

BAI Infrastructure Report Germany 2026

**Pathways for Institutional Capital into Municipal
Infrastructure and a Current Deep Dive into the
Portfolios of German Investors**

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Table of Contents

Executive Summary	5
1. Institutional capital in municipal infrastructure in Germany	7
1.1. Introduction: The federal government's investment initiative and the potential involvement of investors and asset managers in infrastructure transformation	7
1.2. Financing needs for municipal infrastructure	8
1.3. Market overview of institutional capital in municipal infrastructure	10
1.3.1. Asset managers' activities in municipal infrastructure by sector	11
1.3.2. Analysis of the risk-return profile of municipal infrastructure using credit default data	14
1.3.3. Summary: Market overview of institutional capital in municipal infrastructure	17
1.4. Barriers for asset managers investing in municipal infrastructure	17
1.4.1. Lack of strategies among asset managers as an obstacle	18
1.4.2. The risk-return profile of municipal infrastructure as a barrier	19
1.4.3. Further barriers - the structural Gordian Knot	21
1.4.4. Summary: Barriers to asset managers investing in municipal infrastructure	22
1.5. Practical approaches to increasing investment in municipal infrastructure	23
1.5.1. Political consensus on the role of private capital, planning certainty, and legal stability ...	23
1.5.2. Platform models, standardization, and mergers	24
1.5.3. Structuring models and investment structures	27
1.5.3.1. PPPs: Theory and the reality in Germany	27
1.5.3.2. SPVs and project companies	28
1.5.3.3. Hybrid capital and flexible instruments	30
1.5.4. Government investment and financing vehicles	30
1.5.4.1. Funding institutions as catalysts	31
1.5.4.2. Government risk-sharing instruments	32
1.5.5. Summary: Approaches for increasing investment in municipal infrastructure	34
2. A Deep dive into the infrastructure portfolios of German investors	36
2.1. The current state of infrastructure in German portfolios	36
2.1.1. Infrastructure Debt as a growth segment: Drivers, strategies, and investor logic	38
2.1.2. Infrastructure allocation by investor type	42
2.1.3. Reverse Home Bias: Low German capital in German Infrastructure so far	43
2.1.4. Summary: The current state of Infrastructure in German portfolios	46
2.2. Trends in infrastructure allocation among German investors	47
2.2.1. Trends and drivers of allocation adjustments	48
2.2.2. Renewable energy: Entry anchor under structural pressure	49
2.2.3. Summary: Trends in Infrastructure allocation among German investors	51
3. Summary and proposed solutions	52
Technical Appendix	54
We would like to thank:	55
About us	56

Figure 1: Breakdown of estimated investment needs of energy utilities through 2045 by sector. Source: PwC on behalf of KfW.	9
Figure 2: Investment needs of German municipal utilities by financing type. Source: PwC on behalf of KfW.	9
Figure 3: Asset managers active in the infrastructure sector: Do you invest in municipal infrastructure in Germany? Absolute figures. Source: BAI Member Survey 2025.	11
Figure 4: Asset managers active in the municipal infrastructure sector in Germany, by sector. Source: BAI Member Survey 2025.	12
Figure 5: Perceived investment backlog in German municipalities by sector. Source: KfW-Kommunalpanel 2025.	13
Figure 6: Corporate-level credit default rates in Germany, expressed as a percentage, for the overall economy, infrastructure as a whole, municipal infrastructure, and social infrastructure. Source: Creditreform Rating.	16
Figure 7: What are the reasons why (infrastructure) asset managers are not yet investing in municipal infrastructure in Germany? Source: BAI Member Survey 2025.	18
Figure 8: Schematic representation of the net IRR at the target fund level by investment focus for infrastructure funds. Source: Helaba Invest, Börsen-Zeitung, January 13, 2026.	21
Figure 9: The Gordian Knot of Structural Barriers to Private Capital in Municipal Infrastructure; Schematic representation of interrelated barriers, with the percentage of asset managers who cited each reason as a barrier in the BAI Member Survey 2025 shown in parentheses; Source: Author's own illustration.	22
Figure 10: Average share of alternative asset classes in the portfolios of German institutional investors. Source: BAI Investor Survey 2025.	37
Figure 11: Infrastructure allocation by institutional investor origin; Source: Macquarie for international data, BAI Investor Survey 2025 for Germany.	38
Figure 12: Why do you invest in infrastructure debt? Source: BAI Investor Survey 2025.	39
Figure 13: In which infrastructure debt strategies are you already investing and/or planning to invest? Source: BAI Investor Survey 2025.	40
Figure 14: Rating: Should You Invest in Investment-Grade or Non-IG Infrastructure Debt? Source: BAI Investor Survey 2025.	41
Figure 15: Fixed Versus Floating Interest Rate: How Do You Invest in Infrastructure Debt? Source: BAI Investor Survey 2025.	42
Figure 16: Alternative asset allocation of German institutional investors, with infrastructure equity and debt as components thereof. Source: BAI Investor Survey 2025.	43
Figure 17: Planned adjustments to infrastructure equity and debt allocations. Source: BAI Investor Survey 2025.	47

Deep Dives

Deep Dive 1: Social Infrastructure in the municipal sector – Tanja Volksheimer, NEXT Generation Invest	14
Deep Dive 2: An asset manager's platform model for municipal infrastructure – LBBW Asset Management	25
Deep Dive 3: A collaborative approach by public-sector investors for investments in municipal infrastructure	26
Deep Dive 4: PPPs, Joint Ventures, and Special Purpose Entities – Dr. Bernd Kreuter, Palladio Partners	28
Deep Dive 5: A municipal utility's perspective on investment models – Morris May, Stadtwerke Neumünster	29
Deep Dive 6: Experience with guarantees as risk-sharing instruments at the EIB – Heike Freimuth, EIB	33
Deep Dive 7: Infrastructure portfolio of a pension fund – Peter Herrmannsberger, Philips Pension Fund	37
Deep Dive 8: An insurance company's Infrastructure portfolio – Alexandra Graf, ALH Group	39
Deep Dive 9: Infrastructure allocation of a pension fund – Jens Hennes, Pension Fund of the North Rhine Chamber of Pharmacists	43
Deep Dive 10: Reverse Home Bias at a Pension Fund – Tobias Zahn, SOKA-BAU	44
Deep Dive 11: Investments in German Infrastructure from the perspective of a Fund-of-Funds Manager – Max Schönfelder – Real Assets, Helaba Invest	45
Deep Dive 12: Examples of investors with higher Germany allocations in infrastructure – ALH Group, Philips Pension Fund	46
Deep Dive 13: Drivers for expanding the Infrastructure allocation – Tobias Zahn, SOKA-BAU	48
Deep Dive 14: Negative electricity prices from an investor's perspective – Alexandra Graf, ALH Group	50

Executive Summary

The need for infrastructure investment in Germany, particularly in the municipal sector, remains urgent, despite the Special Infrastructure and Climate Neutrality Fund. Private capital is indispensable for the transformation of the German economy toward sustainability and future viability. Based on survey data and expert interviews, this report provides a comprehensive update on the role of institutional capital in the infrastructure sector in Germany.

Part 1 examines the role that institutional capital currently plays in municipal infrastructure—and arrives at a key finding: **The problem is not a lack of willingness to invest, but rather a Gordian Knot of structural inefficiencies.** The report offers potential solutions for cutting through this knot.

Against this backdrop, **Part 2** focuses on the portfolios of German institutional investors and highlights the role that infrastructure investments currently play.

Part 1

According to KfW, the financing gap for German energy utilities alone amounts to 346 billion euros by 2045—with a total investment need of 535 billion euros for electricity, gas networks, and heat supply. And that is only part of the investment need in municipal infrastructure, with the additional investment backlog in the core budgets of local governments. Traditional municipal financing is reaching its limits in light of the enormous capital requirements for the digital and ecological transformation, and the **federal government will not be able to cover the total investment need. Private capital from institutional investors, such as insurance companies and pension funds, is fundamentally available** to close this gap and, in theory, is perfectly suited for this purpose due to its long investment horizon. Asset managers play a key role in this process: they structure assets and balance the interests of investors and municipalities.

The results of the BAI Member Survey and the expert interviews provide an overview of the use of institutional capital in municipal infrastructure and identify key obstacles as well as potential solutions. To date, only a small number of asset managers are active—primarily on a project-by-project basis and concentrated in a few subsectors.

The majority of infrastructure asset managers have not yet addressed municipal infrastructure as part of an independent investment strategy.

Reasons for this include sector-focused, internationally diversified infrastructure strategies, as well as the complex structures of municipal enterprises with numerous stakeholders and the cross-subsidy principle of municipal utilities. Consequently, **from an investor's perspective, market-oriented segments such as power generation or district heating networks are considered particularly attractive.** However, the growing interest of institutional investors in the domestic market is leading an increasing number of asset managers to strategically engage with this sector.

