Invest Korea

February 2021

Spearheading Digital Transformation

CHENFAI CHUNG

Vice President & General Manager, North Asia
Emerson Automation Solutions

Korea, the World's No.1 in Innovation

Strengthening Korea's Position as a Manufacturing Powerhouse through the Introduction of Smart Factories

Location Report: Gyeongnam Changwon Smart Green Industrial Complex

KOTRA is Korea's national trade and foreign investment promotion agency

With 127 offices in 84 countries, KOTRA functions as a global business platform

We provide comprehensive support for foreign investors, as well as business matchmaking services for foreign buyers and Korean businesses. Furthermore, KOTRA supports business partnerships between global enterprises and promising Korean SMEs, while creating global jobs through its vast trade and investment networks overseas. By staying up to date on the latest information on trade, exhibitions and investment, we're able to offer necessary support to Korean businesses and foreign companies.

Industrial Automation

Foreign Direct Investment

Tesla launches ModelY in S. Korea

On Feb. 12, U.S. electric vehicle maker Tesla Inc. launched its compact sport utility vehicle (SUV), the Model Y, in S. Korea as it tries to boost sales in the country.

Tesla Korea said the Model Y is available in three trim levels here, with the starting price for the standard range model set at KRW 59.99 million (USD 54,191). The prices for the long-range model and the performance trim are to start from KRW 69.99 million and KRW 79.99 million, respectively.

Starting this year, S. Korea will give the full amount of government subsidies to electric cars that are priced below KRW 60 million, meaning only those who buy the Model Y standard trim can get the subsidies in full.

The U.S. EV brand also launched the 2021 version of the Model 3 sedan. It will be available in three trims as well, with the price starting from KRW 54.79 million.

With the launch of new models, Tesla Korea said it will establish supercharger stations in 27 spots in the country and add a maximum eight maintenance centers nationwide by the end of this year.

The data also showed that imported EV sales reached 15,183 units in 2020, and Tesla represented 77.9 percent of them.

Korean e-commerce giant Coupang heads to NYSE for IPO with dual-class shares

S. Korean e-commerce giant Coupang Inc. headed to New York for its initial public offering with expected valuation of over USD 50 billion will list shares with different voting rights.

According to Coupang's IPO plan, the company will employ a dual-class structure when listing its common shares on the New York Stock Exchange.

The multi-class share structure, popular in the U.S., is used by major tech firms like Google parent Alphabet Inc. The practice is not allowed in Korea, as such can leave some shareholders with no voting rights.

Coupang has shares categorized in ten different classes, with voting rights varying by class. It is not known how much and what kind of shares each of the firm's key investors own. Its main backer is Japan's SoftBank Group Corp. and other key investors include Sequoia Capital and BlackRock Inc.

On Feb. 12 (local time in the U.S.), Coupang revealed that it recently filed for IPO with U.S. Securities and Exchange Commission. Coupang has been long expected to have its shares listed on the New York bourse.

Founded in 2010, Coupang is the largest e-commerce player in Korea with 14.8 million active customers as of the fourth quarter 2020. Revenue per active customer averaged USD 256 in the fourth quarter, up 59.0 percent from a year earlier.

Trade & Commerce

S. Korea's exports jump 69 pct in first 10 days of Feb.

S. Korea's exports jumped 69.1 percent on-year in the first 10 days of February on strong shipments of chips and autos amid the pandemic, customs data showed Feb. 15.

The country's outbound shipments stood at USD 18 billion in the Feb. 1-10 period, compared with USD 10.6 billion a year earlier, according to the data from the Korea Customs Service.

By sector, outbound shipments of memory chips, a key export item, advanced 57.9 percent on-year in the cited period, and exports of autos soared 102.4 percent.

Semiconductors accounted for about 20 percent of exports by S. Korea, home to Samsung Electronics Co., the world's largest memory chipmaker, and its smaller rival SK hynix Inc.

Exports of petroleum products rose 37.5 percent on-year amid rising oil prices, and those of telecommunication devices gained 88 percent.

By country, shipments to China—S. Korea's largest trading partner—jumped 65.7 percent on-year, and exports to the United States shot up 91.4 percent, the data showed.

In January, exports, which account for half of the S. Korean economy, rose 11.4 percent on-year on the back of brisk demand of chips and autos, the data showed.

The finance ministry forecast the country's overseas shipments to grow 8.6 percent on-year this year on strong shipments of semiconductors and cars.

Industry

Smart factories rise sharply, nearing 20,000

A growing number of factories in S. Korea have adopted smart solutions based on cutting-edge technologies to improve manufacturing efficiency, government data showed Jan. 14.

A total of 19,799 smart factories were registered in the nation till the end of 2020, up from 12,660 in 2019 and 7,903 in 2018, according to the data from the Ministry of Small and Medium-sized Enterprises (SMEs) and Startups.

A smart factory is defined as a factory where production processes are combined with digital technology, smart computing and big data and advanced networks to create an agile, automated manufacturing environment.

Large companies, including chipmaker Samsung Electronics Co. and steelmaker POSCO, have collaborated with their contractors to streamline their manufacturing lines and adopt digital solutions, including 5G, robots and the Internet of Things.

The government aims to create 30,000 smart factories and 10 smart industrial zones by 2022 to upgrade the S. Korean manufacturing industry's competitiveness.

S. Korea's online food market grows explosively in 2020 amid pandemic

S. Korea's online food market posted explosive growth in 2020 from a year earlier due to the fallout from the coronavirus pandemic, data showed Feb. 15.

The value of online food transactions in Asia's fourth-largest economy came to KRW 43.4 trillion (USD 39.2 billion) last year, up 62.4 percent from a year earlier, according to the data from Statistics Korea and industry sources.

The online food market surpassed the KRW 40 trillion mark last year after reaching USD 26.7 trillion the previous year. Last year's surge was attributed to a marked increase in contact-free consumption in the wake of the coronavirus outbreak.

Mobile shopping stood at KRW 35.1 trillion, or 70 percent of the total, with internet shopping taking up the remainder.

Government & Policy

S. Korea to increase number of eco-friendly cars to 7.85 mln by 2030

S. Korea said on Feb. 18 that the accumulated number of eco-friendly cars running in the country will reach 7.85 million by 2030, in line with its vision to go fully carbon-neutral by 2050.

The target will mark a sharp rise from 820,000 units tallied in the previous year, according to the Ministry of Trade, Industry and Energy. The emission of greenhouse gases from cars will also fall 24 percent over the period.

The announcement came as a part of the five-year fourth basic plan on promoting the eco-friendly automobiles. S. Korea has been making efforts to penetrate deeper into the future car industry in line with its green energy drive. As of 2020, S. Korea was the world's fourth-largest exporter of electric cars and the world's top producer of hydrogen fuel cell models.

To meet the new target, public organizations are obligated to purchase only eco-friendly cars starting this year, while more incentives will be provided to the private sector as well.

S. Korea plans to install at least 120 fast-charging stations for electric vehicles this year, which would allow them to travel 300 kilometers after being charged for 20 minutes. Parking lots will be obligated to have at least 10 charging booths for every 200 cars starting in 2022. Hydrogen fuel cell cars will be able to reach charging stations within 30 minutes nationwide.

To make eco-friendly cars more affordable, S. Korea said it plans to slash the price tag by at least KRW 10 million (USD 9,200) by 2025 through tax incentives and developing home-grown parts.

Other major goals include releasing fully autonomous vehicles by 2024. Some 1,000 auto parts makers will be transformed as future-car related businesses by 2030 as well.

Source: www.investkorea.org, Yonhap News Agency, Pulse by Maeil Business News Korea

Korea, the World's No.1 in Innovation

Why is Korea the most innovative country in the world?

No.1 on the 2021 Bloomberg Innovation Index

S. Korea has been named the most innovative country in the world, topping the 2021 Bloomberg Innovation Index, released in February 2021, for the eighth consecutive year in Asia. This can be largely attributed to both the unflagging commitment of Korean businesses and the authorities in investing in the country's future growth even when encountering tough headwinds at home and abroad. By launching a development and relief package dubbed the Korean New Deal, which comprises a set of sub-plans like D.N.A (data, network and AI) and +BIG3 (future mobility, bio-healthcare, system semiconductor) drafted to undertake reforms in the economy along with spending plans rolled out this year to invest nearly KRW 100 trillion in research and development (World's top 5 in R&D expenditure, 2021), S. Korea has set out the path toward innovation-driven growth.

The Bloomberg Innovation Index makes a comprehensive analysis using seven metrics under which numerical data aggregated by each country are scored to rate a country's innovation capacity. S. Korea has been of the front rank in five sub-indicators of the index—2nd in R&D intensity, 2nd in value-added manufacturing, 4th in high-tech density, 3rd in researcher concentration and 1st in patent activity. Such resources to drive innovation would probably be part of the reasons that well explain why so many global investors are fascinated with Korea as the best place to invest in.

No.1 in the 2021 Bloomberg Innovation Index

2021 Rank	Economy	Total Score	R&D Intensity	Manufacturing Value-added	High-tech Density	Patent Activity
1st	**S. Korea**	**90.49**	**2**	**2**	**4**	**1**
2	Singapore	87.76	17	3	18	4
3	Switzerland	87.60	3	5	11	18
4	Germany	86.45	7	6	3	14
5	Sweden	86.39	4	21	6	21
6	Denmark	86.12	8	17	8	23
7	Israel	85.50	1	30	5	8
8	Finland	84.86	11	12	13	10
9	Netherlands	84.29	14	26	7	9
10	Austria	83.93	6	9	23	15

*Source : Press release(Feb 3, 2021), Ministry of Economy and Finance

No. 2 in R&D expenditure to GDP ratio

S. Korea has also maintained a leading position, ranking 2nd in R&D spending as a percentage of gross domestic production (GDP), which well signifies that the country has been making unremitting efforts to further improve its innovation prowess. According to the "Survey of Research and Development in Korea, 2019," S. Korea placed 2nd for R&D expenditure to GDP ratio with 4.64 percent, a 0.12 percent jump on year, following Israel (4.94%, as of 2018)

※ The OECD average (excluding the data values for Korea) is based on the database sourced in 2018 and the statistical variables extracted in 2019 by country can change rankings and scores.

