

Intelligent Investment

Cold storage: A growing real estate asset class in Germany

VIEWPOINT

Cold storage facilities are gaining in popularity due to rising demand from the food, pharmaceutical, and e-commerce industries and are becoming a strategic addition to real estate portfolios.

CBRE RESEARCH
SEPTEMBER 2025



Executive Summary

The cold storage industry in Germany is a critical piece of infrastructure that ensures the supply and transport of temperature-sensitive goods. This segment comprises a very large proportion of food, both from the fresh segment (such as fruit, vegetables, salads, herbs, meat, poultry, fish, seafood, and dairy products) and frozen products. The coronavirus pandemic has clearly demonstrated how systemically important logistics, and thus cold storage, is for the inelastic demand for food and, consequently, for supplying the population. In addition, reliable and seamless cold chains are also required for other products. Strict requirements apply in particular to pharmaceutical products such as vaccines, medicines, and biopharmaceuticals, as well as medical products such as blood reserves and substances for laboratory tests. However, together with certain chemical and electronic products (chemicals, batteries, LCD/OLED displays, etc.), they account for only a small proportion of the demand for cold chain logistics.

The industry is characterized by high entry barriers due to high investment costs and regulatory complexity. Established market participants have a competitive advantage due to their expertise, long-term customer relationships, and ability to efficiently comply with complex regulations. At the same time, demand for temperature-controlled logistics continues to grow unabated, driven by population growth, changing consumer behavior, and the rise of online grocery shopping. For real estate investors, the sector offers stable cash flows, high customer loyalty, and long-term leases, but is characterized by a strong market concentration and limited availability of modern facilities.

The German cold storage market serves the regional population's demand for food and pharmaceutical products. Prime locations are located near major cities and metropolitan areas, as well as at decentralized hubs along important transport routes. Cold storage properties command a significant rental premium compared to conventional logistics properties. The global market for cold storage is also growing rapidly. Investment in cold storage properties is increasing, with a focus on core and core-plus assets and a preference for investments outside the top investment centers. Investments are mainly made through real estate funds, which underscores the growing importance of cold storage assets as an attractive investment product; due to their niche character and special real estate structure, they are also often used to diversify portfolios, in addition to classic (logistics) real estate.

Conclusion

Cold storage facilities are a forward-looking, cycle-independent, and therefore resilient real estate asset class, characterized by high (construction) technical requirements and strict regulatory requirements for the production, storage, and delivery of temperature-sensitive products. Market dynamics are driven globally by social and technological megatrends (demographics, convenience products, e-commerce, sustainability). According to Grand View Research's "Cold Storage Market Size, Share & Trends Analysis Report", the estimated global market volume for cold storage in 2024 was US\$159.7bn; by 2030, a volume of US\$427.6bn is expected to be reached, representing an average annual growth rate of 18.1% between 2025 and 2030. These properties offer the prospect of sustainable growth potential, stable cash flows, high user loyalty, and are an attractive addition to future-proof real estate portfolios in times of digitalization, ESG, and changes in consumer behavior.

Cold chain logistics in Germany – key infrastructure for food retail, the pharmaceutical industry, and E-commerce

Temperature-controlled warehouses are an essential part of modern infrastructure. They ensure the supply of perishable goods and are therefore indispensable for the smooth functioning of the food, pharmaceutical, and e-commerce industries in particular.

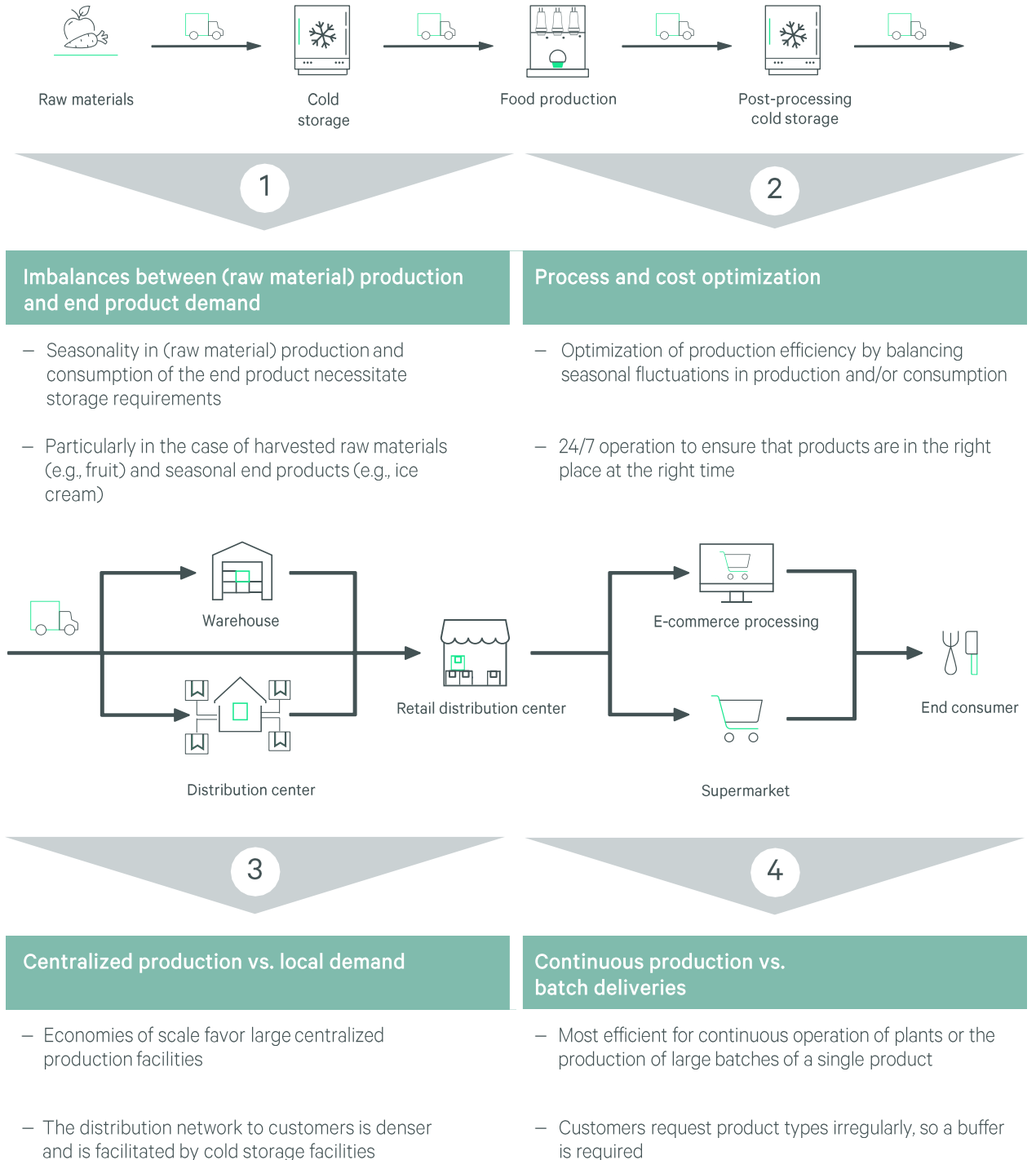
Compared to conventional warehouse logistics, cold chain logistics requires higher investment costs and is significantly more complex in terms of operational and regulatory factors. Established market participants benefit from decisive competitive advantages: they have in-depth expertise, long-standing customer relationships, customized IT systems, and the ability to efficiently meet complex legal requirements within global supply chains, while it is significantly more difficult for newer market participants to gain a foothold.

