

SWP Comment

NO. 4 JANUARY 2026

The K(orea)-Factor in the *Zeitenwende*

South Korea and the Rebuilding of Germany's Defence Industrial Base

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Germany is facing a security policy *Zeitenwende* whose industrial dimension has not yet been sufficiently addressed. The war in Ukraine, rising military threats in Europe, and the long-term underfunding of the German Armed Forces have exposed the limits of existing defence industrial capacity, while the reliability of the United States (US) as a security guarantor is increasingly uncertain. This creates a strategic need for Germany to quickly rebuild its defence industrial base. Yet, despite the increased demand and funding, German defence industries are struggling to scale production quickly, exposing capability gaps that endanger both national defence and NATO commitments. In this context, cooperation with South Korea gains strategic relevance, as plans for localised production by Korean defence firms in Germany could ease bottlenecks, shorten supply chains, and enhance operational readiness without creating new strategic dependencies.

Russia's war against Ukraine has significantly changed Germany's strategic calculus. Primarily driven by the *Zeitenwende*, Germany has committed itself to rebuilding the Bundeswehr to restore its readiness, accelerate capability acquisition, strengthen European defence industrial resilience, and cooperate more deeply with technologically compatible partners. Chancellor Friedrich Merz is aiming to transform the Bundeswehr into Europe's "strongest conventional army" by 2031. This shift includes a massive increase in defence spending: 5 per cent of gross domestic product, with 3.5 per cent allocated directly to military investments, and an additional 1.5 per cent dedicated to dual-use infrastructure such as roads and bridges to serve civilian and military needs.

The Bundestag has approved constitutional changes to relax fiscal constraints, allowing for the creation of a €500 billion modernisation fund – a decision that marks a historic break with decades of restrained military policy. On 4 December 2024, the German government adopted the National Security and Defence Industry Strategy, which focuses on developing a dynamic, scalable, and innovative industrial base that meets the Bundeswehr's requirements quickly and reliably. The strategy prioritises the domestic promotion of key technologies, but also allows for international cooperation in order to effectively close NATO's capability gaps.

Despite the bold vision, however, Germany's defence transformation faces a number of challenges. Aside from domestic politi-



cal challenges, industrial bottlenecks and slow procurement processes limit the speed at which Germany can expand production and innovation. Hence, despite a surge in demand, significantly ramping up production remains a serious challenge, as it requires skilled labour, long-term financing and contracts to mitigate risks, as well as stable supply chains. Compounding the problem are considerable maintenance backlogs. All of this is happening at a time when Germany's strategic calculus must confront both a revisionist Russia waging war in Europe and against Europe's security order, and an increasingly disinterested US, on which Germany had built its security for the past seven decades. As several officials from the German government, including chief of defence General Carsten Breuer, have warned that NATO members need to prepare for a possible attack from Russia within the next four years, rebuilding Germany's defence industrial base is a pressing matter. This provides a potential inroad for Korean companies, which have both the political backing from Seoul and the required capital to pursue cost-intensive plans to localise production in Germany. In theory, South Korean firms – known for speed, scalability, and competitive technologies – are well positioned to fill emerging gaps, both as a short-term “gap-filler” and, as the first South Korean companies are now aiming for localised production in Germany, as a long-term industrial partner in rebuilding Germany's defence industrial base. In practice, however, numerous challenges remain – from political to regulatory ones. At the most fundamental level, Berlin must decide how to strategically position itself with regard to Korean defence companies' plans to localise production in Germany, and how to balance the desire for a protective defence industrial policy with the geopolitical necessity of quickly rebuilding its capacities and bolstering the defence supply chain in Europe.

South Korea as export market and technology transfer recipient

South Korea remains an important export market for German armaments. Between 2004 and 2024, South Korea regularly ranked among the top 10 export markets for German military equipment, constituting on average the seventh most important export market over the past 20 years. Although the US holds a commanding share of 72 per cent, Germany, accounting for 15 per cent of South Korean arms imports, was the second largest exporter of arms to the Republic of Korea (ROK) in 2024. The most critical German import goods include parts for submarines and combat ships, parts for tanks and armoured vehicles, electronic and communications equipment, parts for combat aircraft as well as (parts for) torpedoes, missiles, and rockets.