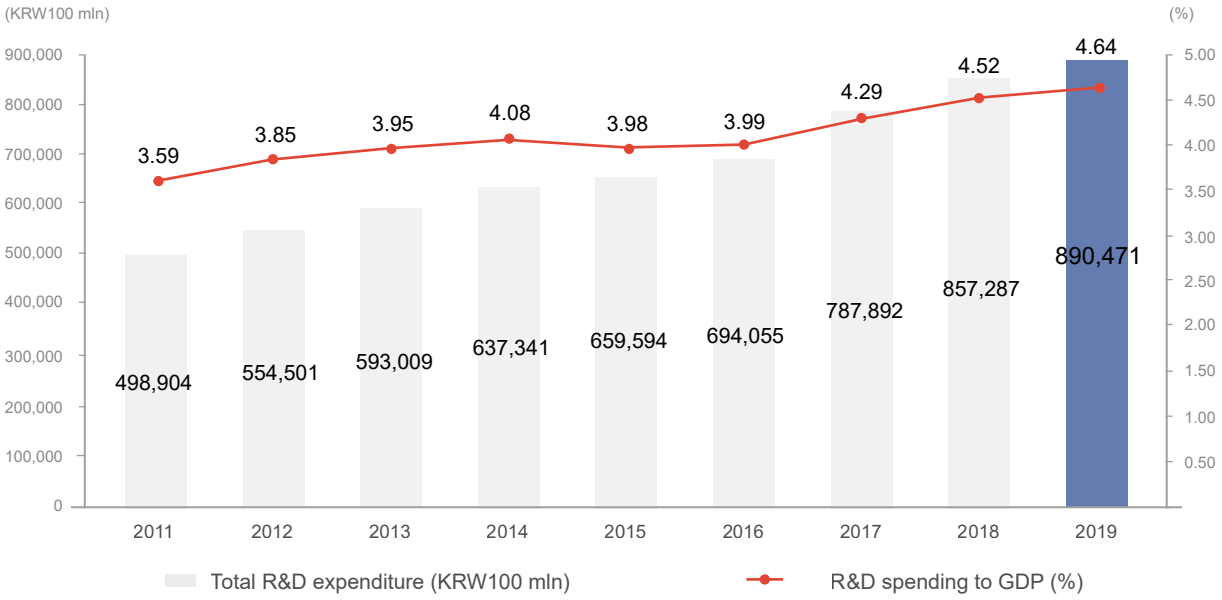
* S. Korea's R&D expenditure as a share of national GDP (ranking): 2nd in 2016 → 2nd in 2017 → 2nd in 2018 → 2nd in 2019

R&D expenditure to GDP ratio

1st	Israel	4.94%
2nd	**S. Korea**	**4.52%**
5th	Japan	3.28%
7th	Germany	3.13%
9th	U.S.	2.83%
14th	China	2.14%

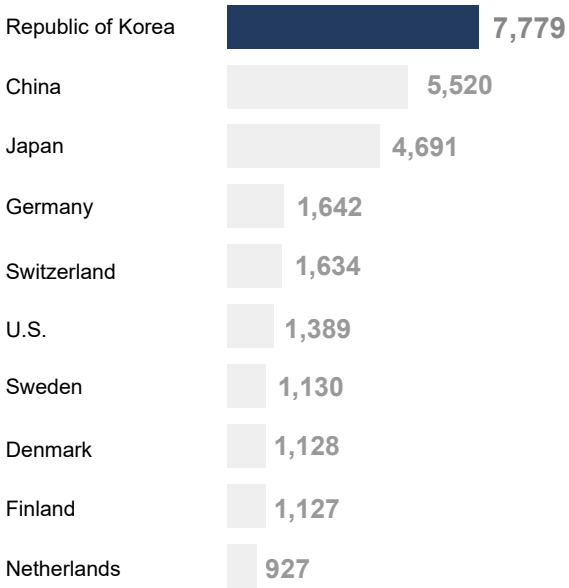
*Source: OECD (February 2020)

S. Korea's total R&D expenditure and R&D spending to GDP

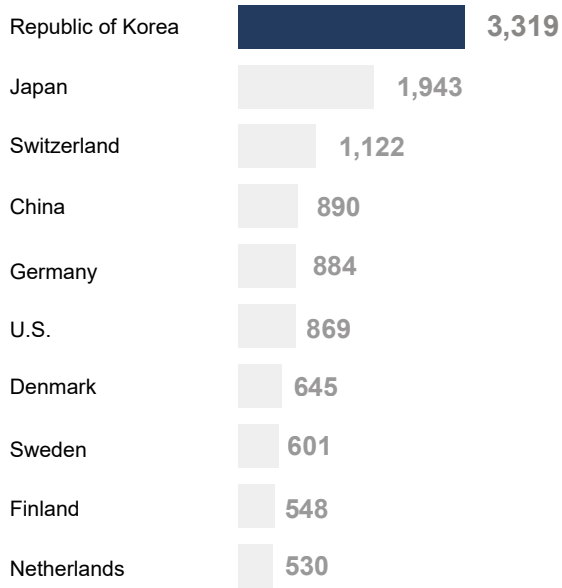


*Source: Press release (Dec 9, 2020), Ministry of Science and ICT

Resident patent applications per USD 100 billion GDP



Resident patent applications per million population



*Note: GDP data are in 2017 U.S. purchasing power parity (PPP) dollars.

*Source: "World Intellectual Property Indicators 2020", World Intellectual Property Organization

S. Korea, the world leader in patent applications per GDP · population

The World Intellectual Property Organization (WIPO)'s 2020 World Intellectual Property Indicator, an up-to-date annual overview of global patent activities, said that S. Korea is taking the lead in the rankings of patent filings per GDP as well as population.

S. Korea topped the global list of patent origins with 7,779 applications filed by Korean nationals per USD 100 billion GDP in 2019, ahead of China (5,520), Japan (4,691) and Germany (1,642) by a wide margin. Patent filings per million population in Korea was 3,319, proved to be overwhelmingly larger than 1,943 of Japan, the second leading nation in the 2019 index.

The aforementioned data can be an indicator which well demonstrates S. Korea's tireless commitment to R&D and its capability to lead the world in innovation.

Spurring on national level growth initiatives such as the Korean version of the New Deal or DNA+BIG3, S. Korea will keep up its efforts to make substantial progress on improving innovation prowess and productivity.

The March issue of Invest Korea will cover S. Korea's superb logistics infrastructure and transport networks which connect all major cities and countries across the world.

By Hyo Jung Jang
Assistant Manager
Investment Public Relations Team
Korea Trade-Investment Promotion Agency (KOTRA)

Cover Story

ChenFai Chung

Vice President & General Manager, North Asia
Emerson Automation Solutions

Spearheading Digital Transformation

Invest Korea talks to ChenFai Chung, Vice President & General Manager, North Asia at Emerson Automation Solutions, to gain insight into industrial automation in Korea and learn more about his experience doing business here.

Emerson (NYSE: EMR) is a global technology and engineering company providing innovative solutions for customers in industrial, commercial, and residential markets. Founded in St. Louis, Missouri, USA in 1890, Emerson has approximately 200 manufacturing facilities around the world. In 2020, the company's global sales amounted to USD 16.8 billion.

With a 130-year history of growth and expansion, Emerson has emerged as a resilient organization that has minimized risk through diversification while proactively responding to market changes. The company's Automation Solutions business helps process, hybrid and discrete manufacturers maximize production, protect personnel and the environment while optimizing their energy and operating costs. Its Commercial & Residential Solutions business helps ensure human comfort and health, protect food quality and safety, advance energy efficiency, and create sustainable infrastructure. Emerson has built a billion-dollar software business within those two platforms.

As a global innovator, Emerson has a deep legacy of solving the most complex challenges facing modern life. It combines advanced technologies, industry-leading expertise, and an insatiable curiosity about the world to create sustainable solutions for the essential customers it serves. The company recently announced its unified global purpose—to "drive innovation that makes the world healthier, safer, smarter, and more sustainable."

Originally an engineer with a Bachelor of Engineering Degree in Electrical & Electronic Engineering from Nottingham Trent University in the UK, ChenFai Chung is currently Vice President & General Manager of North Asia for Emerson Automation Solutions. Since 2015, he has been leading Emerson's businesses in the Korean and Japanese markets, supervising all operational affairs including sales, marketing, engineering, production, quality management, financial and human resources. Chung began his career with Emerson in 1992 as a Systems Engineer. Since then, he has held various positions of increasing responsibility and functions, including his appointment as Director of Sales and Project Pursuit, driving and growing Emerson's Rosemount Measurement business in Asia Pacific. He was subsequently promoted to Vice President of Emerson's Rosemount Analytical Business Unit managing and growing its market in Asia Pacific. His role was expanded when he was appointed as Vice President & General Manager of Analyzers & Solutions for the Analytical business globally.

Read on to gain insight into Korea's automation industry and learn more about Chung's experience doing business here.