Cold storage facilities serve a broad spectrum of customers – from large blue-chip companies in the food industry to medium-sized family businesses. Larger customers in particular can – not least because of the high investments made in the location – act as anchors and generate additional demand at a location. Added to this is the proximity to the end consumer market, which drives demand for temperature-controlled logistics.

Tenants make considerable investments in technical (refrigeration) equipment and space in order to keep their operations and business activities running smoothly. As with all special-purpose real estate, this results in a high degree of location loyalty on the part of users, which is reflected in very long leases with numerous options. This is another reason why the cold chain logistics sector scores highly with stable cash flows, high customer loyalty as a result of location loyalty and long-term leases, making it very attractive from an economic perspective – even though the high barriers to market entry and strong market concentration by a few established players make it difficult for new companies to enter the market. However, for investors who want to benefit from the above factors by acquiring cold storage facilities – either directly or indirectly via investment vehicles – there are interesting options for diversifying their portfolios and participating in the growing relevance of this subasset class with its attractive risk-adjusted returns.



Figure 1: Cold storage & logistics in the frozen food supply chain



Source: Lineage, CMBS Report, CBRE Research

Types of cold storage properties

Often, a conventional warehouse property can be retrofitted with a so-called "box-in-box" system. This involves installing insulated metal panels to create different climate and humidity conditions in an otherwise unconditioned building. The planning and development of purpose-built cold storage facilities (i.e., not retrofitted cold storage facilities) is generally more complicated and involves significantly higher additional costs.

In general, a distinction can be made between two categories of cold storage facilities: public and private. A private cold storage facility is owned by a company (often in the food production segment) or an investor who enters into traditional net lease agreements with third-party tenants. It is usually used exclusively for storing the products of that specific company, often with a combination of frozen, refrigerated, and dry storage rooms in the same building. The properties themselves are often retrofitted existing warehouses.

In contrast, public refrigerated warehouses (PRWs) store and distribute products on behalf of other companies. Public warehouses are usually owned and operated by third-party logistics providers (3PLs). Private cold storages typically have a higher proportion of non-refrigerated (i.e., dry) space, while public cold storage consist of 80% or more refrigerated, and often frozen, space. All cold stores offer some degree of temperature control and refrigeration. The sector encompasses a wide variety of premises, ranging from mobile refrigerated containers to special-purpose cold stores built specifically for particular industries and tenant requirements.

Figure 2: Types of cold storage facilities using the example of the USA

Type	Description
Refrigerated containers	Refrigerated containers for the cold storage of small quantities of temperature-sensitive products; offer flexibility through mobility, e.g., in freight transport
Blast freezers and chillers	Refrigeration systems used to quickly lower the temperature of perishable products quickly below freezing point
Cold rooms	Storage rooms used to maintain a specific temperature for the storage of perishable products; a larger alternative to refrigerated containers and refrigeration systems
Pharmaceutical grade cold storage	Special cold storage facilities used by hospitals and research institutes that typically work with biopharmaceuticals, blood, and certain vaccines
Plant-attached cold storage	A factory-owned refrigeration system for manufacturers who want to keep their cold storage on in-house and transport products directly from production to a special on-site refrigeration system via a conveyor belt
Dedicated custom cold storage facilities	Facilities provided by a 3PL for cold storage tenants with special requirements

Source: Winnesota Regional Transportation, Basics Of Cold Storage + Refrigerated Warehousing Solutions

Structural features of temperature-controlled storage solutions in comparison

The requirements for temperature-controlled storage space vary depending on its position within the supply chain – from pre-production and interim storage to serving as a logistics hub. The properties differ not only in terms of technical equipment and investment volume, but also in terms of rental structures, utilization, and market entry barriers. The following overview compares the key features and differences between the types of use.

