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Ministry of SMEs and Startups

Press Release

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K-quarantine Realized Thanks to "Win-win Smart Factories" Made Harmoniously by the Government and Large, Medium, and Small Enterprises of Korea

❶ **Thanks to win-win smart factories** made with the **resources and** innovation **know-how handed down by large enterprises to medium and small enterprises (SMEs)** in Korea, the country is **improving the productivity of quarantine products, solving all given problems, and supplying masks, diagnoses kits, vaccine syringes without gaps for K-quarantine stage by stage from 1) quarantine and prevention -> 2) diagnoses and testing -> 3) vaccines and treatment.**

❷ The **exports of K-quarantine products increased seven times** last year and **diagnoses kits surged 30 times**, signaling a **new export drive** of Korean SMEs.

❸ We plan to contribute to the fight against the pandemic by using the firm **manufacturing base of Korean SMEs** and the **Korean type win-win cooperation model** to supply **products** that are necessary **to overcome COVID-19** to the **Korean and global markets.**

Soon after the onset of COVID-19, **countries worldwide began to** suffer **from a serious lack of supply of quarantine products**, but the **Republic of Korea sufficiently secured masks, diagnoses kits, vaccine syringes, and other quarantine products in time,** becoming the envy of the world.

The Korean Ministry of SMEs and Startups (Minister Kwon Chil-seung, MSS) introduced the **success model of K-quarantine,** wherein the public and private sectors cooperate to speedily support the establishment of **win-win smart factories that benefit both large enterprises and SMEs.** This is helping the **switch of SMEs into mass production systems** in line with the jump in demand for quarantine products due to the spread of COVID-19.

Win-win smart factories is a policy of the **Korean government that supports part of the cost of building such factories when they are constructed** with the **cooperation of large enterprises and SMEs**.

The **key** to the policy is having **large enterprises dispatch professional personnel to work at SMEs to improve their processing, as well as to hand down technology, resources, and** innovation **know-how to SMEs in order to improve their productivity and** help **solve problems, thus enhancing their competitiveness**.

* (Building cost) Government 30%, large enterprises 30% and more, SMEs within 40%

Large enterprises, SMEs, and the government of Korea worked in perfect order when COVID-19 broke out last year and **operated a win-win public-private sectors cooperative system.** The **win-win smart factories** thus established led to the **stage-by-stage solving of given tasks for K-quarantine** from ❶**quarantine and prevention** →❷**diagnoses and testing** →❸**vaccines and treatment**.

The government and Samsung Electronics **delivered smart factories and manufacturing know-how** to mask producers, thereby **increasing** the daily **mask productivity by 51%**.

* (For example) Samsung Electronics supported the switch of mask manufacturers into smart factories -> daily mask productivity largely grew (the daily productivity of the 4 supported companies jumped 51% from the existing 920,000 to 1.39 million)

To prevent the lack of diagnoses kits, **Samsung Electronics speedily dispatched about 20 smart factory expert mentors to SME factories** to optimize the management of materials and logistics movement routes, improve the packaging process, and introduce automated facilities. The mentors thus discovered 73 tasks to solve and supported SMEs to improve their processing. Accordingly, the work efficiency improved and the manufacturing efficiency of diagnoses kits maximized, the result of which **increased productivity by 73% and revenue by 568%.**

We recently heard the lamentable news out of Japan that **the number of people it can inoculate with vaccines has dropped by 20% because it did not secure low dead space (LDS) syringes** for the Pfizer vaccine inoculation.

However, in the case of the Republic of Korea, an SME (PoongLim Pharmatech) has developed world-class LDS vaccine syringes enabling **six inoculations instead of five with one vaccine bottle**, thereby **increasing possible vaccine inoculation by 20%.**

Nonetheless, despite having succeeded at developing the technology, it was faced with the difficulty of not being able to readily mass produce because **it takes at least a year from the production of prototypes to actual production,** there is need for massive **facilities funds,** and it is a great **burden to develop sales routes.**

However, Samsung and the Korean government **supported** PoongLim Pharmatech in establishing win-win **smart factories, speedily processed its**

permits, and **helped it open sales routes.** As such, it established in the shortest period of time, a **smart factory system capable of mass producing at top quality**. It thus **improved its mass production system capability from producing 4 million a month to over 10 million, all within a month.**

The company plans to additionally build (March 2021) a smart factory production system that is capable of producing over 10 million LDS vaccine syringes a month in its third (new) factory that is currently under construction in order to be equipped with the **world's largest LDS vaccine syringe supplying system**.