First off, can you tell us a little bit about Emerson? Why did the company decide to establish the Korea office, and how does it view the Korean market?

Emerson established its presence in Korea in 1988, and today, Emerson Korea provides a comprehensive portfolio of technology and solutions for automation, sustainability, and digital transformation including services such as engineering, consulting, project management and maintenance. It helps Korean manufacturers achieve Top Quartile performance by reducing project costs and improving plant performance and availability.

Emerson has invested in Korea for over three decades as Korea has been one of our priority markets and a crucial part of our growth in Asia. As of 2020, we are backed by 650 employees here across our sales, engineering, manufacturing, and service facilities in Jukjeon, Anseong, Busan, Gunpo, Daesan, Yeosu and Ulsan, and we are serving over 2,000 customers and supporting a total of 4,000 projects.

Our new headquarters and Solutions Center in Jukjeon that opened in November 2018 plays a central role in the company's automation solutions business in Korea and demonstrates Emerson's commitment and continued investment in Korea. We have received numerous commendations from Korea's Prime Minister and the Ministry of Trade, Industry and Energy, for our commitment in and contribution to the local industry through foreign investment. We are constantly initiating and nurturing partnerships with our local, regional, and global customers in Korea to address their challenges and needs and to further our mutual growth.

"Sustainability & decarbonization" have become a key driver in manufacturing and its importance will grow as populations increase and resources dwindle. How is Emerson dedicating itself to creating a better world?

Emerson pursues environmental sustainability and decarbonization through three approaches that we call Greening of Emerson, Greening by Emerson, and Greening with Emerson. Under the "Greening of Emerson", we are committed to achieving a 20 percent greenhouse gas intensity reduction target by 2028 compared to 2018. We will achieve this by reducing energy use and optimizing performance, as well by procuring renewable energy and supporting onsite renewable generation projects.

"Greening by Emerson" is where we believe we can have the greatest impact as we enable our customers' decarbonization transitions through our range of environmental sustainability solutions and expertise. Because of the nature of our business and that of our served customer base, we are highly relevant—across our entire portfolio—to catalyze global environmental sustainability improvements.

Finally, "Greening with Emerson" drives invaluable collaborations and engagements with external stakeholders from universities and governments to industry forums and international associations. Transitioning to a low-carbon future requires unprecedented levels of innovation and investments, which is why stakeholder collaboration is so important. Key to these efforts is the establishment of partnerships within Korea and worldwide to collectively develop innovative solutions for both

Korean and global customers.

What kinds of activities is Emerson Korea carrying out that are in line with the Korean government's Green New Deal policy, which aims to create greener, more sustainable industries?

The world is moving toward a low-carbon future. Following the Paris Agreement (COP 21), Korea currently has committed to target a 24.4 percent reduction in greenhouse gases (GHG) emissions by 2030 compared to 2017 levels. The target isn't attainable unless industrial manufactures contribute heavily.

Emerson has already started discussing a path toward decarbonization with global energy leaders and policymakers. Our expertise can help in leveraging technologies to help industries transition to more eco-friendly approaches that meet decarbonization goals and energy efficiency maximization, the objectives of the Green New Deal initiative.

And, Emerson is in a unique position to help manufacturers improve both their energy and efficiency, that is, to become more resource-efficient, and thereby Top Quartile performers. We can provide energy-intensive producers with a systems-wide understanding of their resource use: a transparent, pragmatic, and flexible tool that identifies opportunities for efficiency improvements across entire sites during daily operations. For renewable power generation and clean fuel production, we provide solutions that enable to operate plants at peak performance.

How can automation technologies help enhance the sustainability of the Korean manufacturing industry?

Emerson has introduced Operational Certainty, which is a technology and engineering-based approach designed to help our customers identify what challenges are preventing Top Quartile performance in the areas of safety, reliability, production, and energy & emission. Top Quartile is defined as achieving operations in the top 25 percent of peer companies. We help our customers to define an automation strategy which will address those challenges—maximizing shareholder value by reducing operating expenditure and improving plant availability. Our Operational Certainty program helps industrial sites improve energy use by identifying waste and by optimizing unit and equipment performance with real-time monitoring solutions and expert consultation to lower both energy intensity and emissions footprint.

How do you think Korea has handled the COVID-19 pandemic?

Korea has been recognized for its successful management of the COVID-19 pandemic and navigating the new kinds of challenges that the society, economy and industries face. In the last few months, the country has made progress on multiple fronts: securing vaccines for 60% of the national population, proactively preparing a transition into a sustainable green economy under the Green New Deal, and more.

Similarly, Emerson continues to stay agile. From the start of the pandemic, Emerson has taken important steps to protect more than 80,000 employees across the globe. We are adhering to the guidelines of the global health experts and local authorities and have taken the most stringent steps to protect the employees who work at facilities that manufacture critical technologies and equipment.

Has the pandemic changed the way your company does business in Korea?

Definitely. Our efforts to contribute to disease control included the activation of a response team on the ground and the launch of strengthened preventive measures indoors. We installed automatic thermal scan cameras and face recognition thermometers at facilities, in addition to providing our employees with face masks and hand sanitizers and putting in place strict hygiene and social distancing measures. We implemented a work-from-home arrangement in early March 2020 as the situation evolved in Korea, where the Work Site Safety Checklist and Quarantine Tracker Report played a helpful role in ensuring efficiency and productivity, as well as minimal disruption to our service to customers.

At the same time, we are ramping up production and putting our ultrasonic equipment to work in creating surgical face masks, face shields, disposable hygiene gowns and filter media to get vital personal protective equipment to care providers faster. Our cold chain technology is monitoring temperature and humidity

of critical COVID-19 test kits from development to distribution at healthcare facilities and testing sites. We have shifted manufacturing capacity in a key facility to accelerate production of printed circuit boards for ultrasonic welding equipment critical to manufacturing N95 face masks that protect healthcare workers. Our advanced compressors and control technologies are providing temperature control at "pop-up" emergency medical facilities and testing sites, where it is critical to maintain precise temperature, humidity and filtration requirements to protect vital medications. Our leading valve technologies are being used in multiple ways, including in ventilators and oxygen therapy devices to help patients who are at high risk or who have been sent home to recover.

As a global company, what is Emerson Korea's vision for digital transformation solutions in the 5G era?

Korea is so technologically advanced and was the first country to introduce 5G mobile networks for telecommunications—which is why it's a key market for us in leading digital transformation across industries both in-market and beyond.

In 2019, we deepened our commitment to manufacturers' Top Quartile performance with the launch of a new digital transformation organization. The new business brings together critical resources to help manufacturers develop and implement pragmatic digital transformation strategies that deliver industry-leading performance, combining existing expertise in consulting, project execution, smart sensor technologies, data management and analytics to help customers not only establish a clear vision for digital transformation, but also execute with confidence and realize measurable results at each step of their journey.

Automation has become an important subject of discussion at a time when technological advancements are pioneering new horizons. Digital transformation has become a necessity, not just to stay in the game, but to also face the challenges caused by the global pandemic at a scale we have never seen before.

Now, companies are required to gain speed and accuracy of decision-making and actions based on having the right information in the hands of the right expert. The new Industrial Internet of Things (IIoT) is ushering in digital transformation that enables companies to utilize technology and expertise more than ever before, but only if the right scalable technology strategy is matched to business goals.

Emerson's innovative technology and service offerings enable our customers to reduce the time spent on managing remote facilities and the cost of building telecommunication infrastructures, which, in turn, radically enhance the impact of smart plants that harness the power of digital transformation.

What is Emerson Korea doing to build win-win partnerships in Korea?

We are very grateful to the Korea Foreign Company Association (FORCA) and the American Chamber of Commerce in Korea (AMCHAM) who helped us build a great relationship with KOTRA. With their support, we have been able to continuously collaborate with the Korean government in various fields. Before the pandemic, at KOTRA's request, we provided training at our Solution Center to introduce local government officials and university students to opportunities for digital transformation in the industries we serve.

Going forward, I can envision more opportunities for Emerson in which we can cooperate with the Korean government—specifically in the hydrogen area of the Green New Deal policy. This can be a government-led platform where private corporations—domestic and foreign—can play an essential role.

Emerson has the potential to play an active part in the Korean government's Green New Deal initiative with its internal "greening of" improvement measures and vast "greening by" technological capabilities, which are relevant across most areas of the energy system. Our expertise and experience make Emerson an optimal partner to serve the hydrogen value chain from production to distribution and use.

Emerson's products and services portfolio also supports the promotion of renewable energy and the creation of a fair power transmission mechanism that helps expand green mobility by backing up the green fuel ecosystem and contributes to the decarbonization of the industrial sector. At the core of such projects are Emerson's automation solutions.

By Grace Park

Executive Consultant

Investment Public Relations Team

Korea Trade-Investment Promotion Agency (KOTRA)

Strengthening Korea's Position as a Manufacturing Powerhouse through the Introduction of Smart Factories

Korea is undoubtedly a manufacturing and exporting powerhouse. According to the statistics published by Korea Employment Information Service, as of December 2020, approximately 349,000 active manufacturers are producing materials, parts, modules, finished products and equipment in Korea.

A "smart factory" refers to a business with an intelligent production system that actively utilizes artificial intelligence optimization solutions based on big data collected through sensors and IoT throughout the entire manufacturing process of product planning-design-production-distribution. The ultimate goal of a smart factory is to create value through production efficiency and market expansion in the manufacturing industry by comprehensively utilizing cutting-edge digital technology, which embodies the essence of the fourth industrial revolution being eagerly pursued both in the public and private sectors. Korea, which ranks first in digital infrastructure and fifth in manufacturing competitiveness, is clearly a country that offers the best environment for implementing such smart factories.