Figure 3: Structural features in the supply chain

Factor	Pre-production Storage	Interim storage / post-production	Logistics hub
Typical features for modern cold storage	Clear height >15 m; area > 9,000 sq m; pallet spaces > 20,000		
Temperature	-20°C/-30°C Ambient temperature	Room temperature	Custom
Construction costs*	high	medium	high
Market entry barriers	high	low	high to very high
Optimal capacity utilization	~85	~95%	~85%
Average lease terms	~5-10 years	~3-7 years	~5-10 years
Rent surcharges**	€2.50–€5.00/sq m	€2.00–€4.00/sq m	€2.50–€5.00/sq m
Maintenance	high	low	High maintenance and replacement investments (Repex)
Location	Important logistics and food production corridors close to customers	Primary, secondary	Network in important logistics and production corridors

*Construction costs excluding outdoor facilities (including VAT) €900 - €1,300/sq m (GFA) plus 30% for refrigeration technology; heavily used outdoor facilities €120–€180/sq m, ancillary construction costs 12–20%

**Rental surcharges based on the usual local logistics rent

Source: CBRE Research

Digression: Logistics models

In Germany, public cold stores are operated by 3PL (third-party logistics) providers. There are many 3PL providers with cold storage capacities in Germany, including large companies such as traditional logistics providers (DHL, Dachser, Kühne+Nagel, etc.), but also specialist providers for temperature-sensitive pharmaceutical or chemical products and food.

3PL companies integrate multiple services and act as an extension of their clients' operations. They offer companies flexible and cost-effective solutions for storing temperature-sensitive products and are particularly attractive to small and medium-sized enterprises (SMEs) as they offer flexible capacities and better scalability, as well as the ability to store and distribute perishable products without having to make high investments in infrastructure, vehicles, and personnel themselves.

3PL is one of several logistics models that differ mainly in the quality of the networking between the client and the logistics company and the scope of logistical support. 3PL has become particularly established for larger companies with corresponding logistical requirements. 4PL and 5PL are relatively newer models and are considered solutions of the future; they offer even greater integration and efficiency gains through advancing digitalization and automation.

Figure 4: Comparison of logistics models

Logistics model	Scope of service	Features	Area of application
1PL	Processes purely internal to the company, no external service providers involved	Direct connection from the company to the market	Less complex processes, small & fixed customer base
2PL	Transport (including vehicles)	Logistics service providers operates between companies and the market	Standardizable and regularly recurring requirements
3PL	Packaging, storage, transport, order processing, distribution; technological solutions	Flexible service modules for industry-specific logistics systems	Complex and sustainable end-to-end solutions
4PL	Full responsibility for the entire process with external service providers	Customized logistics models, close networking with the customer	Process optimization, cost reduction, transparency, sustainability
5PL	4PL services plus strategic consulting	Management consulting, process analysis and optimization, project management, and IT consulting	Expertise in digitalization, supply chain, big data analytics, IoT, automation

Source: DHL Freight Connections, CBRE Research

Regional concentration and rental structure in the German cold storage market

The market for cold storage logistics real estate in Germany is concentrated in selected key regions. Locations near urban centers and metropolitan areas are particularly attractive, although decentralized hubs along important transport corridors also play a significant role.

Cold storage logistics properties have specific equipment standards that are cost-intensive and, as a result, rents are generally higher than for conventional logistics properties. The premiums reflect the high requirements for technical equipment, insulation, and cooling technology. The amount varies depending on the type of property: for freezer warehouses, the rent is around 1.5 times the usual local rental rate, while for cold storage and refrigerated warehouses, an average premium of €2.00 to €5.00/sq m/month can be expected. As a reference: on average, the top 5 locations in Germany have prime rents for logistics properties of €9.00/sq m/month, while in secondary centers the figure is €6.80/sq m/month.

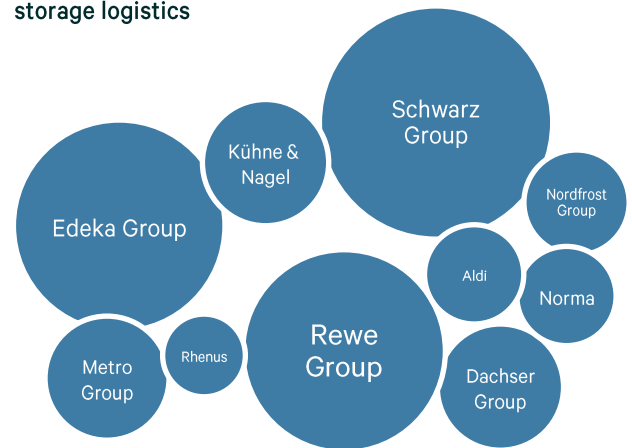
User loyalty in the rental market is correspondingly high – many tenants remain at the same location for long periods of time. Large retail companies such as Aldi, Edeka, and Metro, on the other hand, often operate their own refrigerated central warehouses as distribution centers for their brick-and-mortar stores. At the same time, specialized logistics service providers such as Nagel Transthermos, Dachser, Nordfrost, and Rhenus use cold storage space for the temperature-controlled storage and distribution of food, beverages, and pharmaceutical products. An additional surge in demand is being generated by the increasing delivery of food and beverages ordered online. Providers such as REWE, Picnic, and HelloFresh – just like brick-and-mortar retailers – rely on a continuous, reliable cold chain to ensure quality and freshness right to the customer's doorstep.

Figure 5: Locations of VDKL members



The map shows the locations of VDKL members. Due to geographical proximity, not all locations can be displayed individually in many regions