Submarines

German-Korean cooperation on submarines presents a landmark example of a technology transfer partnership that has since evolved into a complex relationship of both competition and collaboration. The collaboration began through licensed production and technology transfer. On the grounds of an initial order placed in 1987, South Korea acquired three Type 209 submarines from Germany, with the first being acquired in 1992 and commissioned in 1993. The successive submarines in the Jang Bogo-class (KSS-I) were built in South Korea by Daewoo Shipbuilding and Marine Engineering, the predecessor of Hanwha Ocean, representing the initial step in establishing South Korea's submarine (production) capabilities. In 2000, South Korea's Ministry of Defense signed an agreement with Howaldtswerke-Deutsche Werft, the predecessor of ThyssenKrupp Marine Systems (TKMS), to introduce the Type 214 submarines. The agreement included both the order for the first batch of submarines (Son Won-il-class/KSS-II) and the transfer of crucial submarine technologies, including major ones such as the air-independent propulsion system. The KSS-III,

also dubbed the Dosan Ahn Changho-class, represents a major shift in South Korea's submarine programme, moving from German-licensed production to increasingly indigenous design and construction. Against this background, industrial cooperation has more recently shifted to maintenance, repair, and overhaul, component supply, and mutually beneficial technology agreements.

Components for land systems

Historically, South Korean defence companies have used – and, in some cases, continue to use – German components in the production of their main battle tanks. Most notably, the K2 Black Panther main battle tank, manufactured by Hyundai Rotem, initially incorporated several German-designed parts. The first production batch (2014–2015) of K2 tanks was equipped with a German-made powerpack consisting of a diesel engine from MTU Friedrichshafen and a transmission system from RENK. Although the second (2019–2022) and third (2024–) production batches use a domestically developed engine, German transmission systems continue to be used, as local systems have repeatedly failed durability tests. Moreover, the K2 uses ammunition such as KSTAM-II, which is based on the SMArt 155 mm round by Diehl Defence.

Hanwha Aerospace's successful K9 Thunder self-propelled howitzer is also powered by an MTU diesel engine, produced under licence by STX Engine in South Korea. However, in 2020 the South Korean Ministry of Trade, Industry and Energy launched a localisation initiative. By 2023, approximately 500 key engine components were being produced domestically, both to limit external dependencies in key components and allow for greater export flexibility, as the German-made engines require export approval from Berlin, making it an indirect gatekeeper for some Korean arms deals. In 2025, production of the first K9's with a South Korean engine started in Egypt.

Missiles and ammunition

Cooperation in the missile sector is primarily focused on the procurement and integration of German-designed systems into South Korea's Three-Axis System. A notable example is the acquisition of 267 Taurus missiles since the initial order was made in November 2013. Developed by a German-Swedish partnership between MBDA and Saab Bofors Dynamics, and designed for use against hardened targets, bunkers, and concealed command centres, the Taurus KEPD 350K was the first European missile to be integrated onto a South Korean fighter.

The German company Diehl Defence also has a significant and growing cooperation with South Korea, primarily centred on its IRIS-T missile system. Cooperation started in 2017 with the initial integration of the IRIS-T onto the KF-21 Boramae – South Korea's indigenously developed 4.5-generation fighter jet – and was expanded to integration of the IRIS-T to the FA-50/T-50 series of light combat aircraft. In 2023 Diehl Defence signed an MoU with LIG Nex1 (LIG Defense & Aerospace) to explore further opportunities for collaboration on the IRIS-T programme, while also increasing joint marketing efforts, especially for the FA-50/T-50 aircraft, with a focus on expanding its exports to European and African export markets. In October 2025, Diehl then signed an MoU with Hanwha Systems to evaluate the potential for integrating Hanwha's surface-to-air missile radar system into Diehl's ground-based air defence systems.

Recent easing of export control regulations to Korea

During Chancellor Olaf Scholz' state visit to South Korea in May 2023, the two sides agreed to conclude a Military Secret Information Protection Agreement, which aims to allow the two countries to share and protect classified military information more securely, enable closer coordination on defence programmes and the interoperability of systems, and support smoother cooperation within defence industry supply chains

Table

Major current contract competitions between Korea and Germany

	Romania	Canada	Spain
Detail	216 main battle tanks	12 patrol submarines	214 self-propelled howitzers and support vehicles
Korean offer	Hyundai Rotem K-2	Hanwha Ocean KSS-III Batch II	Hanwha Aerospace K9 Thunder howitzer
German offer	Rheinmetall KF51 Panther KNDS Leopard 2A8	TKMS Type 212CD	Rheinmetall PzH 2000 General Dynamics European Land Systems and KNDS, Nemesis and PIRANHA AAC
Winner	Undecided	Undecided	Undecided
Volume	\$7.5 billion	\$43.5 billion	\$5.29 billion