What is a smart factory?

The Smart Manufacturing Innovation Center of the Korean government defines a smart factory as "a high-tech, human-centered factory that integrates all production processes from product planning to sales with ICT technology to produce customized products with minimal cost and time."

In the traditional manufacturing process, it often occurs that the order of the process is tangled, essential raw materials or parts run out, or any broken equipment is not timely fixed, resulting in production delays, and, of course, a waste of time and money. All of these problems can be fixed through AI-based optimization. In a virtual space described as a "digital twin," you can simulate the production process of a new product and check where and how the problem occurs, considerably reduce defect rates through real-time exchange of information among equipment, materials, and systems, and have the system automatically place and receive orders upon the completion of a production process, which has the side benefit of reducing inventory costs.

The benefits of the introduction of smart factories go far further than merely saving costs and increasing production speed. The use of big data enables reliable measurement of whether and how much demand exists for a new product and small quantity batch production through detailed customization for customers.

Introduction of smart factories leads to value creation

The Korea Institute for Industrial Economics and Trade's 2019 survey[1] of Korea's small-and-medium-sized businesses on the economic effects of a smart factory shows that the productivity of businesses that had introduced a smart manufacturing system has significantly improved.

After the introduction of the smart manufacturing system, Korean small-and-medium-sized manufacturers have greatly benefited from manufacturing cost reduction, delivery time reduction, inventory reduction, defect rate reduction, as well as decision-making time reduction, which resulted in a considerable increase in capacity utilization, daily production volume, and production volume per person.

However, the survey results also showed that the smart manufacturing system has failed to produce such effects as technology development, increase in the number of product items, or increase in the number of suppliers. This indicates that while process innovation through optimization in the product production phase has been achieved relatively easily, the smart factory system has fallen short of expectations in terms of product innovation such as marketing, customer-tailored product development, and technology innovation.

Use of smart manufacturing solutions is still limited in Korea

According to another 2019 survey[2] conducted by the Korea Institute for Industrial Economics and Trade for the analysis of suppliers that provide smart manufacturing solutions in Korea, most of the suppliers of smart manufacturing solutions in Korea are MES and ERP suppliers, and the percentage of equipment manufacturers that produce only a single item of part or component is high.

At present, Korean manufacturers depend highly on U.S. products for software such as AR, VR, CPS, and manufacturing robots, and on products imported from Japan, Germany and China for parts such as autonomous transport robots and smart sensors.

Korean government's strategy for making manufacturing smart

The Korean government has the policy vision to maintain Korea's position as a manufacturing powerhouse through smart manufacturing innovation of SMBs as introduced in its "SMB Smart Manufacturing Innovation Strategy" in December of 2018.

In order to achieve the goal of the smartization of 30,000 SMBs by 2022, the Korean government has created a fund of KRW 2 trillion (for facility

[1] Source: Eun-Mi Jeong et. al. (2019), "A Study of Korean-style Smart Manufacturing Strategy", Chapter 3-2: An Analysis of the Current Status of Smart Manufacturing Systems of Korean SMBs, 123-156.
[2] Source: Eun-Mi Jeong et. al. (2019), "A Study of Korean-style Smart Manufacturing Strategy", Chapter 4-2: The Current Status of Korea's Smart Manufacturing Sectors, 176-210.

investment) and another fund of KRW 300 billion. More specifically, it plans to (i) form a smart industrial complex planning team for the creation of 10 smart industrial complexes by 2022 with a view to improving the quality of life of workers and securing new industrial engines, (ii) establish an industry-academia-research network for manufacturing innovation in existing industrial complexes, (iii) create a worker-friendly environment for each region, and (iv) introduce negative regulation zones and build new renewable energy infrastructure for the objective of the successful adoption and operation of smart industrial complexes.

In July 2020, the Korean government announced the SMB Manufacturing Innovation Advancement Strategy based on AI and Big Data, which includes the Knowledge and Awareness Mapping Platform (KAMP). The KAMP is squarely aimed at the field of product innovation where smart factories in Korea have produced less-than-expected results. The goal is to spread the leading examples of manufacturing innovation through the development and innovation of new products based on artificial intelligence by establishing the My Manufacturing Data System, and, accordingly, the demand for smart platforms such as facilities, software, parts, and finished products is expected to increase. Korean SMBs with plans to introduce smart factories can receive various support, including, but not limited to, subsidization of the costs for the new construction of smart factories, AI consulting, technology verification, skilled workers, as well as R&D subsidies, through policy programs such as "Smart Factory Construction and Advancement," "Data Infrastructure Construction Project," "Smart Meister," and "Process and Quality Technology Development."

SMB Smart Industrial Complex

Year	Plan for Smart Industrial Complex	National Budget
2019	• Launch of the smart industrial complex project team - (Changwon) High concentration of machinery and electronics industries, cooperation with universities and company-affiliated research institutes - (Banwol/Shihwa) Approximately 18,000 parts and components manufacturers are concentrated, cooperation with a smart city (Siheung)	KRW 185.8 billion (for 2019) + additional support
2020	• Selection of additional smart industrial complexes - (Gumi) Electronics and electric industry-centered, planned to be developed as a materials and parts cluster - (Namdong) 6,685 SMBs are based in Namdong. High penetration of smart factories, and transport, logistics, infrastructure linkages to a smart city (Songdo) • Invitation for more smart industrial complexes is in progress	KRW 791.2 billion (until 2023)
~2022	• Expansion up to 10 smart industrial complexes	
~2030	• Expansion up to 20 smart industrial complexes under the "Manufacturing Industry Renaissance Vision and Strategy"	

*Source: Ministry of Trade, Industry and Energy, "Introduction of the Policy on Smart Industrial Complexes"

Encouraged by the Korean government's active move to support the expansion of smart factories, German companies such as SAP, Siemens, Bosch, and Pesto, Rockwell Automation of the U.S., and Mitsubishi Electric of Japan are actively promoting digital factory solutions and expanding their business in Korea. Successful introduction of smart factories will not only increase profits through cost reduction, but will also make work environments safer and create quality jobs. Smart factory is different from mere automation, which just replaces repetitive labor without any improvement of productivity. It pursues new business opportunities, new demand, stronger product competitiveness and more efficient production, which is why it is a labor-friendly innovation strategy that will result in improving both the quantity and quality of jobs. We can expect that the key ministries and agencies of the Korean government will continue to make well-coordinated efforts for the success of the Smart Industrial Complex Project, which will also lay the foundation for the success of balanced regional development and smart cities.