An analysis of credit default rates shows that companies in the municipal infrastructure sector have lower rates than the overall economy and are even below the already defensive infrastructure benchmark. **This underscores the high resilience of municipal assets, which makes the sector potentially very attractive to investors.** At the same time, the figures explain the low credit risk premiums and shift the **focus to illiquidity and complexity premiums.**

Furthermore, a risk-return ratio perceived as unattractive compared to other infrastructure sectors or foreign assets is viewed as a major barrier to investment. The challenge lies in particular in a mismatch between institutional investors' return expectations and the earnings potential of muni-

cial infrastructure projects, as well as in the market's historically low efficiency. Small-scale project structures lead to high complexity and make it difficult to comply with investment standards, which reduces both access to investable projects and the attractiveness of the risk-return profile. **Overcoming this “Gordian Knot” requires appropriate strategies on the part of asset managers, as well as greater standardization and bundling of municipal infrastructure projects.** Drawing on expert opinions and real-world examples, three potential solutions are discussed. A fundamental prerequisite is **political consensus on the importance of private capital, as well as reliable planning and legal certainty** throughout the entire investment period, regardless of political power dynamics.

Platform models and alliances between asset managers and institutional investors demonstrate how standardization reduces complexity and balances competing interests. There is no “silver bullet” for investing in municipal utilities; rather, there is a set of complementary structures—ranging from joint ventures to SPVs to hybrid capital, depending on the asset type and municipal requirements—accompanied by early, transparent communication with citizens.

Government support instruments can play a complementary role where the market alone does not create sufficient incentives: through the efficient use of the existing funding landscape, the pooling of resources from institutions such as the EIB and KfW, and internationally proven **risk-sharing instruments such as first-loss structures—calibrated in such a way that the yield premium over liquid bonds is maintained.**

Part 2

Given German investors' fundamental willingness to invest, **Part 2** takes a look at the current state of their infrastructure portfolios:

As data from the BAI Investor Survey and expert interviews show, the infrastructure asset class continues to enjoy great popularity. **However**, with an average allocation of **5.6% (equity and debt)**, **Germany lags nearly 50% behind Canada, the infrastructure pioneer.** There, the average allocation currently stands at 10.1%—driven in particular by pension funds.

The environment for renewable energy is currently considered challenging, while repowering, battery storage, and digital infrastructure are gaining in importance.

The infrastructure allocation is most pronounced among insurance companies, driven by their already high weighting of infrastructure debt.

Infrastructure debt benefits particularly from diversification advantages and an attractive risk-return profile, with conservative core/senior strategies and broad diversification across ratings, structures, and yield profiles dominating.

1. Institutional capital in municipal infrastructure in Germany



- *What developments are taking place in the municipal infrastructure sector with regard to institutional capital?*
- *What barriers exist to investment in municipal infrastructure?*
- *What solutions are available to increase investment in municipal infrastructure with the participation of institutional investors?*

1.1. Introduction: The federal government's investment initiative and the potential involvement of investors and asset managers in infrastructure transformation

The issue of the enormous need for infrastructure investment in Germany is now widely known and extensively discussed. The reasons for this are, on the one hand, the need for ecological and digital transformation to make the German economy fit for the future, and on the other hand, the investment backlog of recent years. Up to 5 trillion euros are estimated to be needed for the ecological transfor-

mation and the legally binding goal of climate neutrality in Germany by 2045.¹ In addition, existing infrastructure has been severely neglected over the past two decades, requiring catch-up investments.² Given that the investment needs exceed Germany's current GDP, it is not realistic to expect the government to cover these costs entirely on its own.

The German federal government has fundamentally recognized the importance of private capital for infrastructure transformation. The coalition agreement ("Verantwortung für Deutschland"/"Responsibility for Germany") strongly emphasizes the importance of private capital for future investments. In this context, the federal government announced large-scale investment initiatives, including in the areas of startups and small and medium-sized enterprises (SMEs), infrastructure, and transformation and innovation. Previous regulatory and tax barriers to investments by institutional investors via funds have been largely removed by the Standortfördergesetz („Location Promotion Act“) and the Fondsrisikobegrenzungs-gesetz („Fund Risk Limitation Act“)³. However, the debt-financed Special

¹ Cf. KfW, Oct. 7, 2021.

² Wirtschaftsdienst 2022.

³ AIFs as a Success Factor for the Deutschlandfonds: A Key Role in Mobilizing Private Capital, Frank Dornseifer, Börsen-Zeitung supplement, April 24, 2026

Infrastructure and Climate Neutrality Fund—which was passed by the previous Bundestag—has faced various criticisms. It is criticized for being repurposed, serving merely as a vehicle for reallocating funds while failing to drive additional infrastructure investment.⁴ Furthermore, despite high hopes beforehand, it has so far provided for virtually no involvement of private capital. Only under the State and Municipal Infrastructure Financing Act (LuKIFG), which allocates 100 billion euros to the states, would public-private partnerships (PPPs) be explicitly eligible for funding⁵, which would enable the combination of public and private capital. So far, however, market participants have placed little hope in this element.

In addition, the Deutschlandfonds serves as the umbrella structure for various federal financing initiatives, with the goal of leveraging private capital for energy infrastructure, small and medium-sized enterprises (SMEs), and start-ups, among other areas. Approximately 30 billion euros in government guarantees, sureties, and equity investments are being made available to stimulate investments of up to 130 billion euros,⁶ although the lack of involvement of institutional investors through asset managers and alternative investment funds (AIFs) has drawn criticism.

At the same time, market participants such as associations, institutional investors, asset managers, and municipal representatives — independent of the government — are discussing various possible approaches to attracting more institutional capital to municipal infrastructure. The views of German institutional investors indicate that Germany does not fundamentally have a capital problem with regard to the infrastructure transition, but rather an

efficiency problem in mobilizing capital. This report aims to provide an overview, which, however, should necessarily be understood as only a snapshot of the current debate.

1.2. Financing needs for municipal infrastructure

The financing needs for infrastructure in Germany and the challenge of involving private capital are particularly high at the municipal level. According to data from the Federal Statistical Office, the aging of the capital stock is more pronounced at the municipal level compared to federal and state infrastructure.⁷ The KfW Municipal Panel 2025 identifies a structural investment backlog in municipal infrastructure totaling 215.7 billion euros (at current prices).⁸ In addition to the municipal investment backlog, rising social spending poses a burden, and cities are warning of a financial collapse⁹. The German Association of Cities views the Special Infrastructure and Climate Neutrality Fund merely as a positive signal that enables the implementation of individual projects and alleviates short-term bottlenecks; however, without parallel structural changes, it will not be able to permanently resolve the problems.¹⁰

It should be noted that the figure of 215.7 billion euros from the KfW Municipal Panel refers to the accumulated investment backlog and primarily to the core budgets of municipalities. Heating networks and energy supply in Germany, on the other hand, are predominantly operated by legally independent municipal utilities. Accordingly, the financing needs of German municipal utilities must be considered separately. The energy transition, with the expansion of grids, district heating, and renewable energy, as

⁴ *Investment Funds: Every Second Euro Is Misused*, IW Cologne, November 10, 2025.

⁵ *Municipal Infrastructure Financing Act: Billions in potential for infrastructure projects remain untapped*, GDV, October 9, 2025.

⁶ *Federal Ministry of Finance*, 2025.

⁷ Markus Demary, Thomas Puls, Thilo Schaefer: *Strengthening Infrastructure—More Efficient, Faster, and More Cost-Effective with PPPs, Potential for Public Procurement via PPPs*, IW on behalf of the GDV, 2026, p. 10.

⁸ *KfW Municipal Panel 2025*.

⁹ *A Disastrous Trend: Municipal Social Spending Is Rising Ever Faster*, *Städtetag aktuell* 1|2026, February 5, 2026.

¹⁰ *Cities are on the brink of financial collapse*, *Städtetag aktuell* 1|2026, February 5, 2026.

well as digitalization, is creating, in addition to the accumulated investment backlog, a significant additional need for investment. According to a recent study conducted by PwC on behalf of KfW, the total investment needs of German municipal utilities and energy supply companies through 2045 amount to 535 billion euros. Heat generation accounts for 40% of the total investment required (Figure 1). The remaining portion is needed for grid expansion, with the study indicating that electricity distribution grids require significantly more investment from municipal utilities than heating networks.