Source: *Korea JoongAng Daily*, 26 December 2025, <https://koreajoongangdaily.joins.com/news/2025-12-26/business/industry/Europe-was-Kdefenses-promised-land-A-new-EU-initiative-threatens-that/2485683>.

to minimise possible disruptions. In August 2023, Germany then announced it would simplify export procedures for defence and dual-use goods shipped to South Korea to speed up the transfer of defence materials between the two partners, as approval processes carried out by the Federal Office for Economic Affairs and Export Control (BAFA) often take 6 to 12 months. The new export procedures now effectively treat the ROK as a NATO-equivalent country, which allows South Korean companies to procure non-sensitive defence and dual-use materials from their German counterparts directly and without going through the BAFA approval process. This was meant to boost industrial cooperation and supply-chain integration and create new synergies through improved distribution channels, both between the two countries and more broadly on the global defence procurement market, for example by allowing South Korean weapons makers to incorporate German parts without long bureaucratic delays.

Increasing competition on the global market

As South Korea’s defence industry becomes a global player, competition between German and South Korean defence companies is becoming more pronounced (see Table). Especially in European countries, the urgent need for quick delivery to rapidly modernise their militaries in light of Russian aggression has created significant opportunities for South Korean defence companies – despite the EU’s principle of prioritising European-made weapons. As such, South Korean defence firms are now seen as direct competitors to established global players, including those from Germany, in securing contracts. For instance, major arms deals between South Korea and European nations include Poland’s procurement of 1,000 Hyundai Rotem K2 battle tanks and 672 Hanwha Aerospace K9 Thunder self-propelled howitzers as well as 48 FA-50 Golden Eagle light combat aircraft and 290 K239 Chunmoo rocket launchers – with production facilities being established in Poland. Other European countries, such as Romania, Estonia, Finland, Norway, and the United Kingdom, are also cooperating with or pro-

curing South Korean defence systems. Crucial reasons for South Korean firms' attractiveness are both their competitive prices and quick production and delivery times, but also the underlying technology transfer agreements that allow purchasing countries to set up local production.

South Korea's role in rebuilding Germany's defence industrial base: Opportunities and challenges

In theory, South Korea can play a decisive role in the process of rebuilding Germany's defence industrial base, both as a gap-filler in the short term and a true industrial partner in the mid- to long term, thus leveraging the comparative advantages and strengths of the South Korean defence industry.

Background: Major characteristics of South Korea's defence industry

South Korea's defence industry has emerged as one of the most dynamic and rapidly advancing in the world. Shaped by the country's unique security environment, strategic geopolitical location, and government-backed efforts to increase defence self-reliance and global competitiveness, South Korea's defence industry has evolved from a country that was wholly reliant on US military aid to being one of the world's top 10 arms exporters. In this respect, the 1970s marked a turning point, as the government initiated policies to localise defence production. Since then, South Korea has built a vertically integrated and increasingly high-tech defence sector capable of designing, manufacturing, and exporting advanced military platforms.

South Korea's defence industry is marked by a set of specific characteristics that distinguishes it considerably from Germany's, thus pointing to a very different strategic culture that influences cooperation between the industries.

- **State-driven strategy:** The Ministry of National Defense and the Defense Acquisition Program Administration play cen-

tral roles in shaping industry priorities, funding R&D, and facilitating exports.

- **Public-private partnerships:** Major conglomerates (*chaebols*) such as the Hanwha Group, Hyundai Motor Group, and LIG Nex1 dominate the sector, often working closely with state (research) institutions.
- **Technological advancements:** The industry has invested heavily in indigenous innovation, producing highly competitive systems such as the K2 Black Panther main battle tank, the K9 Thunder self-propelled howitzer, the FA-50 light combat aircraft, the T-50 advanced supersonic jet trainer, and the Cheongung-II air defence system.
- **Strategic focus on exports and localisation:** South Korea signed major arms deals recently with Poland, the United Arab Emirates, Egypt, and several South East Asian nations, some of which explicitly encompass localised production (e.g. in Poland and Egypt).
- **"Ever-warm" production:** Given the de facto state of war on the Korean Peninsula and the ever-increasing threat from North Korea, the South Korean defence industry maintains "ever-warm" factories to meet the needs of its military and export partners, resulting in large-scale production quantities.
- **Bi-partisan support:** The objective of a strong, export-driven defence industry is shared by both political camps in South Korea – a rarity in the otherwise divided political landscape.