* From the company's initial plan of 4 million a month → (currently) 10 million a month → (March) to complete constructing a new factory capable of producing 10 million a month

Based on such achievements, Korean **SME exports** put up good numbers **in 2020**, reaching **USD 100.8 billion**, similar to the year before (USD 100.9 billion in 2019), despite the severe situation brought on by COVID-19. Also, SMEs exported **diagnoses kits to 179 countries** worldwide and their **exports scale jumped about 30 times** year-on-year.

Along with this, exports of **K-quarantine products,** including **masks, hand sanitizers, and cleanroom garments, grew about sevenfold year-on-year**, thereby leading SME exports and enhancing the status of the Republic of Korea. These industries are expected to be the **growth foothold of Korean exports** even **after COVID-19**.

The above-mentioned success is all the more meaningful in that the **participating entities** – the large enterprises, innovative SMEs, and relevant agencies – **smoothly communicated their opinions**, **speedily made decisions**, and **worked in unison with the government of Korea to**

provide a role model of win-win cooperation.

* Smart factory support for companies (20) producing quarantine goods: 10 masks, 5 diagnoses kits, 3 hand sanitizers, and 2 protective goggles.

Korean **SMEs** plan to contribute to the **global quarantine** by **supplying products** necessary to **overcome COVID-19** to the **Korean and global markets** based on their firm **manufacturing base.**

"The successful production of quarantine goods, from masks to diagnoses kits to vaccine syringes, is an achievement made by the Korean-style New Deal and is the outcome of K-quarantine that has been realized thanks to the following three factors having worked harmoniously together: the will and hard word of SMEs, the technology of large enterprises, and government support," a ministry official said.

"**The Korean government and agencies supporting exports, among others, will cooperate to speedily support the acquisition of relevant permits, help draw up marketing strategies for each country, and provide finance for commerce and facility investment, without fail,**" he continued.

Reference Overview of “Project to support win-win smart factories of large enterprises and SMEs”

1. Project Overview

◦ Project wherein the **Korean government provides support** when **large enterprises and SMEs cooperate** to build **smart factories** for **their voluntary spread by the private sector**

* Current state of budget for win-win smart factories: 2018 (KRW 11.4 billion) → 2019 (KRW 18.5 billion) → 2020 (KRW 22.3 billion) → 2021 (KRW 25 billion)

- Large enterprises and SMEs pay for 70% of the total cost, while the government supports 30%.

* Cost sharing: government (30%) / large enterprises (30%) / SMEs (40%)

2. Achievements made by win-win smart factories support

◦ The government supported **a total of KRW 111.6 billion** from 2018 to 2020 and helped build **2,620** SME smart factories.

(Unit: KRW 100 million, number)

Category	Number of participating large enterprises	Large enterprise contribution	Government budget	Current state of support
2018	4	117.1	114.5	597
2019	10	213.5	185.2	1,023
2020	18	262.5	223.3	1,000
Total	-	593.1	523	2,620

◦ **Samsung Electronics supported mainly non-partner companies**, POSCO, both partner and non-partner companies, and other large enterprises, including Hyundai Motors and LG Electronics, predominantly partner enterprises.

<Current state of progress made by the "Smart Factory Supply Project">

◈ **About 20,000 smart factories have been supplied** as of end of 2020 **with the goal of supplying 30,000** by 2022

Category		2014-2017	2018	2019	2020	Total
Government		3,495	2,221	2,820	4,732	13,268
Private sector	Win-win type	1,590	597	1,023	1,000	4,210
	Level checked	-	-	914	1,407	2,321
Total		5,085	2,818	4,757	7,139	19,799

* (Win-win type) They were supplied as part of an industry innovation campaign from 2014 to 2017.
(Level checked) The level of smart factories built by SMEs on their own were checked afterwards.