Breakdown of Estimated Investment Needs for Energy Utilities Through 2045

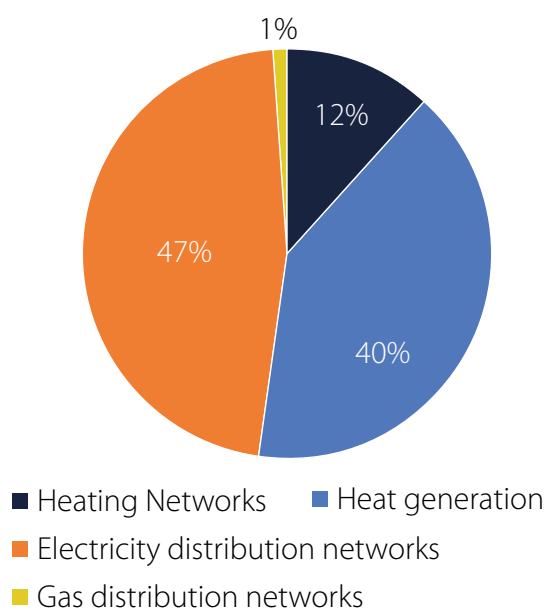


Figure 1: Breakdown of estimated investment needs of energy utilities through 2045 by sector. Source: PwC on behalf of KfW.

There is a financing gap of 346 billion euros¹¹ that cannot be covered by internal financing or newly received grants in the form of subsidies or construction cost subsidies. This breaks down into 299 billion euros in debt financing needs and 47 billion euros in equity financing (Figure 2).

Investment Needs of German Energy Utilities and Municipal Utilities Through 2045 (in billions of euros)

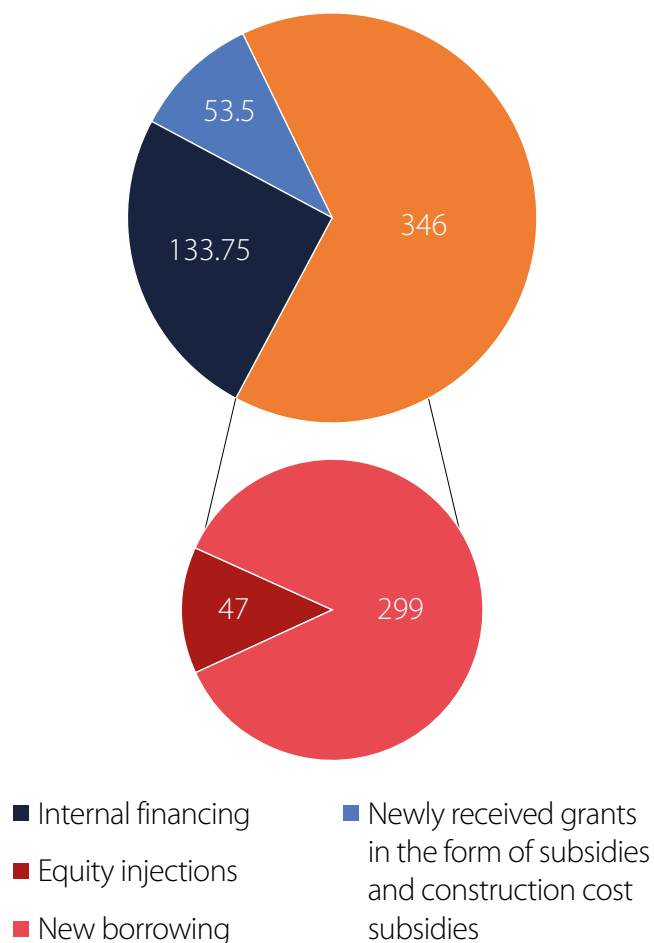


Figure 2: Investment needs of German municipal utilities by financing type. Source: PwC on behalf of KfW.

The data highlights the high financing needs of municipal utilities, both in terms of equity and debt. In the most recent BDEW municipal utility study, 92% of the municipal utilities surveyed stated that they expected necessary investments to require additional support from external financing instruments¹².

Traditional financing through the budget and subsidized loans is increasingly insufficient. Furthermore, the investment needs cannot be met by the banking sector alone.

¹¹ Dr. Stefanie Brilon, Anke Brüggemann: KfW Research Focus: Economics—Financing Needs for the Regional Energy and Heating Transition from the Perspective of Energy Utilities, No. 519, November 10, 2025.

¹² BDEW 2026 Municipal Utilities Study on Financing the Energy Transition Infrastructure, June 9, 2026.



Morris May, Managing Director of Stadtwerke Neumünster (SWN).

Morris May, Managing Director of Stadtwerke Neumünster (SWN), makes

it clear that the high equity requirements of long-term infrastructure investments—

for example, in the fiber-optic sector—are becoming a key

financial challenge for municipal utilities. Financing through traditional bank loans has its limits, as banks primarily provide debt capital with relatively short maturities, and long-term infrastructure investments weigh on municipal utilities' balance sheet ratios and tend to worsen credit terms. Against this backdrop, the involvement of equity capital from investors is crucial to securing better financing terms.

Data and interviews show that a significant portion of German municipal utilities are structurally undercapitalized. This highlights the need for standardized, transparent equity instruments that can be accepted and valued as an integral part of overall financing structures.

This is not necessarily about the fundamental availability of debt capital, but rather about the terms on which it is available to municipal utilities. The virtually automatic access to very long-term, low-cost financing, as seen in past decades, is no longer a given, and according to stakeholders, the problem is likely to intensify further in the course of the transformation.

Summary: Financing needs in municipal infrastructure

- Investment backlog in German municipalities, with current investment needs estimated at 215 billion euros.
- Additional investment needs of municipal utilities in the wake of the energy transition, estimated at 535 billion euros, with a financing gap of 346 billion euros in equity and debt.
- Financing through traditional bank loans is reaching its limits, which increasingly requires debt financing involving institutional investors and equity investments to improve capital adequacy.

1.3. Market overview of institutional capital in municipal infrastructure

- *What developments are taking place in the municipal infrastructure sector with regard to institutional capital?*

Despite general interest, the high financing needs in the municipal infrastructure sector — both in terms of equity and debt — have not yet been accompanied by significant involvement from institutional investors.¹³ In data from the KfW Municipal Panel on the financing mix for municipal investments, investments made with private capital are not listed separately and are categorized under “Other” at 3%.¹⁴

To gain an overview of current market developments, we surveyed the asset managers among BAI members in the BAI Member Survey 2025 to find

¹³ BAI Infrastructure Report Germany 2025, pp. 19–22.

¹⁴ KfW Municipal Panel 2024, p. 15.

out who is already investing in the municipal infrastructure sector in Germany or plans to do so. Of the 81 asset managers who answered the question, 21 indicated that they are already active in this sector, and another 8 plan to enter the market (Figure 3).

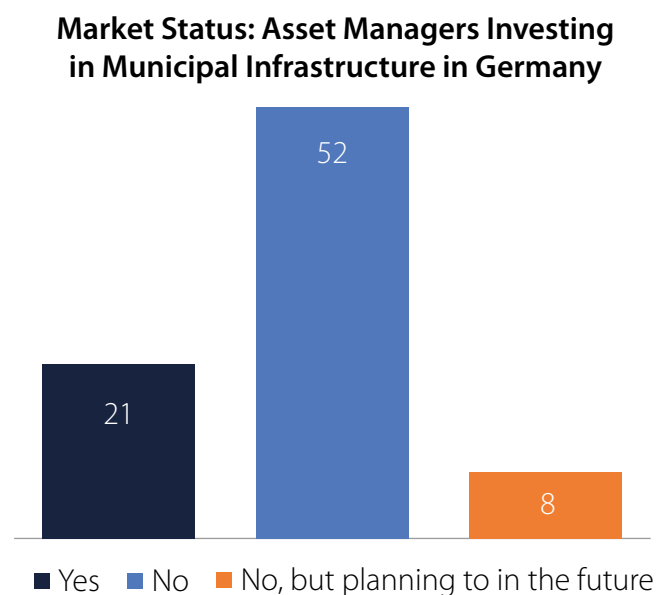


Figure 3: Asset managers active in the infrastructure sector: Do you invest in municipal infrastructure in Germany? Absolute figures. Source: BAI Member Survey 2025.

The figures show that a significant number of players are already active in the municipal infrastructure sector in Germany. However, investments to date have been made primarily on a project-by-project basis rather than on a portfolio basis. Furthermore, the surveyed asset managers confirm that municipal actors are generally open to investments by institutional investors. At the same time, they cite specific regulatory and structural barriers.

According to the BAI Investor Survey, the majority of German institutional investors invest in infrastructure equity and debt through funds, while direct investments play only a very minor role.¹⁵ From the perspective of the investors surveyed, assets in the municipal infrastructure sector must be made more investable through professional funds. Asset managers play a crucial role as an interface between

investors and government actors in the process of increasing the involvement of institutional capital in municipal infrastructure and are also responsible for structuring and monitoring assets.