Gap-filler and capacity multiplier

The integration of South Korean industrial potential into the German defence landscape is not merely an import process, but part of a systematic realignment. South Korea could assume a complementary role in the short- and mid- to long term and specifically address some of the structural deficits of the German defence industrial base, for example lack of scalability, slow innovation cycles, and capacity bottlenecks. As a short-term gap-filler, South Korea can act as an immediate capacity multiplier. For

instance, a hybrid model would be conceivable to address short-term capacity gaps in land systems, for which South Korea could provide tried-and-tested platforms such as chassis and hulls (e.g. from K2 or K9 systems), which can be delivered within a very short time. These could be refined in Germany with “German intelligence” (such as fire control systems, optronics, and communication solutions). This model would solve the quantity problem without relinquishing technological sovereignty over mission-critical subsystems. Moreover, since ammunition shortages are an Achilles heel for European defence, South Korean companies with automated mass production lines for 155 mm artillery ammunition could implement these in Germany as licensed production or through joint ventures in order to quickly bring national and European stocks up to target levels. In the mid-to long term, South Korean companies aiming to localise production in Germany can function as true defence industrial partners.

Industrial partner: South Korea’s plans for localised production in Germany

A sign of the current shift in German-Korean defence industry relations is the plans of Korean companies to localise production in Germany. Most notably, Hanwha Aerospace publicly announced in mid-2025 its plans to establish a large-scale manufacturing facility in eastern Germany. According to available documents, the company aims to produce precision-guided missiles and NATO-standard 155 mm ammunition, with plans to potentially expand into aerospace as well as intelligence, surveillance, and reconnaissance. The facility is intended to serve as a production hub for both the German and broader European markets, thus aiming to align with Germany’s goal of building a more resilient, independent defence industrial base while addressing both strategic gaps in missile defence and bottlenecks in ammunition production. Hanwha, which elevated its Germany Task Force to an executive-level organisation, has

already institutionalised its presence in Germany, procuring from more than 60 German suppliers, with annual sourcing volume exceeding €100 million.

LIG Nex1, on the other hand, focusses not on “heavy steel production”, but on R&D and system integration. Having chosen Munich as its European Headquarters, its strategy focuses on core capabilities such as C2 communications, Electronic Warfare, and Counter-Unmanned Aerial System (C-UAS) technologies. The Munich hub is tasked with building a digital resilience network with German tech firms and research institutions to adapt Korean missile seekers and jammer technologies to European battle-field requirements.

Strategic framing and rationales

South Korean defence companies frame their plans to localise production in Germany – and more broadly in the European Union (EU) – around several strategic arguments that are tied not only to commercial, but also to geopolitical, industrial, and partnership/alliance considerations. Thus, South Korean defence firms argue that localising production in Germany is not just about selling products, but about supporting close partners to eliminate production bottlenecks and gaps. This contributes to stable supply chains in Germany and Europe, thereby enhancing industrial resilience and strategic autonomy, supporting NATO interoperability and readiness, creating local jobs and local economic value, transferring technology, and aligning with EU/NATO industrial rules and expectations – thus creating a narrative of strategic partnership rather than simple outsourcing.

This framing is built on several inter-related strategic rationales. Most notably, establishing production facilities in Germany would give South Korean firms greater access to one of Europe’s largest defence markets – one with robust procurement budgets and long-term modernisation programmes. By investing in Germany, South Korean companies also hope to integrate more deeply into European defence supply

chains. This increases its chances of participating in collaborative programmes and serves as a springboard to broader EU work-share. As EU and NATO procurement increasingly favours equipment produced inside the EU or in NATO countries – either directly or via joint ventures with localised production – localisation helps South Korean companies satisfy the local content and industrial participation criteria that many European contracts require, while also helping to navigate export controls, simplify logistics, and mitigate tariff or regulatory barriers. Hence, Korea’s defence firms see localisation in Germany not just as a manufacturing shift, but as a strategic foundation to deepen European market penetration, foster high-value partnerships, integrate into critical defence supply chains, and build a credible long-term presence within NATO and EU defence architectures.

Strategic challenges facing Korean companies

The German defence market presents unique structural, political, and industrial barriers to foreign and especially non-NATO members. Most notably, Germany has some of the strictest procurement standards among NATO states. Germany’s complex and often slow administrative and licensing procedures for establishing defence production sites entail, among other things, obtaining the required national permits and licences under multiple laws (e.g. War Weapons Act and Weapons Law); meeting stringent safety, environmental, and security requirements; managing export control obligations, including those under EU law; and also securing political and public acceptability. Moreover, increased defence spending in Germany is leading to a massive demand for skilled workers, IT specialists, and engineers, creating a strong competition for talent – also with established German companies. Germany has a powerful, politically connected defence industrial base and often aligns procurement with EU defence industrial policy, disadvantaging non-EU suppliers unless their products can fill urgent gaps.