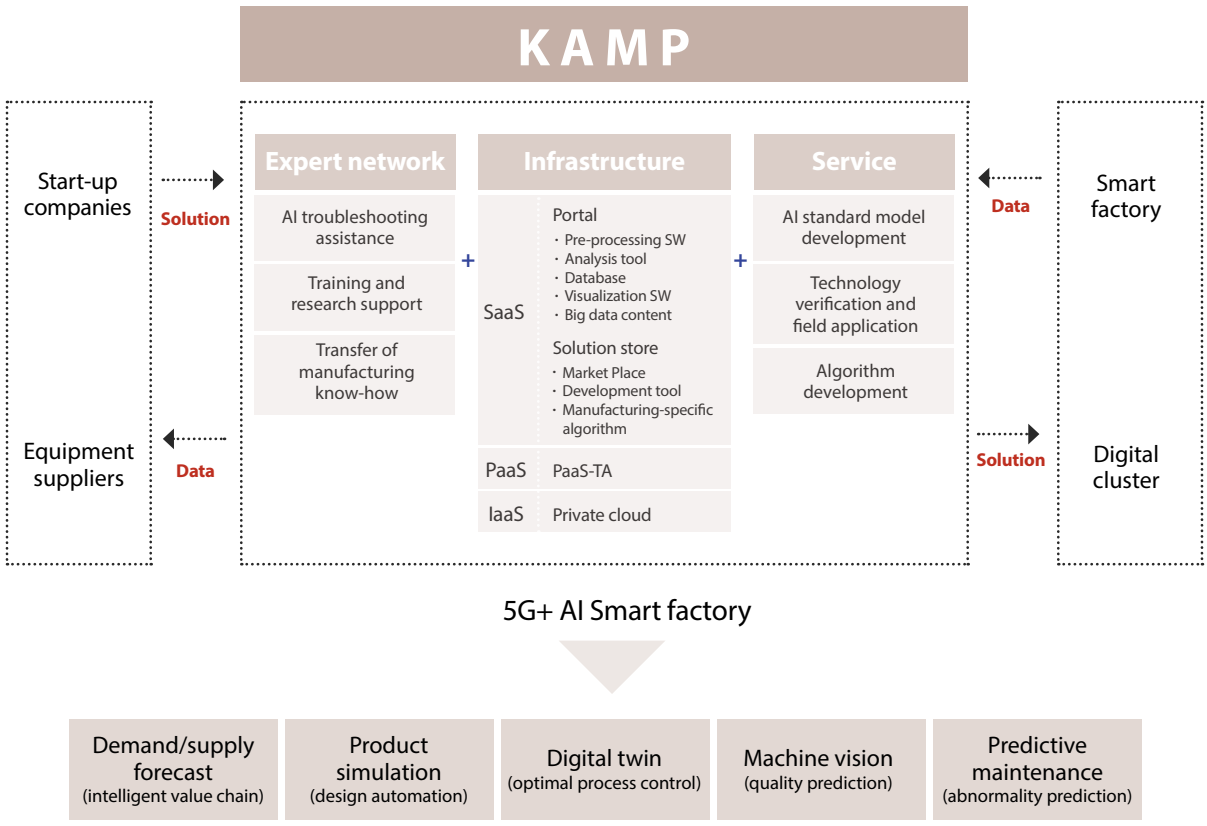
By Eunsun Gil

Associate Research Fellow

Korea Institute for Industrial Economics & Trade

egil@kiet.re.kr

SMB Manufacturing Innovation Advancement Strategy based on AI and Big Data



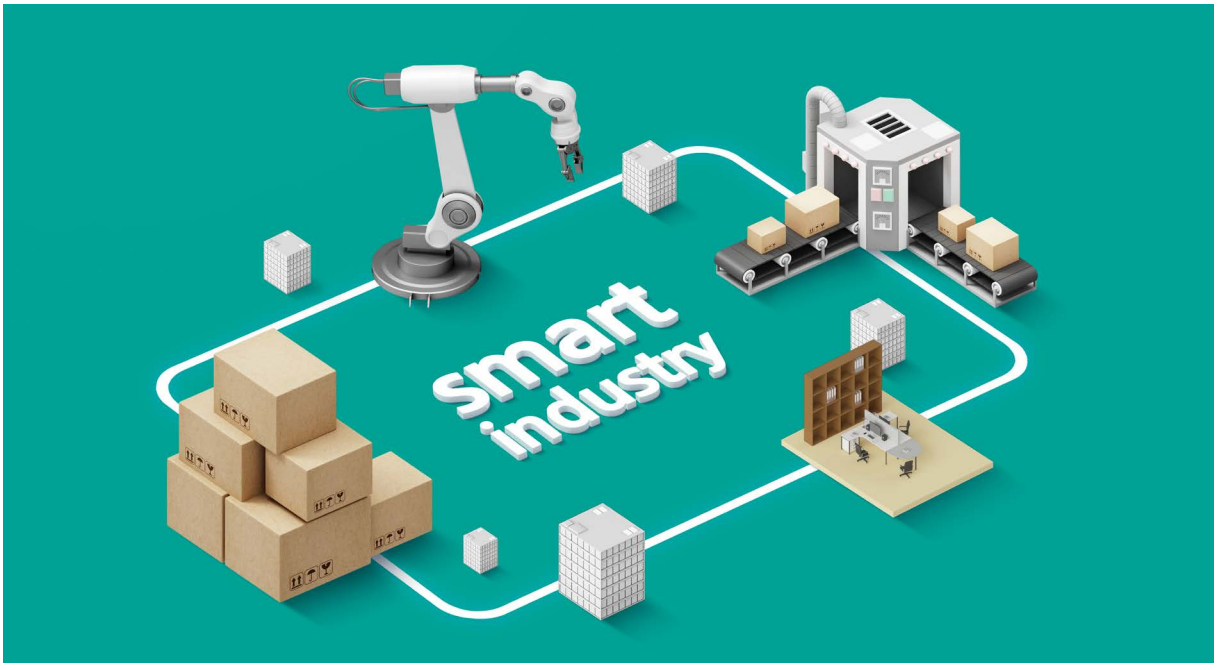
*Source: Korea Policy Briefing, Policy wiki, Smart Factory (Intelligent Factory)

Gyeongnam Changwon Smart Green Industrial Complex

Gyeongnam Changwon National Industrial Complex was selected as a smart green industrial complex to create a world-class high-tech machinery industrial complex under the heavy chemical industry promotion policy. Major industries represented at the complex are machinery (59.2%), electrical and electronics (19.5%), and transportation equipment (9.6%).

Location Overview

- **Location:** Agricultural Technology Center site in Changwon (71, Changi-daero, Uichang-gu, Changwon-si)
- **Total Area:** Around 25,302,000 m^2
- **Project Period:** '19.10 - current
- **Total production amount:** KRW 39,196 billion
- **Total amount of export:** USD 9,597 million
- **Number of tenant companies:** 2,754
- **Number of employees:** 124,950



Key Highlights

- **(Establishment of test line)** Establishment of 3 modular test lines (processing, assembly, and inspection) based on digital twin
- **(Professional manpower training)** Plan to nurture talent in smart manufacturing in cooperation with KPC and universities in Gyeongnam and develop different levels and stages of educational programs, etc.
- **(Development of evaluation system and validation)** Development of evaluation and test system to predict the durability of smart manufacturing core parts, modules, and equipment, and to verify the failure rate

Location Conditions

Transportation facilities

Road

Namhae Expressway Dongmasan (12 km)

Port

Establishment inside the Complex of Pier 4 and 5 of Masan Port

Railroad

KTX Changwon Jungang Station (5 km)
KTX Changwon Station (6 km)

Airport

Gimhae Airport (35 km)
Sacheon Airport (65 km)

Distribution and supply facilities

Water for Industrial Use

Water intake facility: 200,000 tons/day
Water purification facility: 180,000 tons/day

Power

Substation facilities: 7 places, 1,560 MVA
Transmission facilities: 22 lines

Plans for the supply and expansion of smart factory

Targets: Domestically registered manufacturing corporations
Recruitment period: January 22, 2021 - June 30, 2021
Department: Korea Smart Manufacturing Office
Details:

Project Title	Support	Application Type	Government Subsidy (KRW, per company, max)
Establishment and Advancement of Smart Factory	Provision of automation equipment, controllers, sensors, etc., necessary for producing a smart factory solution using advanced technologies such as IoT, 5G, big data, AR, VR, AI, and cloud for the improvement of product design and production process	Basic	0.7 billion
		Advancement 1	200 million
		Advancement 2	400 million

Major Development Plans

Expansion of Smart Convenience Facilities (integrated control)	Operate a system using IoT technology, intelligent CCTV, and data from related organizations to manage dangerous goods, environmental pollution, and traffic in the complex *Install IoT environment sensor system (actual measurement information) + construction of intelligent CCTV (video information) + connection of public data (weather, environment, terrain information, etc.) →Real-time monitoring and increased risk prediction accuracy of the industrial complex
Expansion of Smart Convenience Facilities (logistics platform)	Reduce logistics costs and utilization of idle warehouses in the industrial complex by applying ICT and AI technology to the obsolete joint logistics center *Provide devices such as sensors for joint logistics companies and logistics providers (transport, storage, etc.), data collection, and intelligent control of supply and demand in logistics
Process Innovation Simulation Center	Reinforce smart manufacturing innovation capabilities of SMEs through virtual design support for the entire process from product development to manufacturing to performance verification *Companies do not have to purchase costly software or leave the work to another company. The simulation provided by the center allows companies to reduce costs and time spent on product development.
Standard Manufacturing Innovation Process Module	Verify manufacturing technology and corporate support through the establishment of a modular production system for the application of smart manufacturing technologies such as digital twin
Professional Manpower Training in Smart Manufacturing	Develop undergraduate and graduate programs (employees, etc.) in smart manufacturing, design curriculum focused on problem-solving in the industry, spur industry-academia cooperation to nurture talent, and technical support
Establishment of Energy Self-Sufficient Infrastructure	Expand ESS and renewable energy power plants such as fuel cell plant and photovoltaic plant in the industrial complex, and demonstrate energy transaction networks based on electric vehicle power generation

Dividing Container Space without Consuming Natural Resources

To avoid using expendable packaging such as paper box or wooden crate, Syspac offers a sufficient alternative

Company introduction

SYSPAC SUPPLY CHAIN CO., LTD. was established in 2010 to manufacture, sell, and rent returnable packaging materials when the business model for returnable packaging materials were somewhat unfamiliar in Korea.

After two years of development, we developed T-BOX, an innovative packaging material, and have contributed to the development of packaging technology by working with customers in various fields such as the auto parts, secondary battery and aviation industries.

We will continue to develop innovative packaging methods and products, and do our best to provide greater value to our customers' products.

Development Background

Developed in the 20th century, containers have revolutionized logistics in terms of unit handling, consistent transportation, and unloading efficiency, which are all still in use around the world to this day.

As a result, the practice of loading bulky and unstructured cargoes into containers has been eliminated, and various packaging materials are now used to pack cargoes in a form that is easy to ship.

However, most of the packaging materials used today are corrugated paper or wood, and they are discarded after being used once, which is adversely affecting the environment.

Product introduction

T-BOX is an innovative packaging material that folds with low recovery costs, high rigidity and

self-waterproofing, which overwhelms the existing disposable and homogeneous packaging materials in terms of economy and functionality.

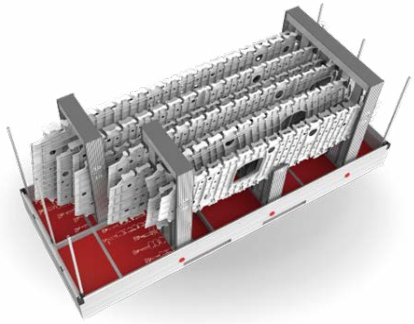
Competitiveness

T-BOX can be fully folded and recovered at 1/10 after use, making it the best product to reduce logistics costs. It can be used for more than 10 years due to its excellent stiffness and can be repaired and used semi-permanently. Due to multi-stage loading, logistics can be modularized and continuously reused instead of just once, which is excellent for reducing costs.

Strategy

The existing commercialization strategy is to sell and rent, selling additional products and carry out logistics processes.

In the future, we will secure verification and awareness as a packaging business for recovery through existing commercialization strategies and push for full-fledged entry into B2G and B2C markets.



We will also build market leadership and business expansion plans by discovering new business models.

