Indonesia.

#### • Dispatching Environmental Cooperation Mission

The Korean government seeks to encourage the overseas market entry of domestic environmental firms by sending a pan-government delegation designed to help with difficulties encountered during the stages of export. The Ministry of Foreign Affairs, the Ministry of Knowledge and Economy (currently the Ministry of Trade, Industry and Energy) and related institutions together sent a “green caravan” to Central and South America in November 2011 to promote cooperation with the Ministry of Water Resource and Water Supply Cooperation of Sao Paulo, Brazil. In June 2012, the Environmental Cooperation Mission was dispatched to three Southeast Asian countries (Malaysia, Myanmar and Thailand), comprised of officials from the Korean Ministry of Foreign Affairs and the Ministry of Land, Transport

and Maritime Affairs, to support contract winning in the new water markets. The delegation identified water-related cooperation projects; discussed an integrated water management method to alleviate water shortage; introduced advanced processing technologies; examined other potential areas of cooperation and practical methods to achieve it. In addition, the Environmental Cooperation Mission was dispatched to two Central and Eastern European countries (Bulgaria and Romania) in November 2012, together with KOTRA and other relevant institutions, in order to discuss environmental equipment delivery and to secure contracts through a one-to-one business consultation. The Mission also worked to promote an environmental MOU with Bulgaria, signed in April 2013.

#### • Foundation and Operation of Environmental Cooperation Center (ECC)

The Korean government has opened the ECC and operated it in three countries – Beijing, China since July 2001; Hanoi, Vietnam since June 2005; Jakarta, Indonesia since December 2011. The ECC establishes an environment-related network with the governments and provides Korean experiences in

environmental improvement projects. The ECC also assists the environmental improvement project of the partner countries by introducing Korean environmental enterprises and technologies that can be utilized for government projects, and by supplying business lounges and consultation free of charge.

Table 4 : Introduction to the Environmental Cooperation Center (ECC)

	CKECC (China-Korea Environmental Cooperation Center)	VKECC (Vietnam-Korea Environmental Cooperation Center)	IKECC (Indonesia-Korea Environmental Cooperation Center)
Country	China(Beijing)	Vietnam(Hanoi)	Indonesia(Jakarta)
Address	3F, BOYA International Building, No.1 Lize middle 1 road, Wangjing, Chaoyang District, Beijing, China. 100-102	15F, VIT Tower, 519, Kim Ma, Ba Dinh, Hanoi, Vietnam	K-Link Tower 27th Floor Suite C, Jl, Jendral Gatot Subroto 59A, Jakarta Selatan 12950
Phone	TEL. +86-10-8591-0997 FAX. +86-10-8591-0995	TEL. +84-4-2220-8210 FAX. +84-4-2220-8211	TEL. +62-(0)21-2902-6930 FAX. +62-(0)21-2902-6920
	<a href="http://www.ebasiacenter.or.kr">http://www.ebasiacenter.or.kr</a>		

Source: Ministry of Environment

### Step 4: Supporting efforts to win project contracts

The Korean government funds feasibility studies on overseas environmental projects for which domestic enterprises plan to enter an open bid; and supports them to obtain project contracts through

the International Joint Localization of Environmental Technology project designed to demonstrate and localize outstanding domestic technologies in such a way that meets local needs.

#### • Support for Feasibility Study on Overseas Environmental Projects

This project bears the cost of feasibility study on overseas environmental projects needed at the early phase of project identification in order to promote overseas market entry of domestic environmental firms. In 2008 14 studies were supported in 11 countries and a total of \$5.8 million (KRW 6.63

billion) was provided for feasibility studies involving 72 countries from 2008 to 2012. In 2013 about \$13.1 million (KRW 1.5 billion) will be provided for such study on projects for which domestic companies have entered a bid with high probability of winning a contract.

Table 5 : Support for Feasibility Study on Overseas Environmental Projects

	Number of Projects	project cost (KRW billion)	Project Cost (\$ million)	Number of Countries	Target Countries
Total	84	6.63	5.8	72	
2008	14	0.90	0.8	11	China, Mongolia, Philippine, Vietnam, Indonesia, Malaysia, Angola, Azerbaijan, Nicaragua
2009	19	1.40	1.2	14	Japan, China, Vietnam, Indonesia, Thailand, Philippine, Uzbekistan, Saudi Arabia, Kuwait, Libya, Algeria, Mozambique, Tanzania, Turkey
2010	23	1.74	1.5	19	Japan, China, Malaysia, Vietnam, Cambodia, Thailand, Philippine, Sri Lanka, Turkmenistan, Iran, Tunisia, Ghana, Nigeria, Mozambique, Mozambique, Russia, Chile, Peru, Australia
2011	20	1.30	1.1	16	China, Laos, Malaysia, Vietnam, Indonesia, Philippine, Bangladesh, Sri Lanka, UAE, Ghana, South Africa, Turkey, the United States, Colombia, Australia
2012	20	1.30	1.1	12	China, Myanmar, Vietnam, Indonesia, Cambodia, Thailand, Philippine, Oman, Kuwait, Angola, South Africa, Ecuador, Peru

Source: Ministry of Environment  
\$1= KRW1145.3 (July. 1. 2013)



### • International Cooperation Program for Environmental Technology

The International Cooperation Program for Environmental Technology is designed to reduce business risks, such as changes in local environment-related systems and has been implemented jointly with target countries. Environmental technologies of high quality developed in Korea are further studied together with local research institutes in order to substantiate, improve and localize them with a view to export. Beginning in China in 2004, the Program has expanded to include new markets such as Indonesia, Vietnam and other Southeast Asian countries, and countries in the Middle East and Americas. The project name was changed

to its current name in 2012 to clarify the purpose of the project. In 2013 about KRW 4 billion will be provided for environmental technologies that can be commercialized overseas. Through the program a total of KRW 214.7 billion worth of environmental technology have been exported over a period of six years while the Korean government has spent some KRW 33.4 billion in government aid on 109 projects since 2004. This means that the export value is about 6.4 times greater than the budget spent.

