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## Space industry takes off in South Jeolla Province

*Gov't eyes Korea's southern region as new 'space belt'*



KSLV-2, also known as Nuri, takes off from Naro Space Center in Goheung County, South Jeolla Province, June 21, 2022.

Courtesy of Korea Aerospace Research Institute

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June 21, 2022, marks the turning point for Korea's space industry. The KSLV-2, better known as the Nuri, is a Korean-made three-stage launch vehicle that shot through the sky of Goheung County in South Jeolla Province and successfully released a test satellite into a 700-kilometer orbit. Following the failed first attempt in October the previous year, the accomplishment made Korea the world's seventh country to possess functioning space launch vehicle technology capable of carrying a 1 kilogram or heavier satellite — following the U.S., Russia, the European Union, India, Japan and China.

With the historic episode complete, South Jeolla Province on Jan. 22 launched another mission. The provincial government declared it will become the country's leading province to nurture and develop space launch vehicle technologies. Moreover, they said that along with neighboring South Gyeongsang Province, they will turn the country's southern coastal regions into Korea's new "space belt." Their ultimate objective is to include Mars within their plans and raise Korea's global space industry market share from 1 percent to 10 percent by 2045.

"With Naro Space Center in Goheung at its pivot, we will strengthen the country's global space development industry competitiveness to an innovative level," Kim Yung-rok, governor of South Jeolla Province, said in a press conference on Jan. 22 at the local government's headquarters in Muan County. "And South Jeolla Province will rise as the mecca of Korea's space industry."

Last December, the Ministry of Science and ICT revised the country's Space Development Promotion Act and designated Goheung, South Jeolla Province's southern coastal county, as the country's unique space industry cluster that specializes in the development of launching vehicles. South Gyeongsang Province and Daejeon, under the same legal update, were also promoted into the space industry cluster. They will specialize in satellites as well as the human resources sector, thus forming part of South Jeolla Province's space belt.

Heads of South Jeolla Province's space division believe that their launch vehicle technologies, in the private sector, are about 18 years behind those of advanced countries. To offset the gap, the authority said they will contribute over 1.6 trillion won (\$1.3 billion) by 2031 to "anchor" companies, prepare state R&D centers dedicated to launch vehicles, and build further core infrastructure — including a launch vehicle test facility, a comprehensive center



South Jeolla Provincial Governor Kim Yung-rok speaks during a press briefing at the provincial government's headquarters in Muan County, Jan. 22, announcing government plans to develop Goheung as the mecca for the country's space industry.

Courtesy of South Jeolla Provincial Government



Children visit a special exhibition for the successful launch of the Nuri rocket, at Gwahcheon National Science Museum in Gwahcheon, Gyeonggi Province, June 22, 2022.

News

that supports evaluating and certifying startups, other private space firms, and a science park to raise public awareness on the importance of space exploration.

With 380 billion won approved, by 2028 the provincial authority will introduce the Naro Space Center a new industrial complex on a 1.72 million square meter site where launch vehicles based on both liquid and solid fuels will be simultaneously researched.

On a separate track, the provincial government also plans to bring local small to medium-sized manufacturers into the industry to build parts for launch vehicles. The study of farm cultivation methods in a zero-gravity environment is also underway until 2030.

"With all the space industry clusters complete, we expect there will be over 10 anchor companies by 2031," the governor said. "They will generate business opportunities worth over 2.66 trillion won, with an added value of 1.14 trillion won, and will create jobs for over 20,000 people."

Korea Aerospace Research Institute (KARI), which observes the technological safety and potential errors of Nuri, plans for four more rocket launches in Goheung by 2027, each time carrying

small-size satellites. Hanwha Aerospace, the country's major private space developer, is participating in the mission, investing over \$67 billion won over the course of five years to strengthen Nuri's launch vehicles. Other private developers will also join the domestic space campaign as soon as 2030, placing satellites of various purposes in orbit.

The country's space initiative has already seen local start-ups lock horns in a bid to stand out as the country's leading space launch vehicles service provider. Perigee Aerospace in Daejeon, Innospace in Sejong and Unastella in Seoul are among the leaders, all having acquired investments of hundreds of millions of won. With giants like Hanwha Aerospace and Korean Air, the firms are trying to make launch vehicles safer, more affordable and also recyclable.

According to a space observer in Korea, there have been an increasing number of space launch vehicle developers in the country in a rather short amount of time. Having created a unique local ecosystem of their own, the domestic players, despite their youth, have shown "surprising growth and high potential."

The world's space launch vehicles industry market is expected to reach \$29.6 billion by 2027, according to market data analysis firm Markets and Markets.

Korea's space industry took its first notable step in 1992, when it launched its first satellite KITSAT-1 atop Europe's Ariane 4 space launch system. In 2002, the country's first liquid-fuel engine rocket, KSR-3, was also successfully launched. Since humans started exploring space in 1957 with the Soviet Union's Sputnik 1, Korea has come a long way, not giving up what is still considered a threshold overcome by only a few elite countries so far.