By Ben Cho
CS Manager
SYSPAC
ben@syspac.co.kt

Invest Korea Market Place

Invest Korea Market Place (IKMP) is an online business matching platform available on Invest KOREA's website with information on approximately 300 Korean companies seeking to partner with foreign investors. This month, KOTRA Express introduces some outstanding companies in Korea's industrial automation industry.

COMPANY A

Real-time process monitoring

Investment Requirement		Company Profile	
Amount	USD 5 million	**Patents and Certificates**	Applied for 10 patents and registered 2 patents at home and abroad, including "System and management method for the remote control of production facilities".
Investment Structure	Equity Investment M&A	**Financial Performance**	(Sales) USD 01.12 million (in 2019, Audited)

Investment Highlights

The company has built up unique and unrivaled technological competence in the field of cutting machining based on the machine tool. The company has signed a technology agreement with Lightbend in the U.S.A., and is the only supplier of an AI platform to possess reactive technology. The company has a product capable of supporting international standards, which can secure MTB companies all over the world as customers. The company focuses on IoT and cloud technologies, and is expected to expand to the medical, aviation, and car industries in the future

COMPANY B

Smart factory, Smart home, Smart city, Connected car

Investment Requirement		Company Profile	
Amount	USD 1.5 million	**Patents and Certificates**	Registration (application) of 14 domestic patents
Investment Structure	Financial investment (minority)	**Financial Performance**	(Sales) USD 2.27 million (in 2019, Unaudited)

Investment Highlights

The company offers an Internet of things (IoT) security platform that can be applied to various IoT environments can provide total end-to-end IoT security services, such data protection and authentication solution. The company is unique in South Korea as it provides solutions that meet government guidelines yet goes beyond expectations.

*For more information please e-mail **ikmp@kotra.or.kr**, or visit the Invest Korea Market Place page on **www.investkorea.org.***

The Key to Rebound: Forward-Looking Deregulation

In the midst of accomplishing one of the best growth performances among OECD countries despite the COVID-19 pandemic, the employment statistics for January 2021 was 5.7 percent. The number of jobs declined almost 1 million in comparison to the same month last year, and the unemployed labor force reached 1.6 million.

This was not, however, entirely unexpected. The second and third waves of the pandemic this past winter devastated the hospitality industries as well as transportation industries all around the world, and Korea was no exception. On top of this, there was a base effect this month as the job numbers surged more than a half million in January 2020, making this year's figures especially poor.

Now, it is, as it always has been, an imperative challenge for the authority to reverse the employment numbers. For the moment, the government has been pouring accessible resources into various emergency measures such as unemployment benefits or subsidies. But appropriations ran so early that a series of supplementary budgets were inevitable. More seriously, such support measures are no more than short term temporary ad hoc devices, and not meant to create solid and permanent jobs.

Sound jobs are provided only by businesses, and these businesses require a fresh air of investments and deregulation. As this government has particularly emphasized economic justice and fair trade since its inception in 2017, most businesses have come to terms with the new regime of fair trade and economic justice.

Deregulation here does not mean returning to the old regime. It does not mean merely resetting the clock back to the times of the past. There is no way in going back to the minimum wage figures of the past, nor nullifying the 52-hour work week program. Those are now considered by many as the "dark ages," and there is no need to regress.

Here, deregulation means clearing the path forward for businesses in the future. All political leaders across the aisles agree on this point. Forward-looking changes are the core of deregulation. For example, there are new areas of businesses in new technology, green environment, health, and contact-free services.

Although the master plan of the Korean New Deal consists of a good cluster of programs, there should still be many other potential opportunities elsewhere. Despite the wishes of some political leaders, many old regulations on the table unintendedly hinder the sprouting of new firms and ventures, and these regulatory blocks are unseen even to the eyes of the officials who handle them. Therefore, deregulation is in the hands of open-minded bureaucrats, and they have the key to maintain the country on the course of growth.

By Professor Se Don Shin

Dean, Sookmyung Women's University

seshin@sm.ac.kr

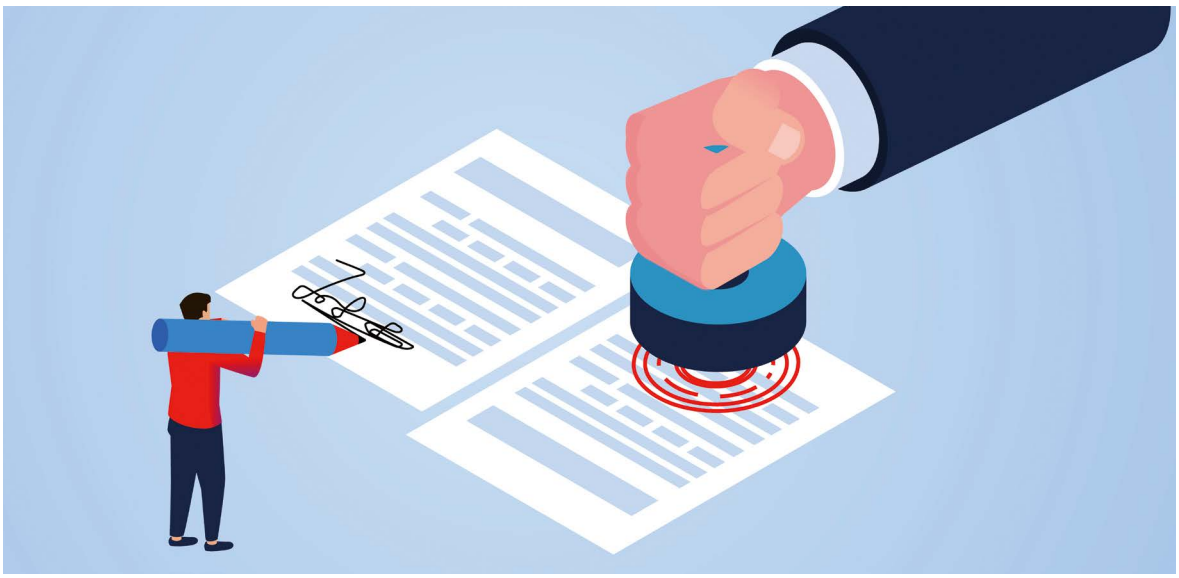
** The opinions expressed in this article are the author's own and do not reflect the views of KOTRA.*

Can a Korean national with permanent residency of a foreign country be considered a foreign investor?

Every month, Invest Korea provides answers to some frequently asked questions submitted by foreign-invested companies in Korea and potential investors.

Q. **Can a Korean national with permanent residency of a foreign country be considered a foreign investor under the Foreign Investment Promotion Act?**

A. When applying the Foreign Investment Promotion Act, the provisions of the Act concerning foreigners shall apply to individuals prescribed by Presidential Decree among Korean nationals permanently residing in a foreign country.



- "Individuals prescribed by Presidential Decree" among Korean nationals permanently residing in a foreign country means a person who falls under any of the following categories (Article 2(2) of the Foreign Investment Promotion Act and Article 3 of the Enforcement Decree of the Act):

  - A person who has acquired permanent residency in the country where he/she resides in
  - A person who has acquired a resident permit for four years or longer in a country without a permanent residency system
  - A person who has resided for four years or longer and acquired a resident permit for one or more year(s) in a country without a permanent residency system which only grants a resident permit for less than four years.

* An overseas Korean with permanent residency in a foreign country who intends to invest in Korea as a foreigner should be aware that investment funds should be brought in from a foreign country in foreign currency and that the domestic assets (cash, real estate, etc.) held by such individual are not recognized as an object of investment under the Foreign Investment Promotion Act and subsequently denied recognition as foreign investment.

Korea 101: Public Holidays and Weather

Living in Korea, published by the Investment Consulting Center, provides necessary information and helpful tips for day-to-day life in Korea. Here's what's featured this month.

Public Holidays

Korea has 15 public holidays a year as follows :

Name	Date	Remarks
Sinjeong (New Year's Day)	Jan. 1	
Seolnal (Lunar New Year)	Jan. 1 (Lunar calendar)	On the first day of the Korean lunar calendar, Koreans exchange greetings and words of encouragement for the new year.
March First Independence Movement Day	Mar. 1	This day commemorates the March 1st Independence Movement in 1919.
Buddha's Birthday	Apr. 8 (Lunar calendar)	This day is called 'Seokga Tansinil' in Korean, meaning 'Buddha's Birthday'.
Children's Day	May. 5	
Memorial Day	Jun. 6	
National Liberation Day	Aug. 15	This day celebrates both the national liberation and the establishment of the Republic of Korea.
Chuseok (Korean Thanksgiving Day)	Aug. 15 (Lunar calendar)	This major holiday is also called hangawi ('the great middle of autumn').
National Foundation Day	Oct. 3	This day celebrates the foundation of the first Korean kingdom of Gojoseon.
Hangeul Day	Oct. 9	This day commemorates the invention of Hangeul, the unique alphabet of the Korean language.
Christmas	Dec. 25	

* The substitute holiday system applies to Lunar New Year's Day, Children's Day and Chuseok.

Weather

Korea has a temperate climate with four distinct seasons. The global warming is prolonging summer compared to the other three seasons. In January, the coldest month, mercury dips to 17 degrees below zero Celsius. The hottest month is August when the temperature goes up to 39 degrees Celsius (as of 2018). Humidity rises up to 85 percent in summer, increasing the heat index notably. Summer usually begins with a rainy season (called jangma in Korea), and 50-60 percent of the annual precipitation falls in summer.

Recently fine/ultrafine dust has become an issue in Korea, with its concentration being higher from fall to spring than in summer.




Tip

How to deal with fine dust in Korea

Wear a mask when the level of fine dust is severe. Choose a fine dust mask with a KF (Korea Filter) mark that indicates the mask ability to block harmful substances such as yellow dust and fine dust.