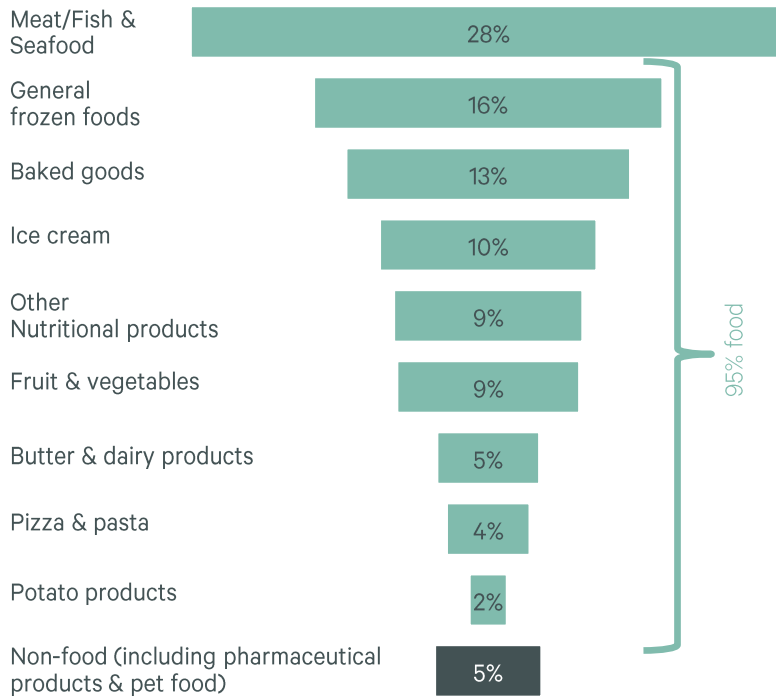
Figure 6: Major users of cold storage facilities and cold storage logistics



The size of the circle represents the frequency of use of cold chain logistics by the respective company.

Source: Association of German Cold Storage and Refrigerated Logistics Companies (Verband Deutscher Kühlhäuser und Kühllogistikunternehmen e.V., VDKL)

Figure 7: Pallet occupancy by segment in 2024

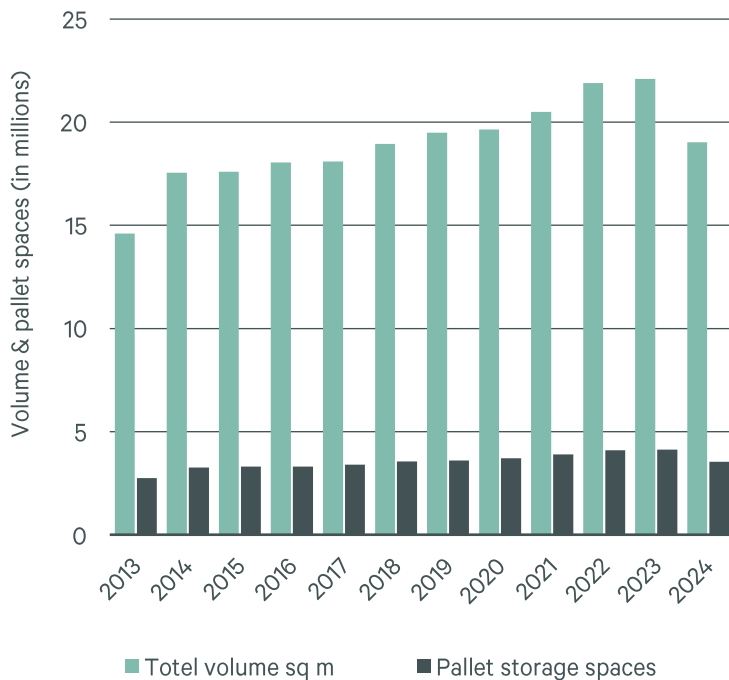


As can be seen in the figure above, in addition to specialized logistics service providers, large food retailers in particular are users of cold storage space.

This central role as the main driver of demand for cold storage is also underlined by the high utilization of pallets by the food industry, which accounts for 95% of pallet utilization. The non-food segment, including the pharmaceutical industry, accounts for only 5% of pallet capacity.

Source: German Frozen Food Institute (Deutsches Tiefkühlinstitut e.V., dti), CBRE Research

Figure 8: Development of total capacities



In 2024, the total volume of service cold storage facilities of VDKL member companies amounted to around 19m cb m of storage space and approximately 3.5m euro pallet spaces.

For Germany as a whole – including both VDKL members and non-members – a total of 366 cold stores were recorded in the same year. The total service cold storage volume was thus around 24m cb m and around 4.6m euro pallet spaces. In line with the above-mentioned 95% share of pallet occupancy, around 4.4m pallet spaces can be attributed to the food industry, which impressively underlines the immense relevance of this user group.

Source: Association of German Cold Storage and Refrigerated Logistics Companies (Verband Deutscher Kühlhäuser und Kühllogistikunternehmen e.V., VDKL), as of March 14, 2025

Figure 9: Demand drivers for cold storage and fresh food warehousing/logistics



Source: CBRE Research

Demand – Retailers

The German market for frozen products at the wholesale level continues to show positive development. The coronavirus pandemic has proven to be a turning point in this regard. Before the pandemic, sales growth was generated equally by food retail and home delivery (LEH/HD) and the out-of-home market – consisting of restaurants, cafés, and communal catering – and was below the 5% mark. In the three years after COVID-19, the out-of-home market became the significantly stronger driver – and sales grew at double-digit rates annually.

In 2020, the market suffered a slight setback due to pandemic-related restrictions and limitations. Total sales fell by just under 1.8% to €15.1bn, mainly due to restrictions in the out-of-home market, where sales declined by 20%. However, a significant recovery began as early as 2021, driven in particular by strong growth in the out-of-home market of 16% compared to the previous year. Here, the catch-up effects following the post-pandemic easing of restrictions had a significant impact. Sales in food retail and home services also continued to rise, albeit at a more moderate pace.

In the following years, 2022 and 2023, very strong double-digit sales growth was also recorded. In 2024, total sales amounted to €22.6bn – a growth rate of just under 3% compared to the previous year and thus on a par with 2018. This development underscores the growing importance of frozen products – both in brick-and-mortar retail and in the food service industry – and reflects changing consumer behavior and the resulting increase in demand for long-life, high-quality food. This development is now returning to normal, but a sustained further increase is still foreseeable.