Major German firms advocate for “European solutions” and push back against non-EU competition. Intra-EU production and supply chains are also incentivised by EU programmes (such as SAFE). While allowing for cooperation with third countries, these initiatives are intended mainly to support contracts carried out by European companies. In short, Germany’s concerns are not fundamentally about hostility to a potential South Korean presence, as Berlin has welcomed deeper defence cooperation and eased export procedures with Seoul. Rather, concerns revolve around issues such as protecting the European and German defence industrial bases; ensuring strategic autonomy and reducing dependence on non-European sources; aligning procurement and industrial policy with broader EU priorities; securing fair technology sharing and competition; and maintaining robust security and supply chain standards.

Policy implications and recommendations

The changing qualitative and quantitative nature of defence industrial cooperation between Germany and South Korea reflects broader geopolitical, strategic, and economic shifts. Respective policies must balance Germany’s desire for a restrictive and protective defence industrial policy with the geopolitical necessity of quickly rebuilding its capacities and bolstering the defence supply chain in Europe. With regard to South Korea’s plans for localised production in Germany, Berlin should try to shape those plans by welcoming Korean investment where it strengthens German and European capacity; impose clear conditions to protect autonomy and industrial depth; use Korean strengths to solve urgent readiness and production challenges; and embed cooperation in a long-term strategic framework. More important, however, is that Berlin must make a fundamental decision on how to strategically position itself with regard to investments in the German defence sector by friendly non-NATO countries.

Solidify defence export expansion and streamline regulatory harmonisation

Although Germany's recent export reform measures to accommodate German-Korean defence collaboration marks a significant step forward, long-term cooperation requires consistent, transparent regulation, specifically the further alignment of export control and licensing frameworks to enable smoother component exchange, especially with regard to joint exports to third countries. To that end, South Korea's NATO-equivalent status should be permanently codified in the Military Equipment Export Control Act, which would send a strong political signal to the defence industries in both countries. Moreover, Berlin should implement a process for fast-track licensing for joint projects (e.g. German components used in South Korean systems) that are being offered to European customers or NATO allies. This would support joint market access and recognise the mutual strategic benefit of these exports. A broader export control harmonisation agreement in the future should include issues such as joint licensing standards, common industrial security standards, and IP protection frameworks.

Addressing capability gaps and bottlenecks

With Korean firms aiming to localise operations in Germany, Berlin stands to benefit from increased industrial activity and access to competitive systems for both domestic use and re-export. Aside from positive economic and labour effects, the localisation plans of South Korean defence firms provide a strategic opportunity for the German government to leverage this investment to address capability gaps and bottlenecks, thus strengthening its own defence industrial base more quickly. Especially in areas where Germany and Europe face acute shortages – among others in ammunition and propellant production as well as drone and missile defence – bilateral industrial cooperation with South Korea makes the

most strategic sense. To that end, Berlin should facilitate and incentivise Korean investment in Germany's defence sector, if certain conditions are met. For instance, localised production should encourage local supply chain participation, for example, by requiring a minimum percentage of local content in contracts involving Korean companies or incentivising cooperation with German SMEs and Tier 2 suppliers. A Security of Supply treaty could ensure that, in case of a crisis, South Korean-owned or jointly owned production facilities in Germany prioritise the needs of the Bundeswehr and NATO. Moreover, Germany should negotiate relevant tech transfer agreements to ensure that local production includes meaningful transfer of know-how, maintenance capability, and subcomponent manufacturing, rather than just final assembly.

Institutionalisation of a bilateral defence industrial dialogue

As the nature of German-Korean defence industrial cooperation is shifting, a structured coordination between both governments and industries must be ensured. As Germany and Korea lack a robust defence procurement framework, this magnifies bureaucratic uncertainty and potentially complicates long-term sustainment and joint industrial planning. As such, Berlin and Seoul should pursue the establishment of an institutionalised bilateral defence industrial dialogue that involves government officials, industry representatives, and researchers. Such a platform would enable both countries to align policy, coordinate industrial strategy, and manage emerging risks while unlocking new opportunities in joint development, production, and export. With the creation of such a dialogue, Germany and South Korea could transform ad hoc cooperation into a systematic, resilient partnership, enabling both countries to better navigate global defence market competition, contribute to mutual security interests, and align long-term industrial strategies in a way that benefits national defence and economic growth.



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ISSN (Print) 1861-1761
ISSN (Online) 2747-5107
DOI: 10.18449/2026C04