Markus Schmidt,
Head of Business
Development Infrastructure,
INTREAL

Markus Schmidt, Head of Business Development Infrastructure at INTREAL,

confirms that, in his experience, investors are generally very open to municipal infrastructure investments, but that this openness is contingent on practical implementation

conditions. Many investors have signaled a willingness to invest even at moderate returns in the range of about 5% to 9%, particularly when additional factors such as a regional connection or positive ESG impacts come into play. At the same time, he sees the central challenge not so much on the demand side, but rather in structuring suitable investment vehicles. In particular, the complexity of collaborating with municipalities and political stakeholders complicates the launch of such funds and access to suitable assets.

1.3.1. Asset managers' activities in municipal infrastructure by sector

Asset managers active in the municipal infrastructure sector often exhibit a high degree of specialization and operate selectively in specific sectors. In the BAI Member Survey 2025, 85% of asset managers active in municipal infrastructure in Germany stated that they invest in the heating and energy infrastructure sector (local grids, local/district heating, etc.) (Figure 4). Digital infrastructure, such as fiber optics, ranks second in terms of importance.

¹⁵ Cf. BAI Investor Survey 2024, p. 16.

Other sectors, such as municipal transportation, social infrastructure, or water/wastewater, have so far been addressed by only a very small number of

asset managers in Germany. Education and sports/culture remain absolute niches.

Investments in Municipal Infrastructure by Sector, German Asset Managers

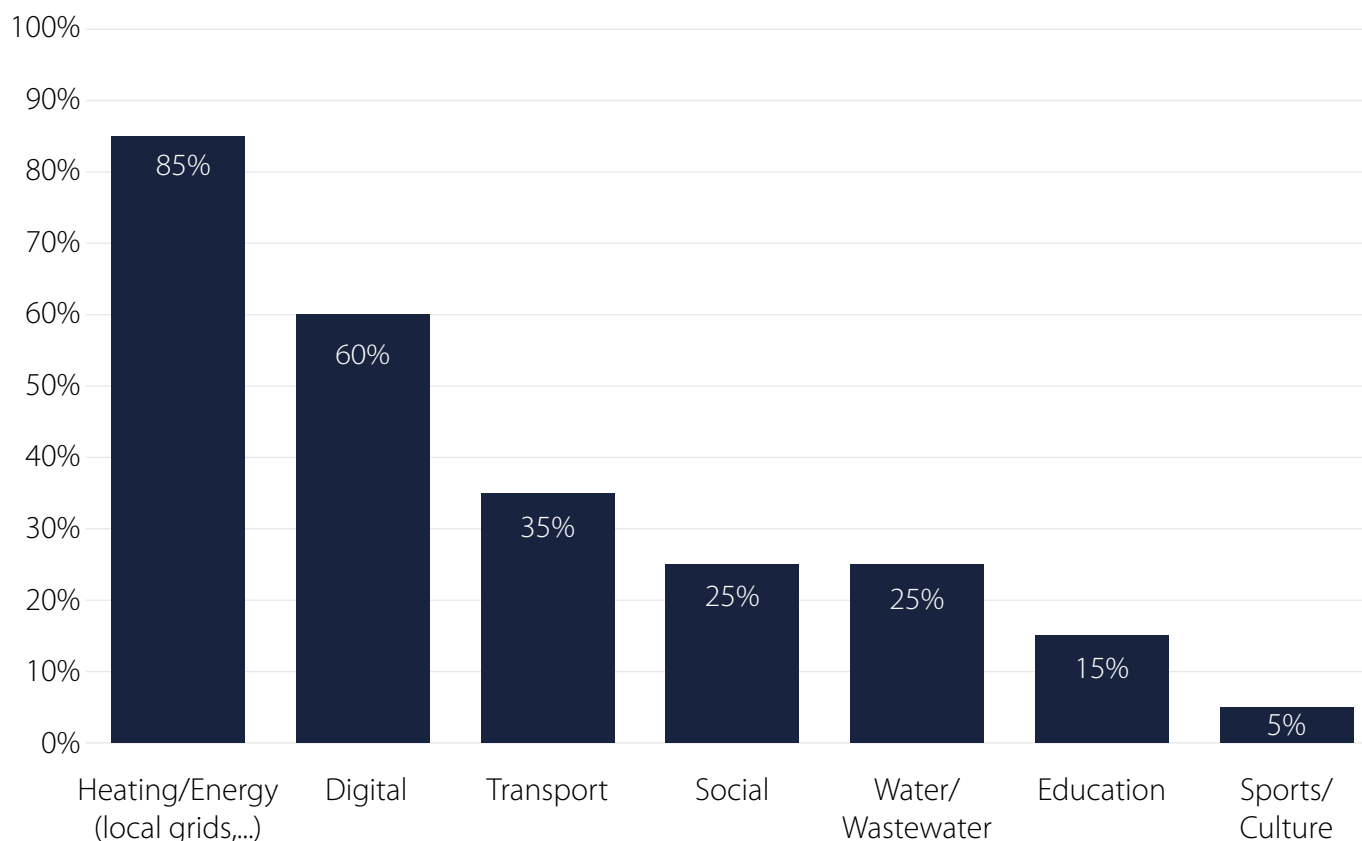


Figure 4: Asset managers active in the municipal infrastructure sector in Germany, by sector. Source: BAI Member Survey 2025.



Dr. Bernd Kreuter,
Managing Partner,
Palladio Partners

Regarding potential sectors, **Dr. Bernd Kreuter of Palladio Partners** argues that investments in municipal infrastructure are only viable in those sectors that exhibit a sustainable risk-return profile.

Particularly suitable are areas such as fiber optics, data centers, and battery storage, which can be implemented in cooperation with municipal utilities and offer suitable investment opportunities due to their high capital requirements. In contrast, many smaller distribution grids are of little appeal to external investors, as they are heavily operations-driven, closely integrated with municipal utilities, and characterized by low investment volumes. Looking ahead, he also sees potential in

the heating sector, particularly in networks and large-scale heat pumps, but points out the long implementation times and high structural complexity involved.

The sectoral breakdown of investments by German asset managers in municipal infrastructure in Germany reveals a mismatch with capital requirements by sector. The €346 billion financing gap faced by municipal utilities for heat generation, electricity, and heating networks (see [Figure 1](#)) does indeed highlight the enormous investment needs in the heating and energy sector, which have so far been largely overlooked by institutional investors. However, particularly with regard to the accumulated investment backlog in municipalities' core budgets, there is a need for investment in numerous other

areas where asset managers — who have hardly been surveyed to date — are active. The KfW Municipal Panel 2025 breaks down the investment backlog of German municipalities by sector (Figure 5)¹⁶. The total of 215,7 billion euros listed represents a significant amount, accounting for approximately 40% of the investment needs of municipal utilities. The largest single item in terms of the municipalities' investment backlog is schools, accounting for 31.5%. The social infrastructure sector — which includes not only schools but also daycare centers, sports, culture, and health care — accounts for nearly half of the perceived investment backlog of German municipalities and can be estimated at approximately 103 billion euros.

Perceived Investment Backlog in German Municipalities by Sector

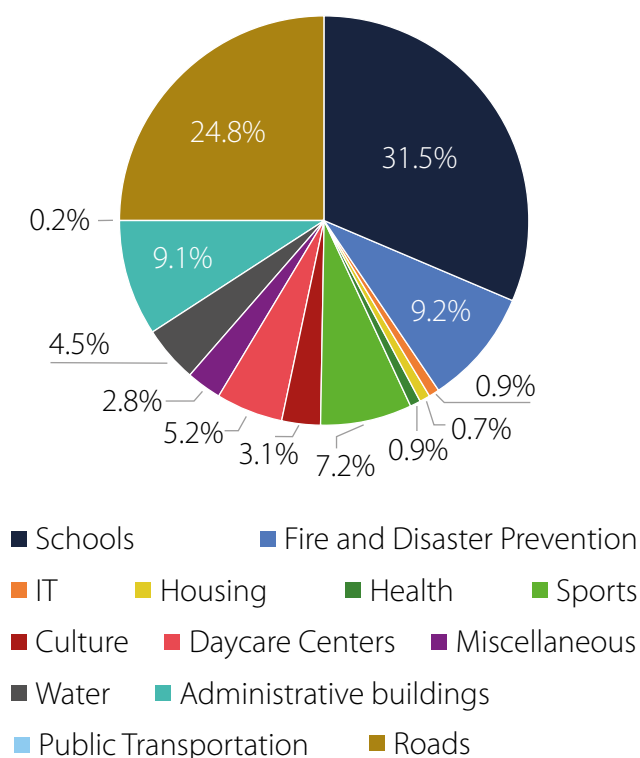


Figure 5: Perceived investment backlog in German municipalities by sector. Source: KfW-Kommunalpanel 2025.