Figure 10: Sales on the German frozen food market



Source: German Frozen Food Institute (Deutsches Tiefkühlinstitut e.V., dti), CBRE Research

Demand – Consumers

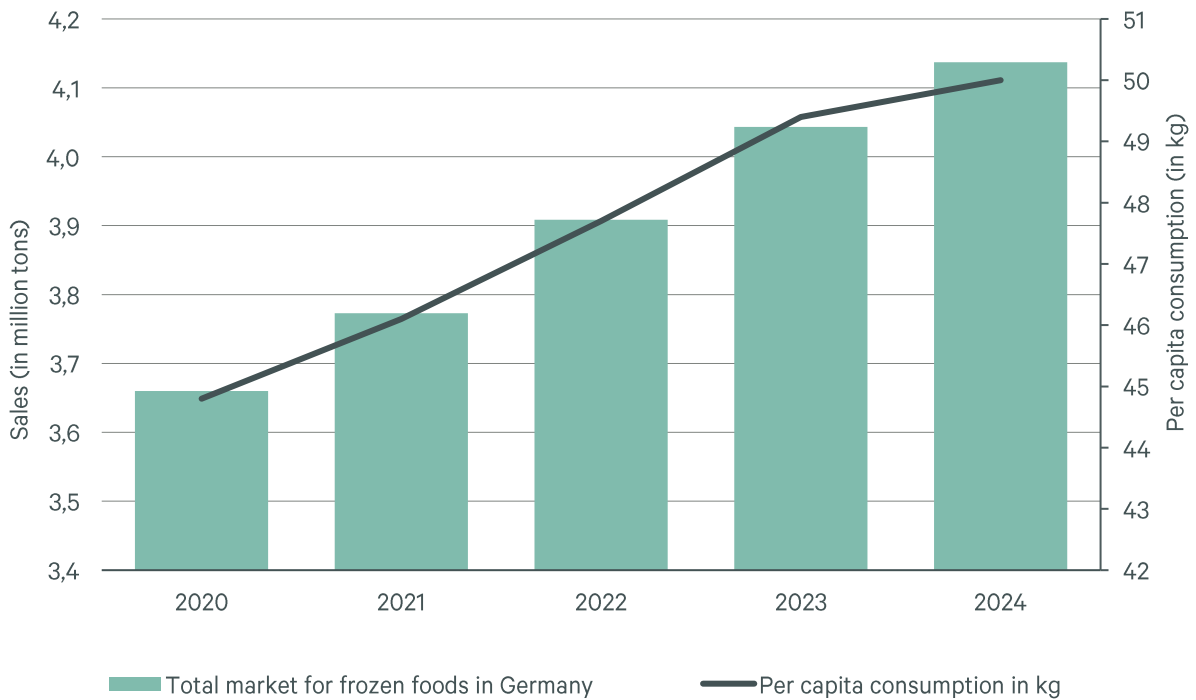
Growing health awareness is leading to increased consumer demand for fresh, unprocessed, high-quality foods and products that offer a high degree of flexibility. Convenience products such as ready meals and pre-cut salads are enjoying great and growing popularity, especially among working people, singles, and older people. There is also a trend toward frozen products with fewer additives and higher nutritional value, which manufacturers are also taking into account (and are advertising accordingly).

Per capita consumption of frozen food in Germany reached a new high in 2024 at 50 kilograms per person. Frozen pizzas are particularly popular, with over 395,000 tons sold. Other product groups such as potato products, fish, fruit, bread, and rolls are also recording steadily increasing sales figures.

Overall, the total market for frozen products grew by 2.3% to around 4.1m tons in 2024. There are many reasons for this increasing popularity: many consumers appreciate the practical handling, long shelf life, and quick preparation of convenience products, which minimize the time needed to prepare meals and can be easily integrated into everyday life without compromising on food quality.

An additional growth driver is the increasing demand for vegan and vegetarian frozen products. This product group reflects the growing awareness of sustainable and health-oriented nutrition. Despite a slight decline of just under 3% in 2024, interest in plant-based frozen foods remains high.

Figure 11: Sales and per capita consumption in the German frozen food market



Source: Association of German Cold Storage and Refrigerated Logistics Companies (Verband Deutscher Kühlhäuser und Kühllogistikunternehmen e.V., VDKL)