For example, KF80 means that the mask can filter out at least 80 percent of fine particles. The higher the figure is, the better your mask performs. Yet breathing may become a bit more uncomfortable. So strike a balance between the level of fine dust and the amount of breath you need.

If you have further questions please contact +82-1600-7119

or visit ***www.investkorea.org***

Relishing Retro in Gunsan

Time Travel & Railroad Towns

The historical downtown of Gunsan, Jeollabuk-do Province, is packed with cultural remnants from the past, especially during the country's modern period of 1900-45. The city has set up a "time travel town" with renovated modern architecture and contemporary cultural properties to create a historical and cultural exhibition. With its retro appeal, this downtown is sure to enchant any visitor.

Exemplary Urban Regeneration

Under Japanese colonial rule, Gunsan was a passageway through which rice was transferred to Japan. The Japanese looted rice from granaries in Honam, a region comprising Gwangju and the two Jeolla-do provinces today, across the city's inner harbors. The waterfront's hefty storage space attested to the volume of pillaged nutrients. The Japanese dubbed such neighborhoods Jangmi-dong; unlike the transliterated jangmi ("rose" in Korean), these syllables drawn from Chinese characters conjointly denoted "storeroom." Seemingly identical yet polar in meaning to nature's beauty, the origins of Jangmi-dong evoke a tragic bitterness.

As Gunsan's inner harbors became active sites of rice plundering, Japanese financial institutions and public offices were set up and thus formed Jangmi-dong. This accounts for the remnants of modern

Japanese architecture along the streets of the adjacent neighborhoods of Jangmi-dong, Younghwa-dong and Wolmyeong-dong.

The Gunsan city government seeks to restore modern architectural structures to remind people to learn from the past. Modern History Culture Street has refashioned itself as a retro-themed and pedestrian-friendly town. The street's popularity shot up after its selection from 2015-18 as one of "100 Destinations for Korean Visitors of 2019-20" by the Ministry of Culture, Sports and Tourism and the Korea Tourism Organization. Despite chilly weather, the street teems with tourists in winter.

Time Travel to 1930s

The culture street is just a ten-minute drive from Gunsan Bus Terminal. The tourist attractions are conveniently clustered for easy browsing. I first dropped by the Gunsan Modern History Museum, which features the city's historical role as a hub of logistics distribution as well as a venue for Japanese rice plunderers and Gunsan-based independent fighters. The third floor showcases daily scenery from the period arranged in a graphic reenactment of 1930s Gunsan. The experiences of the times in the city range from the famed "buoyant" wharf, log house and Impi Station to Yeongmyeong School and Yamaguchi alcohol wholesalers.

The headquarters of the former Gunsan customs building, situated to the left of the museum, was built in 1908. Along with the buildings of Korea Bank and Seoul History Headquarters, the customs building is considered one of the nation's three featuring Western Classicist architecture that are still standing. A gray slate roof sits atop the red bricks, giving off a luxuriously vintage aura, and its use as a customs office through 1993 allowed its preservation. The Honam Custom Exhibition Hall displays the history of Gunsan customs.

To the right of the museum is the Gunsan Modern Art Museum, a structure renovated from the Gunsan branch of Japanese No. 18 Bank. The Japanese colonial government used the bank to grant high interest loans to strip Koreans of their land. Among city artworks on display are Ahn Jung Geun Memorial Hall and empty vaults used back then; the empty vaults meant the Korean people starved. This might partly account for Gunsan's prompt participation in the March 1 Independence Movement in 1919, the first

The Gunsan Modern History Museum features re-creations of the city's streets in the 1930s.

Located to the right of Modern History Culture Street, the Gunsan Modern Art Museum was once the building that housed the Gunsan branch of Japanese No. 18 Bank. / This is a replica of the Chinese Port Arthur Prison, where Korean patriot and martyr Ahn Jung-geun was incarcerated.

city in Honam to do so.

The Modern Architecture Museum was formerly the Gunsan branch of Chosun Bank owned by the Joseon Government-General. Built in 1922, it exemplifies the penchant of modern Japanese architecture to install steep roofs on tall buildings. The bank took the lead in giving Japanese merchants preferential rights and taking control of Gunsan's commerce. Modeled for display in the multi-story hall are the city's modern architectural prototypes and vaults inside the iron gate.

Behind this museum is the buoyant wharf and inner harbor that the Japanese built at the Geumgang River's estuary bank. The wharf was designed to load boats with rice even at low tide. At the inner harbor's third groundbreaking ceremony, loads of rice were stocked upward. Packets of rice, too many to fit in the storage, overflew into the pier. Imagery from such snapshots drives home the truism that "lost history yields no future."

Cinematic Sights

After browsing the inner harbor, I moved on to the retro charms of the city's streets. Besides modern architectural buildings, I saw the Japanese-style house of Sinheung-dong built during Japan's colonial rule. This traditional wooden mansion, decked out with a garden beautifully decorated with stonework, shot to fame as a filming site for the 2006 blockbuster film "Tazza: The High Rollers."

The crucially acclaimed melodrama "Christmas in August" (1998) was also filmed near the mansion, where the protagonist ran the studio Chowon Photography. Built as a film set, the studio remains intact due to the national popularity of retro.

Across Chowon stands Han-Il-Og, which is famous for its stellar beef radish soup. Over the last 40 years, the building, originally a surgical hospital built in the style of a Japanese house in 1937, has customers eagerly waiting at the doorway from early morning.

A ten-minute walk from Han-Il-Og leads to Dongguk Temple, the last Japanese temple standing in Korea, featuring multiple windows in the main inner temple and a steep roof angled at around 75 degrees. Using Japanese architectural materials, the temple has the customary style of the Edo period. The Gunsan Modern History Museum exhibiting the region's pillage under Japanese colonial rule opened last year in front of the temple.

Korea's oldest bakery Leeseongdang Bakery has a wide selection of rice-based pastries made from

Chowon Photography is the studio where the highly acclaimed film "Christmas in August" was filmed.

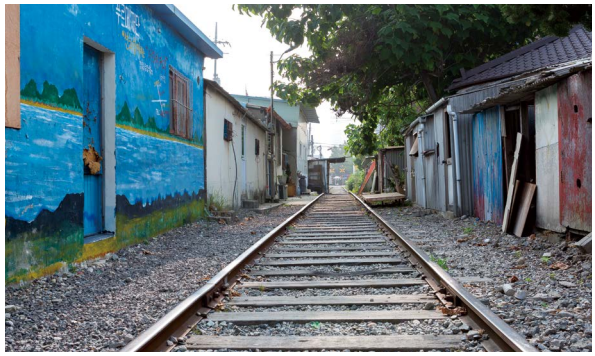
Gunsan's premium rice. Bread made with sweet red bean paste or veggie bread is Leeseongdang's specialty. Customers every weekend endure lengthy lines just to get a taste.

Gyeongamdong Railroad Town

About a ten-minute drive from Dongguk Temple is Gyeongamdong Railroad Town. Lacing both sides of the railroad are shacks, tin houses and prefabricated houses facing each other, with less than a meter separating the railroad and the homes. Fortunately, the tracks are safe to walk on as trains no longer pass through.

In 1994, a paper manufacturer built a 1.1-km railroad to transport raw materials and goods to and from Gunsan Station. The village through which the railroad cut was named Gyeongamdong Railroad Town. Through 2008, two freight trains passed by before noon at a speed of 10 km per hour. The railroad had 11 crossroads. When a station employee shouted or a whistle went off to alert villagers to move away from the freight train, residents would move household goods and sundries like chili, radish greens, flower pots and laundry left out to dry. The ensuing rush of photo aficionados capturing such lively scenery made the town famous.

The discontinuation of the train service, however, caused most residents to leave the town. Fear not, however, as retro-themed storefronts ranging from junk sellers to rentals of old school uniforms and coffee shops moved in. They attract up to 20,000 tourists on weekends. From afar, visitors flock to railroads from bygone days. Even for those not native to or unfamiliar with the region, Gyeongamdong Railroad Town is an enjoyable trip down memory lane.



Gyeongamdong Railroad Town is an enjoyable trip down memory lane, attracting up to 20,000 tourists on weekends.

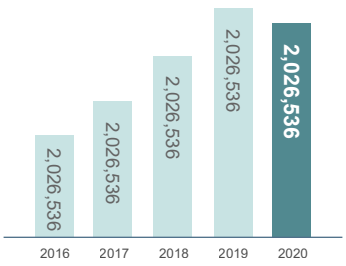
Source: "Relishing Retro in Gunsan" Written and photographed by Kim Hye Young, KOREA (February 2020), Korean Culture and Information Service (KOCIS)

Economic Indicators

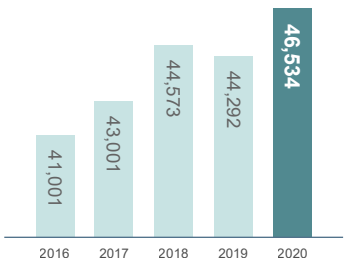
Here are some of Korea's major economic indicators that provide an overview of the country's recent economic developments.