A significant proportion — just over 50% — of German investors who invest in infrastructure stated in the 2024 BAI Investor Survey that they also invest in social infrastructure. It should be noted, however, that these investments are mostly made through

global funds,¹⁷ and that social infrastructure is still not well established as an asset class in Germany, as illustrated by the data on asset managers' activity in Germany (see Figure 4). This is due in no small part to reservations regarding private investment in the social sector.



¹⁶ KfW Municipal Panel 2025, p. 18.

¹⁷ BAI Infrastructure Report Germany 2025, p. 10.

Deep Dive 1: Social Infrastructure in the municipal sector - Tanja Volksheimer, NEXT Generation Invest



Tanja Volksheimer,
Managing Director,
NEXT Generation Invest

Tanja Volksheimer of NEXT Generation Invest emphasizes that it is particularly important to highlight positive examples of investments in social infrastructure in order to overcome existing reservations. In her view, these reservations remain pronounced, both among the general public and at the political level, particularly regarding the involvement of private capital. However, through targeted advice—for example on contract drafting—municipalities could leverage their strong creditworthiness to create framework conditions that make investments attractive and secure for both sides. Private investors are generally willing to finance such projects and thereby help close gaps in public funding. Successful flagship projects and active communication about them could also help further reduce prejudices and strengthen acceptance of investments in social infrastructure.

1.3.2. Analysis of the risk-return profile of municipal infrastructure using credit default data

Municipal assets typically feature a long-term useful life, stable demand, and distribution-oriented cash flows. The characteristics of municipal assets, such as the risk-return ratio and credit default rates, are crucial for the systematic analysis of the sector. Data from Creditreform Rating on credit default rates of companies in the municipal infrastructure sector serve as a proxy for approximating the risk-return profile of municipal infrastructure as an asset class. With regard to the risks associated with infrastructure debt, default rates provide a direct indicator of credit risk. At the same time, however, they are also relevant as a proxy for the equity sector, as they describe the stability of the respective business model. Using WZ codes, companies were assigned to the sectors of “kommunale Daseinsvorsorge” (municipal public utilities/services) or “kommunale Infrastruktur” (municipal infrastructure), and a default rate benchmark was established on this basis¹⁸. The benchmark

included only companies whose operations can be clearly classified as municipal infrastructure. Companies in the electricity and gas generation sectors can, in some cases, depending on the owner, be classified as municipal infrastructure. However, only about one-third of consumers currently purchase electricity from municipal producers such as municipal utilities.¹⁹ A similar picture emerges for natural gas. Due to the lack of clear demarcation and the potential overlap with large energy conglomerates, these two sectors are not included in the benchmark for municipal infrastructure. By contrast, approximately 90% of the heating and water sector is under municipal control.²⁰

The data show that credit default rates in the municipal infrastructure sector have remained within a range of approximately 0.7 to 1 since 2017, and thus consistently well below the rate for the economy as a whole (Figure 6). Since around 2022, a significant increase — or, in a historical context, a normalization — of default rates has been observed across the economy as a whole.²¹ However, the increase in

¹⁸ Cf. Technical Appendix.

¹⁹ Simon Kucher 2026.

²⁰ Statista.

²¹ Cf. Creditreform Default Study – Default Rates in the German Economy, March 12, 2026, p. 11.

default rates in the municipal infrastructure sector was less than half as pronounced as in the overall economy. The fundamentally lower default rate of municipal infrastructure companies in Germany can be attributed to structural factors. Sectors of municipal public services, such as waste management, electricity, and gas distribution, are highly capital-intensive, have very inelastic demand, and operate in a quasi-monopolistic market. Furthermore, partial public ownership and cross-subsidy structures can provide an additional layer of stability.

Another point of comparison is the cross-sector benchmark for credit defaults in the infrastructure sector in Germany as a whole, as reported by the Creditreform Infrastructure Monitor²². This benchmark comprises the five sub-sectors “Digital,” “Energy,” “Health & Social,” “Transport,” and “Utilities.” This benchmark also shows lower default rates than the overall economy throughout the entire observation period. Despite the current stressful environment regarding credit defaults, the default rate in the infrastructure sector stands at 1.17%, significantly below the economy-wide rate of 1.88%, though slightly higher than that of municipal infrastructure at 1.00%. The defensive characteristics that account for the comparatively higher resilience of infrastructure relative to the economy as a whole are correspondingly particularly pronounced in municipal infrastructure. Furthermore, the figures from the Creditreform Infrastructure Monitor reveal widely diverging resilience profiles depending on the sector. “Energy” and “Utilities”, the two sectors with the greatest overlap with companies in the municipal public services sector, show stable default rates and significantly shape the defensive nature of the asset class.

Electricity supply exhibits a very stable risk profile with limited cyclical fluctuations. According to Credit-

reform Rating, volatility in credit defaults in the gas supply sector was slightly higher, though still well below the overall benchmark. Stability in the utilities sector is characterized by high barriers to market entry and regional market structures in waste management, water, and wastewater management. Compared to the energy sector, the pressure for transformation is lower here.



Municipal infrastructure thus offers potential investors a particularly high degree of stability within the already resilient infrastructure asset class. The sector has attractive characteristics such as a potential hedge, especially during difficult market phases.

However, the flip side of the comparatively lower risks in the municipal infrastructure sector is that this also results in comparatively low credit risk premiums for potential investors. From an investor’s perspective, illiquidity premiums and complexity premiums — particularly when financing is directed not exclusively toward existing infrastructure but also toward transformation projects — represent the major drivers of returns that justify the yield premiums of municipal assets compared to liquid bonds.

²² Creditreform Infrastructure Monitor, May 22, 2026.

Corporate Default Rate by Sector

Corporate-level credit default rates in Germany, in percent

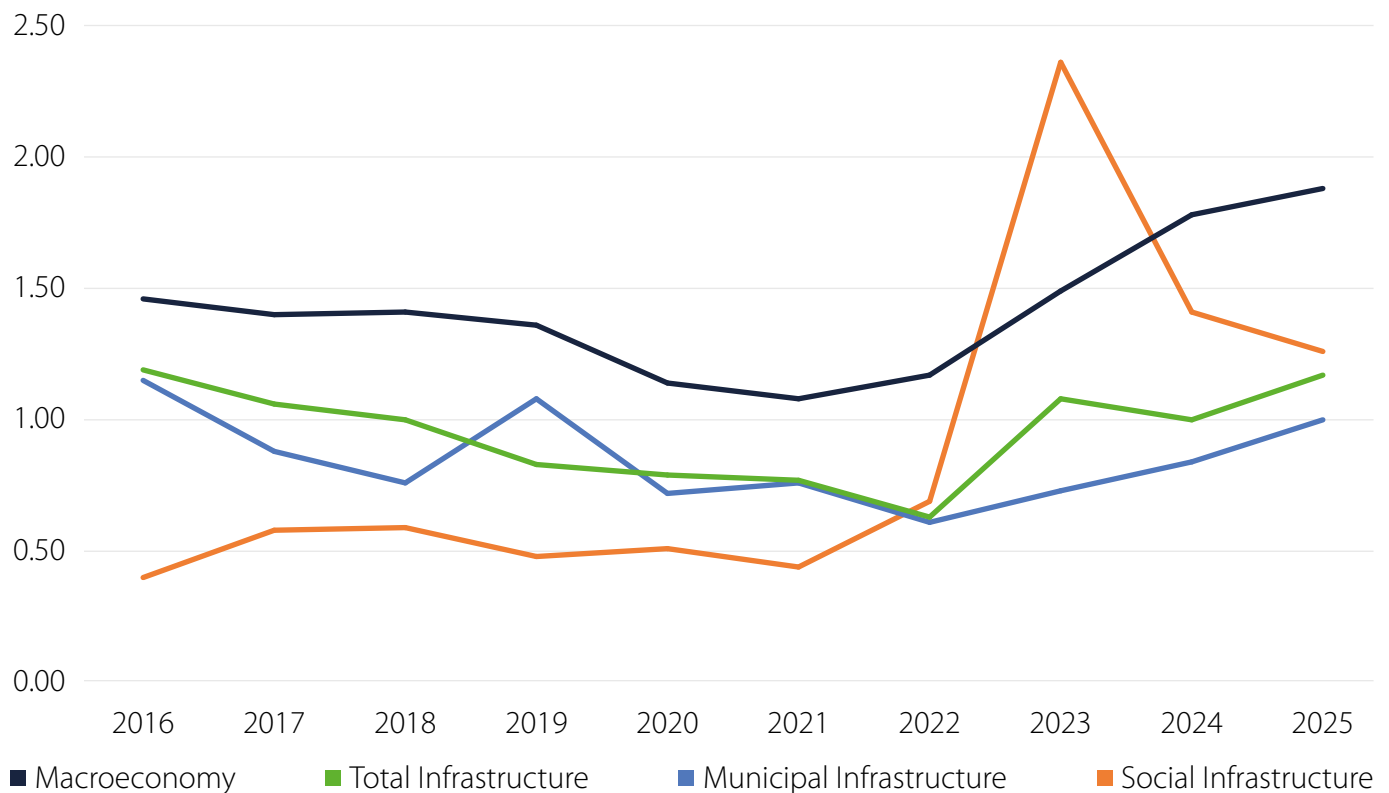


Figure 6: Corporate-level credit default rates in Germany, expressed as a percentage, for the overall economy, infrastructure as a whole, municipal infrastructure, and social infrastructure. Source: Creditreform Rating.