### • Green Export Voluntary Agreement

The Korean government tries to nurture “small but strong export companies” by signing the Green Export Voluntary Agreement with them. The Agreement is designed to identify promising small and medium-sized export businesses specialized in environmental technology and to support their export activities. The three-year Agreement scheme (2011-2013) came about after restructuring (in 2011) of an export support project introduced in 2010 for small and medium environmental firms. The Agreement

was signed with 30 small and medium businesses specialized in the sector with proven technical skills, export capability, financial soundness and the will to export. Each company declares and implements an export target for the coming three years, and the government provides up to KRW 17 million in export support service. The support includes overseas patent registration and acquisition, technology trade and export consulting, overseas certificate acquisition and overseas market survey.

## III . Results and Future Plan

### 1. Export Market Expansion

Export markets of Korean environmental industry have been expanded from China and other Asian countries into advanced countries like the U.S., Japan and Germany, as well as Brazil, Turkey, and Iraq.

### 2. Comprehensive Environmental Improvement Projects in Developing Countries

The Korean government’s support programs for

the domestic environmental industry have initiated the establishment of comprehensive environmental improvement projects in several developing countries that meet their particular needs. The projects include: a long-term preservation plan for Vietnam in 2007; a comprehensive waste disposal plan for Indonesia in 2008; a grant project for waste burial site construction for Cambodia in 2009; a sewage processing plant construction at Pershagi, Azerbaijan; a waste water re-use pilot project (Korea–Azerbaijan government matching fund project); environmental master plans for Tanzania and Uzbekistan in 2010; El Harrach river water quality improvement project for Algeria in 2011; a basic environmental improvement master plan for Mozambique (concerning water supply, sewage construction and waste management); a proposal

for urban waste management and abandoned mine management methods for Mongolia.

### 3. Support for Feasibility Study on Overseas Environmental Projects

The government support program for feasibility study on overseas environmental projects aims to create and expand access to overseas markets for Korean companies. It operates in close association with other foreign aid projects (e.g., ODA) to maximize the combined effects. The number of target countries increased from 11 countries in 2008 to 14 in 2009, 19 in 2010 and 12 in 2012. The coverage is expected to expand further.

Table 6 : Overview of Feasibility Study Support Project

	2008	2009	2010	2011	2012
Number of Projects	14	19	23	20	20
Project Cost (KRW billion)	0.9	1.4	1.74	1.3	1.3
Project Cost (\$ million)	0.8	1.2	1.5	1.1	1.1
Number of Countries Involved	11	14	19	16	12

Source: Ministry of Environment  
\$1= KRW1145.3 (July. 1. 2013)

### 4. International Cooperation Program for Environmental Technology

The program is designed to support joint research with local research institutes for the purpose of localizing Korean technologies to meet the needs of the importing country. A total of KRW 214.7 billion worth of environmental technology was exported over the last six years (2006 to 2012). In 2012

the export amounted to about KRW 84 billion, a 60% increase from the previous year. The scope of technology support has enlarged from research and analyses on the quality of air, water, soil and waste management, to those on waste recycling, greenhouse gas reductions and harmful substance management. The countries involved have been expanding to include China, Vietnam, Russia, the U.S.A, and countries in the Middle East and Europe.

Table 7 : Overview of Support for International Joint Research on Environmental Technology

Year	Number of Joint Research	Total Amount (KRW billion)	Total Amount (\$ million)	Country
2005	11	2.0	1.7	China
2006	5	2.9	2.5	China
2007	11	4.1	3.6	China
2008	13	4.4	3.8	China, South Asia
2009	16	5.0	4.4	World
2010	18	5.0	4.4	World
2011	19	5.0	4.4	World
2012	16	5.0	4.4	World

Source: Ministry of Environment  
\$1= KRW1145.3 (July. 1. 2013)

## 5. Global Green Business Partnership

Decision-makers in overseas environmental industries and import project managers have been invited to Korea and introduced to Korean environmental technologies. The visits have served as a venue for Korean companies to establish business partnerships with them. The core areas of interest include water and sewage, waste water, waste, biomass and air pollution control. A total of 343 environmental project managers were invited from 62 countries from 2009 to 2012, attending 10 events. During these events 495 projects worth 43 billion dollars were discussed.

## 6. Environmental Technology Pilot Project

Sharing some of Korea's excellent environmental technologies and policies with developing countries in the form of a pilot project has been an important way to promote environmental technology export by Korean firms. The project strives to solve environmental problems faced by developing countries, as in the case of sewage disposal plant construction at Tangyin, China in 2011. Other notable projects include: water supply system installation at small villages in Africa in 2011; Chilliungang river restoration in Indonesia in 2012; and the installation of a harmful waste incinerator in Linyi in Shandong Province, China.

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