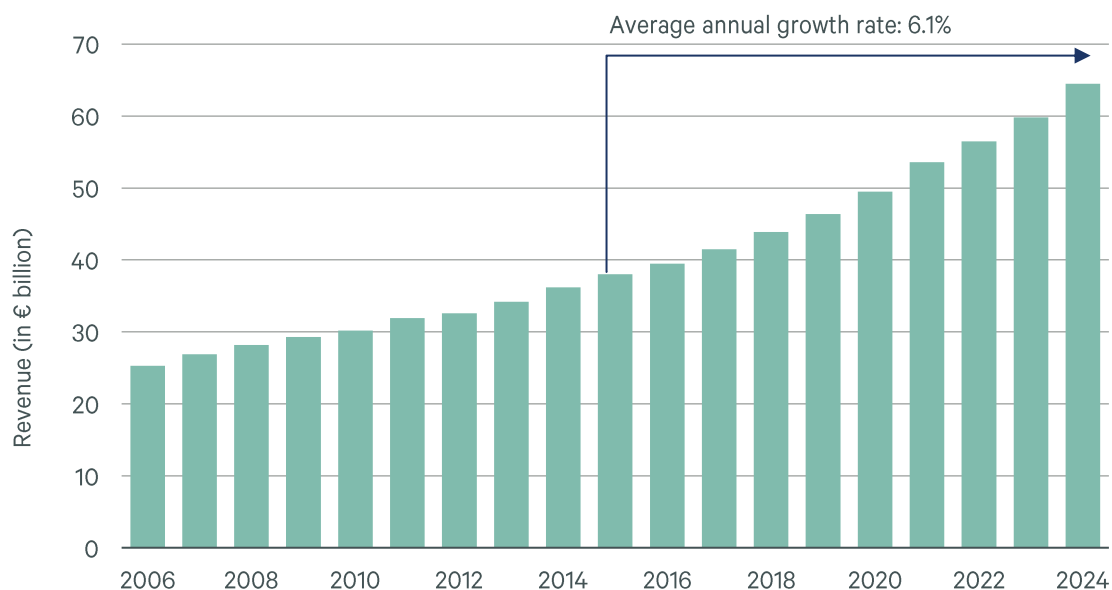
Demand – Pharmaceutical industry

Although the pharmaceutical sector accounts for only a small proportion of cold chain logistics capacity, it is of significant importance for a functioning healthcare system and a high quality of life for the population. The cold chain is crucial for ensuring the shelf life of pharmaceutical and medical products. Very strict requirements apply in particular to vaccines, medicines, and biopharmaceuticals, as well as blood reserves and substances for laboratory tests. Medicines that require refrigeration must always be kept cool (actively or passively), while medicines that require a cold chain may only be cooled actively. While the active cold chain enables continuous temperature control and recording, passive cooling uses insulation techniques to maintain the required temperature intervals, often with temperature sensors used throughout the supply chain to ensure quality.

Drug transports in the refrigerated segment (temperature range 2°C to 8°C) are steadily increasing – following the high global transport flows of vaccines in the wake of the coronavirus pandemic, which required ultra-low temperature freezers (ULT, down to -80°C), biopharmaceuticals are now particularly important, which have a rapidly growing market share. This is further reinforced by social developments in industrialized countries with aging populations and a corresponding increase in the number of cancer cases. Ensuring the cold chain for often global shipments consumes a lot of energy, resulting in a relatively large carbon footprint. In order to achieve its ESG goals, the pharmaceutical industry must focus on this area in particular, especially as the rise in gas prices and general inflation resulting from geopolitical and economic developments make new, greener solutions sensible from a balance sheet perspective.

Several large international logistics companies are continuing to expand their networks in this direction. In April of this year, DHL announced that it would invest around €2bn in DHL Health Logistics by 2030 (25% of which will be invested in EMEA), with a significant portion going toward the development of GDP-certified pharmaceutical hubs for temperature-controlled transport, the expansion of cold chain capacity at existing locations, and the purchase of new refrigerated and thermo vehicles.

Figure 12: Sales in the overall German pharmaceutical market



Source: IQVIA, CBRE Research

Investment market

Cold storage facilities, as part of the distribution and logistics subasset class, are still a niche product in the overall German warehouse and logistics investment market and are characterized by significant annual fluctuations in transaction activity. An annualized view of the market is therefore very volatile, which is why the cumulative results of the last ten years* (2015–2024) are used below.

Owner-occupiers play only a minor role on the buyer side in this market segment, but as sellers in sale-and-leaseback (SALB) transactions, they account for almost one-fifth of the investment volume, with users taking advantage of the respective market situation to release capital while maintaining location security. Investments were mainly made in existing properties, while only a marginal proportion went to projects as part of forward deals. The focus of the investments is generally more security-oriented and can be classified in the core and core-plus risk categories.

As is usual in the I&L segment due to space requirements, the geographical focus of investments is outside the top investment centers, among which only Hamburg plays a significant role as a logistics hub with a 10% share of the transaction volume. The federal states of Lower Saxony, in particular the Hanover region, Hesse, and Bavaria accounted for just under 50% of the investment volume since 2015.

Overall, investments were made primarily by international investors, mainly from the US, the UK, and Asia. The overall market saw investments in cold storage facilities, particularly through real estate funds, especially special funds. This underscores the relevance of cold storage logistics properties as an attractive investment product.

Figure 13: Key facts investment market for cold storage facilities in Germany from 2015 to 2024

Investment volume 2015-2024		Cold storage	Total distribution & logistics sector
Investment volume	Average Total	€0.2bn €1.8bn	€6.2bn €61.7bn
of which Top 7	Average	19%	15%
Investment strategy	Core Core-plus Value-added Opportunistic Owner-occupiers	74% 22% 2% 0% 1%	55% 22% 14% 7% 2%
Type of purchase	Stock Forward deal Development sale SALB	81 2 0 17	78 14 2 6
Portfolio share		85%	53%
International investors		57%	40%
Types of investors	Top 1 Top 2 Top 3	Asset/fund managers Open-ended real estate/special funds Private investors	Asset/fund managers Open-ended real estate/special funds Listed RE companies/REITs

* At the time of writing this report, no corresponding investment transactions had been recorded in 2025.

Source: CBRE Research

Investor landscape

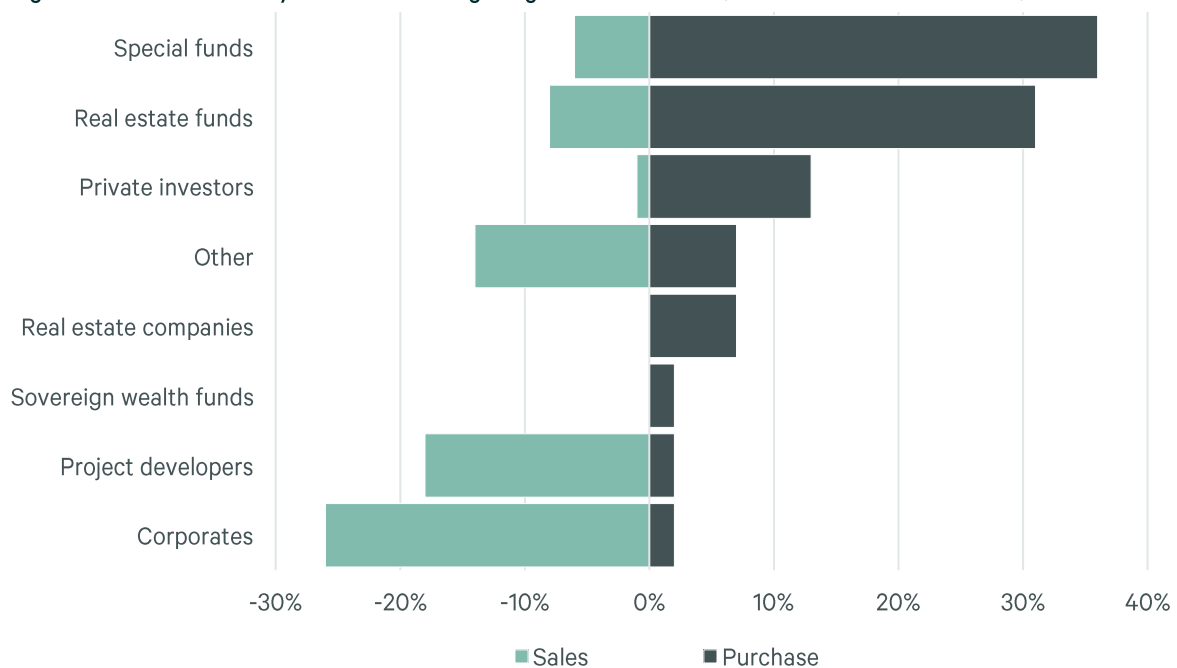
From an investor perspective, cold storage facilities are increasingly becoming an institutionalized niche product. Both as a standalone investment product and as a diversifying component within mixed portfolios, this subasset class offers interesting growth potential and will continue to gain in importance and attractiveness in the future due to the demand factors described above.