Side Note: Social Infrastructure; see also Deep Dive 1:

The social infrastructure sector²³ plays a special role. The underlying companies are partly municipally owned, but some have already been privatized. Until 2021, default rates in social infrastructure remained significantly lower than those in municipal infrastructure (Figure 6). However, inflation resulting from Russia's war of aggression in Ukraine has frequently caused companies in the social infrastructure sector, such as hospitals, to face financial difficulties.²⁴

The data shows a sharp rise in default rates, peaking in 2023 — particularly among nursing homes — followed by a gradual return to normalcy. Operating cost dynamics are a key driver here. Higher personnel, energy, and financing costs created pressures, while compensation and refinancing structures could only be adjusted to a limited extent or with a time lag. Consequently, social infrastructure is also exposed to significant operational risks and does not constitute a pure core asset. However, the underlying demand for social infrastructure services remains very stable. An efficient market with appropriate credit risk premiums is therefore crucial for attracting more private capital to the social infrastructure sector.

²³ Cf. Technical Appendix.

²⁴ FPS Guide – Hospitals in Crisis, 2023.

1.3.3. Summary: Market overview of institutional capital in municipal infrastructure

- The substantial financing needs for municipal infrastructure in Germany have so far been met only to a limited extent by institutional investors.
- Asset managers play a key role as intermediaries, and only a small number are active in this sector.

Activities of asset managers in municipal infrastructure by sector

- To date, investments have been predominantly project-based and concentrated on a few, particularly suitable segments.
- Mismatch in capital demand by sector: asset managers already active in the sector focus primarily on heating and energy, while other sectors — despite a significant investment backlog — are still largely neglected.

Analysis of the risk-return ratio of municipal infrastructure using credit default data

- Structurally driven, comparatively lower default rates among municipal infrastructure companies.
- A particularly high degree of stability within the already resilient infrastructure asset class — attractive characteristics as a potential hedge, especially during difficult market phases.
- Downside: low credit risk premiums for potential investors.
- Illiquidity premiums, as well as complexity premiums — particularly for transformation projects by municipalities and municipal utilities — are therefore the key factors determining the yield premiums of municipal assets compared to liquid bonds.

1.4. Barriers for asset managers investing in municipal infrastructure

- *What barriers exist to investing in municipal infrastructure?*

Given the enormous investment needs in municipal infrastructure in Germany, the low market penetration of institutional capital to date, and the small number of active asset managers in this sector (Figure 3), the question is whether entry barriers and obstacles exist. For this reason, in the BAI Member Survey 2025, we asked asset managers why they have not (yet) invested in municipal infrastructure (Figure 7). The main factor is that no strategy has yet been developed for this sector (45%). Other frequently cited reasons included low expected returns or an unattractive risk-return ratio in the municipal infrastructure sector (29%) and limited access or a shortage of investable projects (27%).



Why Asset Managers Are Not (Yet) Investing in Municipal Infrastructure

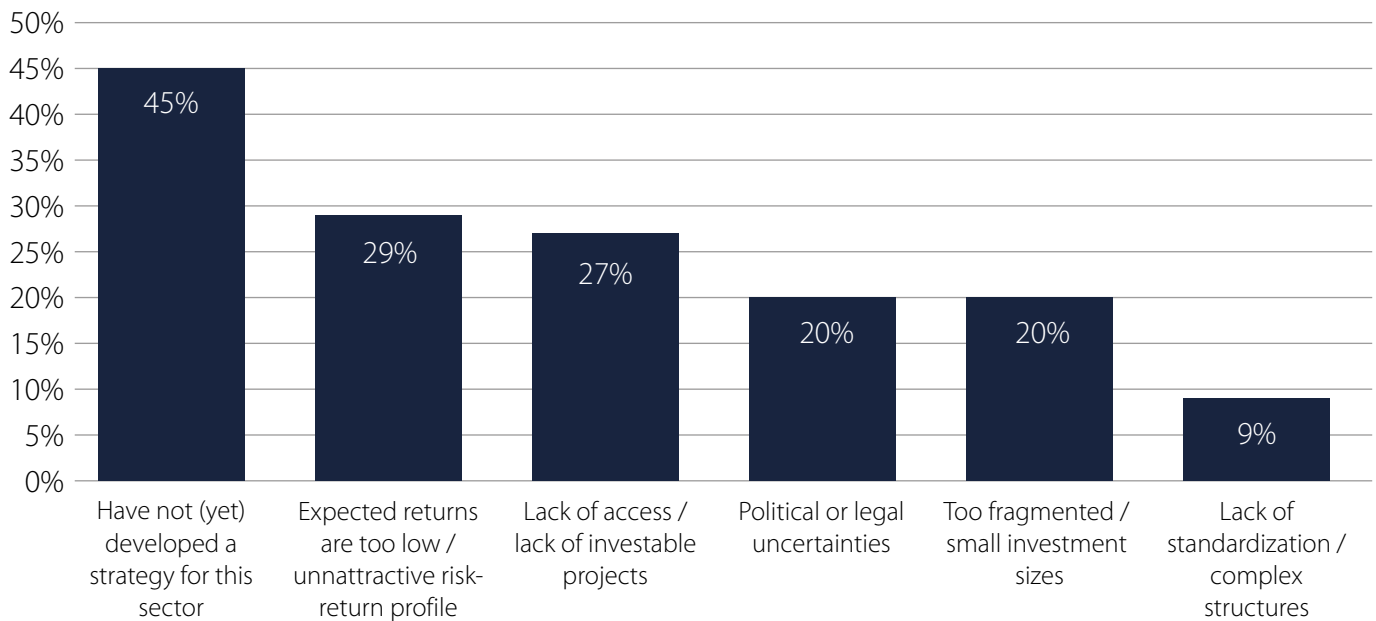


Figure 7: What are the reasons why (infrastructure) asset managers are not yet investing in municipal infrastructure in Germany? Source: BAI Member Survey 2025.

Below, we examine these obstacles in detail, drawing on expert opinions.

1.4.1. Lack of strategies among asset managers as an obstacle

45% of asset managers active in Germany's infrastructure sector stated that they do not (yet) pursue an explicit strategy for municipal infrastructure.

The infrastructure asset class can be classified by capital type, project phase (e.g., greenfield/brownfield), strategy or risk-return profile (e.g., core, core-plus, ...), and sectors (e.g., renewable energy, transportation, or digital). Based on different risk-return profiles, investment approaches, and correlations with other assets, infrastructure strategies among asset managers are typically structured along these categories.²⁵ As a result, they often exhibit global diversification. German infrastructure — and municipal infrastructure in particular — is, by contrast, sector-specific and highly heterogeneous

in terms of potential access points and strategies, yet regionally specific; as a result, it is generally not yet addressed independently by asset managers.

On the one hand, municipal utilities face enormous investment needs that significantly exceed their conventional credit lines. On the other hand, they are structured as cross-subsidized entities, whereby profitable areas subsidize loss-making sectors such as swimming pools or local public transportation. Potential investors do not want to be burdened with losses from loss-making areas, which significantly reduces the attractiveness of investments. The capital requirements may therefore necessitate major restructuring at the municipal utilities.²⁶



²⁵ Cf. BAI Information Brochure on Infrastructure 2022.

²⁶ *Capital Requirements Force Municipal Utilities to Restructure*, Energate, January 6, 2026, [Infrastructure Financing, Cross-sector ties as a roadblock to attracting investors](#), Energate 06.01.2026.

From a fund-of-funds perspective, the situation is described as follows: **Max Schönfelder, Head of Transactions Alternative Investments at Helaba Invest**, emphasizes that, from an investor's perspective, municipal infrastructure always represents a heterogeneous conglomerate of very different



Max Schönfelder, Head of Transactions Alternative Investments, Helaba Invest

assets. Municipal portfolios contain both facilities with no required return, such as swimming pools or other public services, and clearly income-generating assets such as solar and wind farms, district heating networks, or other energy infrastructure. For municipalities, the focus is less on the returns of individual assets and more on maintaining a balanced overall budget. From an investor's perspective, this is precisely where structural tension arises.