Source:
International Monetary Fund (IMF), Bank of Korea (BOK), Korea International Trade Association (KITA), Ministry of Trade, Industry and Energy (MOTIE)

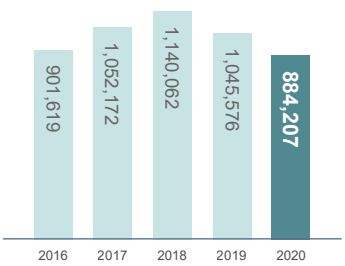
GDP
(Unit: USD million)



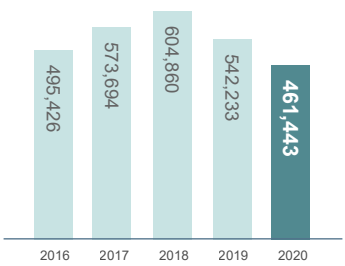
Per capita GDP
(Unit: USD)



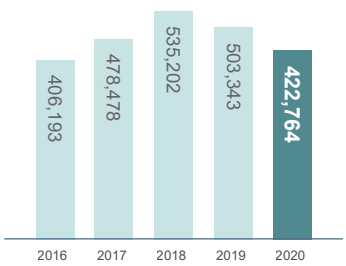
Trade volume
(Unit: USD million)



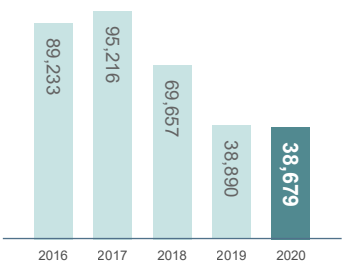
Exports
(Unit: USD million)



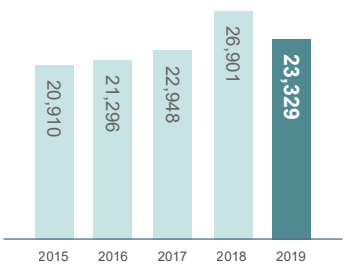
Imports
(Unit: USD million)



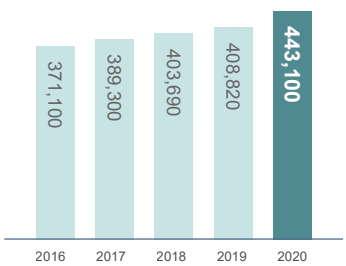
Trade balance
(Unit: USD million)



FDI
(Unit: USD million)



Foreign exchange reserves
(Unit: USD million)



Invest KOREA's Services

Foreign Investment Ombudsman

The Office of Foreign Investment Ombudsman is an organization established in 1999 to provide close aftercare support and grievance resolution services for foreign-invested companies, and is dedicated to resolving any difficulties that foreign-invested companies face while doing business in Korea.

One-Stop Service for Foreign Investors

The Inbound Investment Consulting Department not only assists foreign investors and foreign-invested companies in the investment review and implementation stage, but also offers customized services to help foreign investors and their families get comfortably settled in Korea.

Invest Korea Market Place (IKMP)

IKMP is a project aimed at discovering promising Korean SMEs seeking to attract foreign investment and matching them with foreign investors who have compatible needs. Projects looking for investment are posted on our website at *www.investkorea.org*.

Job Fair for Foreign-Invested Companies

IK organizes regular job fairs to help foreign-invested companies discover qualified local talent, and job seekers find employment through job consultations, on-site interviews, and more.

Invest Korea Plaza (IKP)

Invest Korea Plaza (IKP) is Korea's first facility dedicate to the incubation and investment of foreign investor. Each year, more than 40 foreign-invested companies rent out offices in the plaza and utilize IK's one-stop service.

IKP also provides serviced offices, business lounges, video conference rooms and a shower and sleeping lounge to maximize convenience for foreign investors.

IKP Offices for Lease

Foreign-invested companies

Companies planning to notify investment: Those who expect to report foreign direct investment of which the arrived amount is over USD 100,000 within 1 year of move-in.

IKP Occupancy Procedure

Counseling in occupancy → Application for occupancy → Screening committee evaluates application → Result notification(result confirmed in 1-2 weeks) → Conclusion of lease contract → Move into IKP

KOTRA's Overseas Network

KOTRA has 127 overseas offices and 10 headquarters worldwide

Southwest Asia
Tel: (91-124)4628-500
E-mail: ktcdelhi@ktcdelhi.net

Ahmedabad, Bengaluru, Chennai, Colombo, Dhaka, Karachi, Kolkata, Mumbai, New Delhi

Southeast Asia & Oceania
Tel: (84-24)3946-0511
E-mail: kotrahanoikbc@gmail.com

Auckland, Bangkok, Danang, Hanoi, Ho Chi Minh City, Jakarta, Kuala Lumpur, Manila, Melbourne, Phnom Penh, Singapore, Surabaya, Sydney, Vientiane, Yangon

Japan
Tel: (81-3)3214-6951
E-mail: kotratky@kotra.or.jp

Fukuoka, Nagoya, Osaka, Tokyo

China
Tel: (86-10)6410-6162
E-mail: pekktc@kotra.or.kr

Beijing, Changsha, Chengdu, Chongqing, Dalian, Guangzhou, Hangzhou, Hong Kong, Nanjing, Qingdao, Shanghai, Shenyang, Shenzhen, Taipei, Tianjin, Wuhan, Xiamen, Xian, Zhengzhou

CIS
Tel: (7-495)258-1627
E-mail: info@kotra.ru

Almaty, Baku, Kiev, Minsk Moscow, Novosibirsk, Saint Petersburg, Tashkent, Ulaanbaatar, Vladivostok

Europe
Tel: (49-69)2429-920/9
E-mail: frankfurt@kotra.or.kr

Amsterdam, Athens, Beograd, Bratislava, Brussels, Bucharest, Budapest, Copenhagen, Frankfurt, Hamburg, Helsinki, London, Madrid, Milan, Munich, Paris, Prague, Sofia, Stockholm, Vienna, Warsaw, Zagreb, Zurich

Middle East
Tel: (971-4)450-4360
E-mail: ktcdxb@emirates.net.ae

Alger, Amman, Baghdad, Cairo, Casablanca, Damascus, Doha, Dubai, Istanbul, Kuwait, Muscat, Riyadh, Tehran, Tel Aviv, Tripoli

South America
Tel: (52-55)5514-3173
E-mail: mexico@kotra.or.kr

Asuncion, Bogota, Buenos Aires, Caracas, Guatemala, La Habana, Lima, Mexico, Panama, Quito, Santiago, Santo Domingo, Sao Paulo

North America
Tel: (1-212)826-0900
E-mail: kotrany@hotmail.com

Atlanta, Chicago, D.C., Dallas, Detroit, Los Angeles, New York, Silicon Valley, Toronto, Vancouver, Washington

Africa
Tel: (27-11)784-2940
E-mail: kotra@kotra.org.za

Abidjan, Accra, Addis Ababa, Dar es Salaam, Johannesburg, Khartoum, Lagos, Maputo, Nairobi

KOTRA's Investment Support Offices

ASIA & OCEANIA
Melbourne, Australia
Tel: (61-3) 9860-0500

Sydney, Australia
Tel: (61-2) 9264-5199

Beijing, China
Tel: (86-10) 6410-6162

Guangzhou, China
Tel: (86-20) 2208-1600

Hong Kong, China
Tel: (852) 2545-9500

Qingdao, China
Tel: (86-532) 8388-7931

Shanghai, China
Tel: (86-21) 5108-8771/2

Fukuoka, Japan
Tel: (81-92) 473-2005

Nagoya, Japan
Tel: (81-52) 561-3936

Osaka, Japan
Tel: (81-6) 6262-3831

Tokyo, Japan
Tel: (81-3) 3214-6951

Singapore
Tel: (65) 6426-7200

Taipei, Taiwan
Tel: (886-2) 2725-2324

EUROPE
Vienna, Austria
Tel: (43-1) 586-3876

Brussels, Belgium
Tel: (32-2) 203-2142

Copenhagen, Denmark
Tel: (45) 3312-6658

Paris, France
Tel: (33-1) 5535-8888

Frankfurt, Germany
Tel: (49-69) 2429-920/9

Hamburg, Germany
Tel: (49-40) 3405-740

Munich, Germany
Tel: (49-89) 2424-2630

Milan, Italy
Tel: (39-02) 79-5813

Amsterdam, Netherlands
Tel: (31-20) 673-0555

Madrid, Spain
Tel: (34-91) 556-6241

Stockholm, Sweden
Tel: (46-8) 308-090

Zurich, Switzerland
Tel: (41-44) 503-5300

London, UK
Tel: (44-20) 7520-5300

MIDDLE EAST
Dubai, United Arab Emirates
Tel: (971-4) 450-4360

NORTH AMERICA
Toronto, Canada
Tel: (1-416) 368-3399

Vancouver, Canada
Tel: (1-604) 683-1820

Chicago, USA
Tel: (1-312) 644-4323

Dallas, USA
Tel: (1-972) 243-9300

Detroit, USA
Tel: (1-248) 619-1601

Los Angeles, USA
Tel: (1-323) 954-9500

New York, USA
Tel: (1-212) 826-0900

Silicon Valley, USA
Tel: (1-408) 432-5000

Washington D.C., USA
Tel: (1-202) 857-7919

To subscribe to KOTRA Express, e-mail ikonline@kotra.or.kr

Head Office. 13, Heolleungno, Seocho-gu, Seoul, Republic of Korea
Tel. (82-2) 3460-7838 | **Fax.** (82-2) 3460-7920 | **E-mail.** ikonline@kotra.or.kr
Publisher. Kwon Pyung-oh | **Director General.** Shin Seung-hoon
Director. Chae Kyoung Ho | **Editor-in-chief.** Grace Park
Designer. Jang YooJin | Printed by Samsin Munhwa Printing Co., Ltd.

Clean KOTRA, Green KOTRA

KOTRA Express_Published since 2011 by the Korea Trade-Investment Promotion Agency (KOTRA) Registration Number: 서초 라1492 February 2011