(Institutional) Real estate investors active in this segment focus on the development, ownership, and leasing of properties and spaces to tenants – primarily 3PLs specializing in cold storage, pharmaceutical companies, or food manufacturers and distributors. The leases are usually triple-net leases, offering investors stable long-term cash flows with contractually agreed adjustments, without having to bear operator risks such as e.g., fluctuations in capacity utilization and storage fees, labor costs, energy costs, and risks relating to service provision.

Owner-occupiers and vertically integrated operators also benefit from the increasing attractiveness of this investment product. Ownership of the properties and the additional assumption of operational operator risk result in a very high capital commitment. Within the framework of SALBs, capital can be released without having to give up the location – and the increasing interest on the part of (institutional) real estate investors in such properties is making these transactions increasingly possible.

In addition, the sellers are often project developers, such as Doblinger, which emerged from the Bayerische Gewerbebau AG, which was founded by Carl von Linde, a pioneer in refrigeration and deep-freezing of food. BEOS and Aurelis are also active in this segment, alongside other developers. On the buyer side, in addition to corporate investors such as Edeka, Nordfrost, etc., there are also international investment companies such as Blackstone, Garbe, and Tristan Capital.

Figure 14: Investor activity in the cold storage segment 2015–2024 (as the share of total volume)



Source: CBRE Research

Future-proof facilities

The ability to respond to future requirements and integrate technological innovations is becoming a decisive competitive factor for operators and developers of logistics real estate.

Cold storage facilities pose a particular challenge due to their specific requirements (including temperature control and hygiene guidelines). The supply of modern space is limited; due to highly differentiated user requirements and high construction costs, project development is hardly feasible on a speculative basis, and new properties are almost exclusively built to suit for specific users or for owner-occupancy. However, the value-added factors listed below can significantly enhance the value of existing buildings, making them more attractive to users and investors alike.

Figure 15: Value-adding factors for cold storage properties



Source: CBRE Research

ESG compliance

The demands placed on modern logistics properties are constantly increasing. Today's users expect not only functional storage space, but also increasingly technologically advanced and sustainable buildings. Future-proof warehouses must be compatible with the latest developments in automation and robotics, while also being flexible enough to accommodate different usage scenarios such as cross-docking, returns logistics, or refrigerated storage areas. ESG criteria are no longer a differentiating feature, but a market requirement – due to regulatory pressure and the clear expectations of investors, partners, and customers. Many ESG criteria are universal and applicable to all real estate asset classes; however, due to the special position of cold storage facilities in terms of environmental impact, ensuring food safety, and reducing food waste, as well as increasingly stringent environmental and social standards, these criteria are particularly relevant here and help to meet regulatory requirements and social demands and avoid legal risks for companies and operators.

Figure 16: Most relevant ESG criteria for cold storage facilities

E

- Energy-efficient construction and power generation (e.g., solar energy), low-carbon materials and certifications according to standards such as BREEAM, DGNB, or LEED are now key decision-making criteria for many companies when choosing a location. The facilities must also be able to reliably maintain constant temperature ranges even under extreme climatic conditions such as increasing heat events.
- In addition, the reduction of emissions is relevant, e.g., electrification of the vehicle fleet or the use of biofuels, as well as regular maintenance and inspection of refrigeration systems to minimize leaks, including refrigerant recovery, waste management, and certifications (e.g., FSC for packaging materials).

S

- The protection and support of employees is essential, as working in temperature-controlled warehouses places high physical demands on them. Companies are attempting to meet this challenge through the increased use of automation technologies (robotics, autonomous vehicles, voice-controlled picking systems, etc.).
- In addition, securing skilled workers is also essential, e.g., through training opportunities and other measures to retrain and develop employees in order to strengthen competitiveness.
- In addition, safety and hygiene standards must be maintained to ensure food safety.

G

- Digital traceability is becoming increasingly important, as modern warehouse management systems (WMS) enable seamless documentation of all goods movements – from delivery to storage to shipping – which is not only a decisive factor for food safety and quality management, but also for compliance with regulatory requirements and the avoidance of liability risks.