For private investors, it is necessary to specifically identify those assets that are economically viable on their own. However, these are difficult to isolate, as municipalities have a legitimate interest in managing profitable and loss-making sectors together. From the perspective of institutional investors, assets largely organized around market principles or subject to little or no regulation are particularly attractive. As an example, Schönfelder specifically cites renewable energy power generation facilities, where private-sector power purchase agreements (PPAs) are becoming increasingly common. These agreements provide high cash-flow predictability and reduce dependence on government feed-in tariffs. The challenge lies in balancing these interests so that both municipal budget targets and institutional investors' requirements are met.

The structure described requires a correspondingly high level of expertise from asset managers and makes developing strategies in this area challenging. As described (see 1.3.), asset managers already active in the municipal infrastructure sector in Germany tend to specialize and focus heavily on market-oriented sectors with stable cash flows. Scaling up, as well as strategies for other municipal sectors, still offer significant potential.

1.4.2. The risk-return profile of municipal infrastructure as a barrier

The second-most-cited obstacle from the perspective of asset managers, cited in 29% of responses, is the comparatively low expected return — or an unattractive risk-return ratio — associated with investments in municipal infrastructure in Germany. Investors also frequently cite the risk-return profile of German infrastructure in international comparisons as a reason for the so-called “reverse home bias” — the fact that investments are predominantly made in foreign infrastructure.²⁷ However, due to the lack of reliable data, it has not yet been possible to verify the thesis put forward by numerous stakeholders regarding comparatively lower returns using benchmark indicators for German infrastructure in an international comparison.

As discussions with stakeholders show, the key challenge lies in the mismatch between the return expectations of investors or asset managers and those of municipalities. Municipalities often use the favorable terms of municipal loans as a benchmark for return expectations, which does not align with the requirements of asset managers, given the complexity of structuring such deals. It is important to note that the potential return premium of private investments compared to traditional municipal financing is ultimately borne by fee payers or

²⁷ BAI Infrastructure Report Germany 2025.

taxpayers. The return premium must therefore be justified to municipal stakeholders and the public as the price for assuming additional risk, managing complexity, and mobilizing additional capital. Transparency is essential in this regard. At the same time, municipal ownership still lacks awareness that transformation investments have different risk and return profiles than financing for historically developed existing infrastructure and, accordingly, involve different risks and levels of complexity. The dialogue between municipal utilities and local governments can be understood as a classic negotiation process: Companies in sectors of municipal public services or municipal infrastructure naturally strive for the lowest possible financing costs, while investors expect appropriate compensation for the risks they assume. The market is not yet efficient, partly because of a lack of information. In addition to factors such as the structuring of municipal infrastructure projects for institutional investments, asset

managers view the task of persuading stakeholders and explaining the benefits of private investment as playing a decisive role. In particular, it is important to convey realistic expectations regarding the risk-return profile and to ensure a balance of interests with the public.

If we refer to the schematic representation by a fund-of-funds manager regarding net IRR at the target fund level, broken down by investment focus of infrastructure funds ([Figure 8](#)), municipal infrastructure — with its usage-based and, in some cases, regulated fees — is predominantly in the core segment. If investments are not made in existing infrastructure but rather, for example, in new energy transition projects at municipal utilities and local governments, project development risks and active value creation come into play, and the investment falls into the “Core-Plus” category in the schematic representation.



Schematic net IRR at target fund level by infrastructure investment focus

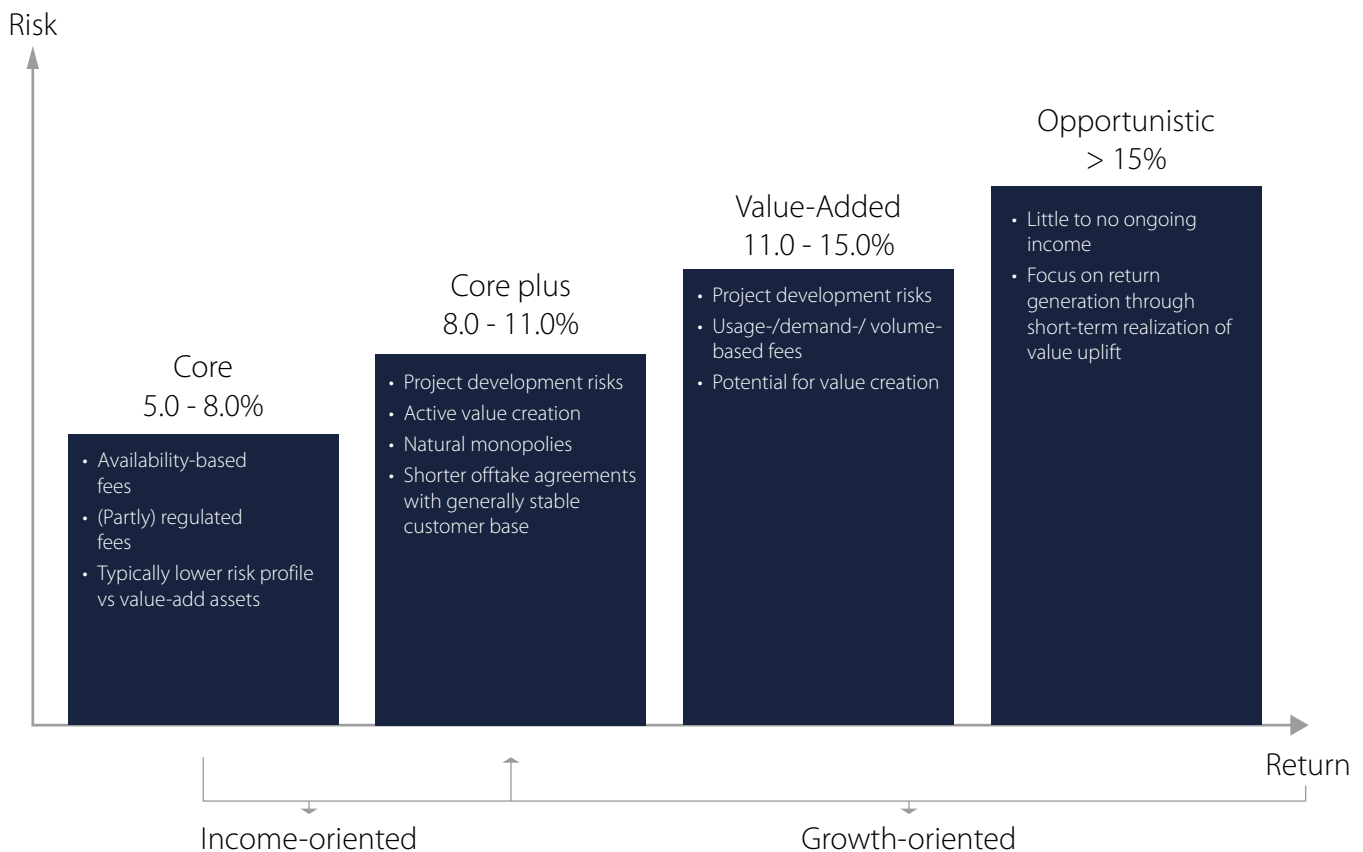


Figure 8: Schematic representation of the net IRR at the target fund level by investment focus for infrastructure funds. Source: Helaba Invest, Börsen-Zeitung, January 13, 2026.

However, unclear governance issues and heterogeneous contractual and project structures can, in some cases, increase the complexity of the fund portfolio, transaction costs, and governance burdens, which can lead to a shift toward value-added investments and help explain the perceived risk-return mismatch. If risk premiums are not compensated, or only to a limited extent, structural distortions arise at the target fund level, and investors shift to other infrastructure segments or foreign markets due to opportunity costs.

1.4.3. Further barriers - the structural Gordian Knot

From the perspective of German asset managers, the barriers to investment in municipal infrastructure include a whole series of interrelated factors (Figure 7).

- **27% view a lack of access or a shortage of investable projects as a barrier.**

The risk-return ratio discussed above — which is perceived as unattractive — and the poor alignment to date between the interests of asset managers and those of municipal utilities and local governments play a role here.

- **Overly fragmented structures (20%)** hinder access for institutional capital, as do political or legal uncertainties.
- **High complexity and a lack of standards (9%)** can be understood as a consequence of the factors mentioned above.

The survey results and interviews show that the lack of institutional capital for municipal infrastructure in Germany stems from a complex web of interrelated issues with multiple interactions. **Fragmented project structures** lead to **high complexity and hinder the establishment of standards**. This results in both **limited access to investable projects** and

a **risk-return profile that is unattractive** from the perspective of asset managers. This, in turn, contributes to the fact that only a few **projects are structured in a way that makes them investable for institutional investors**. This Gordian Knot can only

be cut through by means of appropriate **strategies on the part of asset managers** and requires measures to standardize and bundle municipal infrastructure projects.