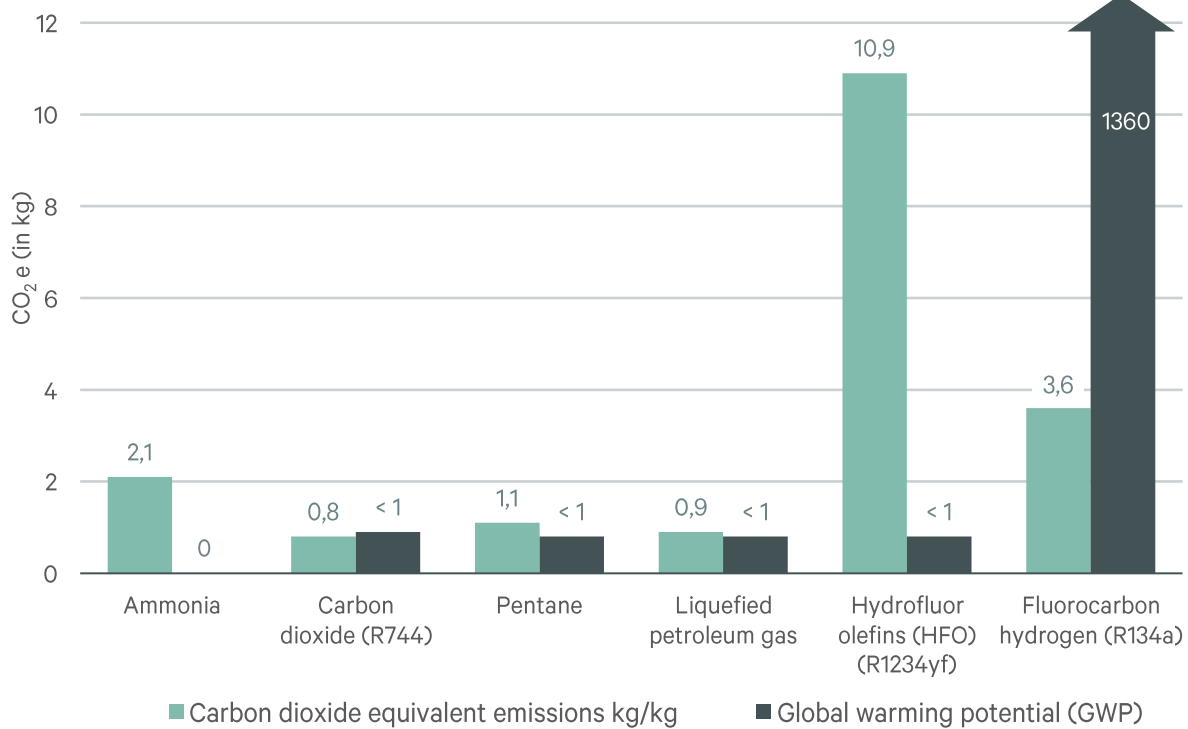
Source: CBRE Research

Optimization potential

Cold chain logistics is one of the most energy-intensive areas of logistics real estate and is increasingly becoming the focus of ESG criteria, as the high energy requirements for cooling, lighting, and operation result in a significant carbon footprint, but at the same time offer a wide range of optimization potential for reconciling ecological and economic goals. A key element here is the use of nature-identical refrigerants such as CO₂, hydrocarbons, ammonia, or water, which are more climate-friendly than the currently widely used hydrofluoroolefins (HFOs), which are considered a climate-friendly and – but only in terms of the ozone layer – environmentally friendly alternative to HFCs and CFCs, but produce trifluoroacetic acid (TFA) as a primary degradation product, which is one of the so-called forever chemicals and accumulates in the environment.

Photovoltaic systems on the roofs of cold stores offer additional potential for self-sufficient power supply, whereby, in combination with intelligent energy management systems, peak loads can be smoothed and operating costs reduced. In the long term, the entire cooling process should be thought of as part of a circular economy, which means that energy, materials, and processes are designed in such a way that they can be reused or recycled as completely as possible – an approach that makes sense not only ecologically but also economically. Another key to decarbonization is heat recovery, where the waste heat generated during refrigeration is not released unused into the environment, but is used to heat water or support other processes. Modern refrigeration machines with heat recovery enable almost complete utilization of the energy used by providing both cooling and heating.

Figure 17: CO₂ equivalent (CO₂e) emissions kg/kg



Source: Kauffeld, M.; Dudita, M.: Environmental impact of HFO refrigerants & alternatives for the future. Open Access Government, June 11, 2021, accessed on June 11, 2025, own representation



Contacts

Dr. Jan Linsin
 Managing Director
 Head of Research
jan.linsin@cbre.com

Jan Schwarze
 Director
 Team Leader Research
jan.schwarze@cbre.com

Anja Scholz
 Associate Director
 Research
anja.scholz@cbre.com

Philip Naumann
 Senior Analyst
 Research
philip.naumann@cbre.com

Kai F. Oulds
 Managing Director
 Head of Industrial &
 Logistics Leasing
kai.oulds@cbre.com

Rainer Koepke
 Managing Director
 Head of Industrial &
 Logistics Leasing
rainer.koepke@cbre.com

Tom Franke
 Senior Director
 Head of Logistics Investment
tom.franke@cbre.com

Kristine Kühn
 Director
 Valuation Advisory Services |
 Industrial & Logistics
kristine.kuehn@cbre.com

We would like to express our sincere thanks to Ali Can Akin Erul, working student, for his active support in the preparation of this report.

© Copyright 2025. All rights reserved. This report has been prepared in good faith, based on CBRE's current anecdotal and evidence based views of the commercial real estate market. Although CBRE believes its views reflect market conditions on the date of this presentation, they are subject to significant uncertainties and contingencies, many of which are beyond CBRE's control. In addition, many of CBRE's views are opinion and/or projections based on CBRE's subjective analyses of current market circumstances. Other firms may have different opinions, projections and analyses, and actual market conditions in the future may cause CBRE's current views to later be incorrect. CBRE has no obligation to update its views herein if its opinions, projections, analyses or market circumstances later change.

Nothing in this report should be construed as an indicator of the future performance of CBRE's securities or of the performance of any other company's securities. You should not purchase or sell securities – of CBRE or any other company – based on the views herein. CBRE disclaims all liability for securities purchased or sold based on information herein, and by viewing this report, you waive all claims against CBRE as well as against CBRE's affiliates, officers, directors, employees, agents, advisers and representatives arising out of the accuracy, completeness, adequacy or your use of the information herein.