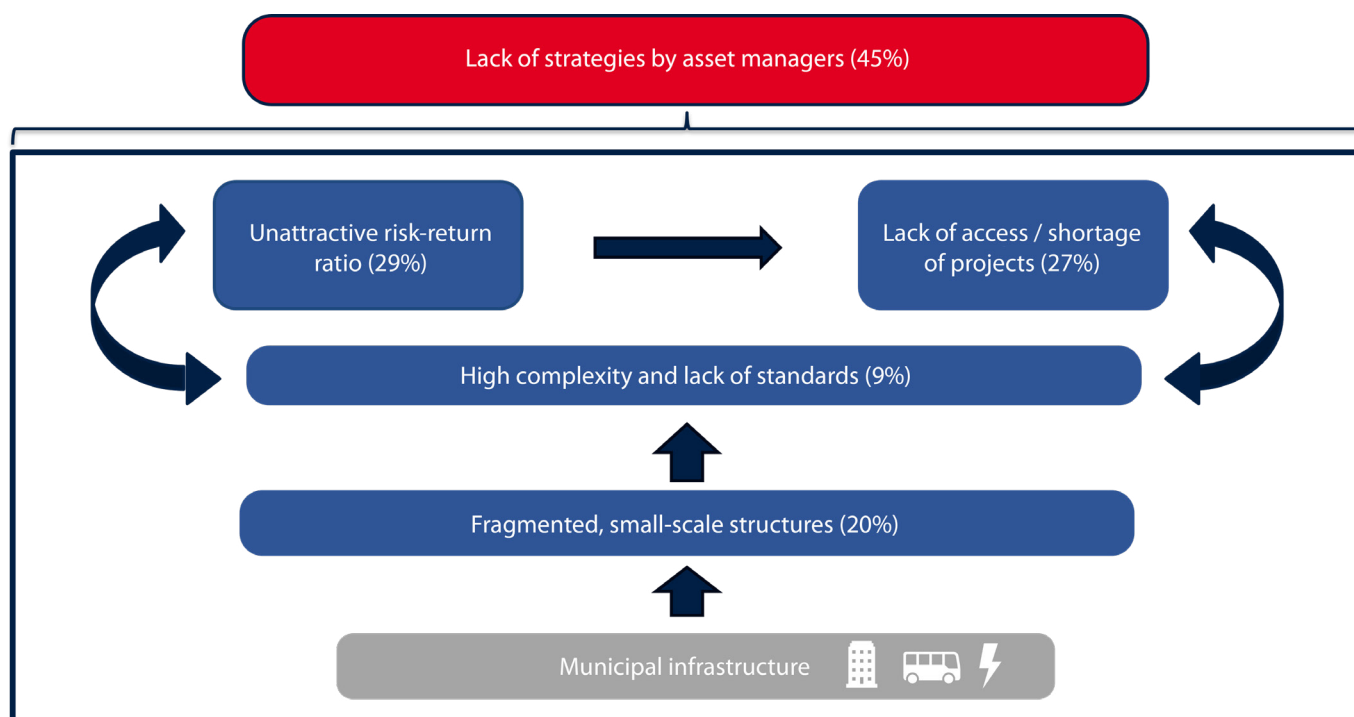


Figure 9: The Gordian Knot of Structural Barriers to Private Capital in Municipal Infrastructure; Schematic representation of interrelated barriers, with the percentage of asset managers who cited each reason as a barrier in the BAI Member Survey 2025 shown in parentheses; Source: Author's own illustration.

1.4.4. Summary: Barriers to asset managers investing in municipal infrastructure

1. Lack of strategies among asset managers for investing in municipal infrastructure in Germany as an overarching barrier

- Traditional infrastructure strategies are often internationally or globally diversified and structured by sector, whereas municipal infrastructure in Germany is heterogeneous and regional.
- The cross-subsidy principle of municipal utilities as a barrier to strategy development: Profitable sectors such as energy subsidize

loss-making sectors. From an investor's perspective, profitable assets organized closer to market conditions are primarily attractive, whereas municipalities seek to manage profitable and loss-making sectors jointly.

2. The risk-return profile of municipal infrastructure as an obstacle

- A perceived unattractive risk-return ratio for investments in municipal infrastructure in Germany, compared to other infrastructure sectors or foreign assets, is seen as a key obstacle
- An inefficient market due to a lack of information — a mismatch between the

return expectations of investors or asset managers and those of municipal stakeholders.

- Unclear governance issues, as well as heterogeneous contractual and project structures, increase complexity, transaction costs, and governance burdens from the perspective of asset managers, which contributes to the perceived risk-return mismatch.

3. Further obstacles—the structural Gordian Knot

- A complex web of interrelated problems with multiple interactions: municipal infrastructure features fragmented project structures, leading to high complexity and a lack of standards, which makes it difficult for asset managers to access investable projects.
- Together, these factors result in a risk-return profile that is perceived as unattractive, which has so far reduced the incentive to structure projects in a way that makes them investable for institutional investors.
- Appropriate strategies on the part of asset managers are required.

1.5. Practical approaches to increasing investment in municipal infrastructure

- *What approaches could be taken to increase investment in municipal infrastructure with the participation of institutional investors?*

The goal of leveraging more private capital to finance municipal infrastructure requires a systematic analysis of the current framework conditions and barriers. Based on this analysis, we derive concrete, practical solutions. In addition to direct quotes from market participants, we use in-depth case studies to highlight current examples of practical solutions that are being discussed or have already been implemented.

1.5.1. Political consensus on the role of private capital, planning certainty, and legal stability

Data from the BAI Investor Survey 2023²⁸ show that structural framework conditions and stable regulations are the basic prerequisites for private investment in infrastructure. In Germany, partly due to negative experiences in the past, for example, in the water sector during the 2000s, skepticism toward private infrastructure investments remains more prevalent than in other countries. These reservations sometimes lead to highly polarized political positions on the issue. Particularly at the local government level, the use of private capital is socially controversial and often meets with resistance. Citizen participation is therefore of fundamental importance for the success of projects.²⁹ Any short-term burdens — such as construction noise, environmental impacts, or higher financing costs compared to purely public investments — must be transparently weighed against the benefits:

²⁸ [BAI Infrastructure Report Germany 2024, p. 27.](#)

²⁹ [BAI Infrastructure Report Germany 2025, pp. 31–33.](#)

- a) Better and more sustainable infrastructure in the long term through additional capital that can be used to finance infrastructure.
- b) Potentially more efficient use of capital compared to purely government-funded projects.

It follows from these discussions that a cross-party political consensus on the use of private capital is a fundamental prerequisite for targeted measures.

Max Schönfelder of Helaba Invest specifically argues that a key approach to improvement lies in clearly and bindingly defining the extent to which equity investors can be required to make additional contributions. As long as this question remains open or is subject to subsequent political change, the risk associated with long-term equity investments cannot be adequately assessed. This acts as a deterrent, particularly for municipal investments and regulated network investments.

For investors, it is crucial to have a reliable view, right from the outset, of how returns and regulatory conditions will develop over the entire investment horizon. The possibility of political intervention at the start of each new regulatory period significantly increases uncertainty.

In an international comparison, Schönfelder points to countries such as the United Kingdom and Ireland, where regulatory frameworks are established for the entire duration of the investment. This long-term stability, often spanning multiple legislative terms, enables investors to realistically calculate risks and

mobilize capital. In Germany, however, there is no comparable, cross-party consensus on the role of private capital in infrastructure. From a political perspective, Schönfelder derives the recommendation that regulation should be depoliticized to a greater extent and made more long-term in order to build trust among private investors.

1.5.2. Platform models, standardization, and mergers

In [1.4.3.](#), we described the structural Gordian Knot in the municipal infrastructure sector — characterized by fragmented project structures, high complexity, and a lack of standards — which results in limited project access for institutional investors and a risk-return profile that is perceived as unattractive. To cut through this Gordian Knot, asset managers need to adopt appropriate strategies. An effective tool for reducing the high complexity caused by fragmented structures is the bundling and standardization of municipal infrastructure projects.

We are currently seeing market participants such as asset managers, municipal stakeholders, and institutional investors working on mergers, cooperation models, and platform solutions to reduce the complexity of municipal assets. Municipal infrastructure spans a wide variety of sectors (see [1.3.1.](#)), and the cross-sector structure of municipal utilities (see [1.4.1.](#)) complicates access and requires tailored solutions. Asset managers are called upon to develop solutions here in dialogue with municipal decision-makers and the traditional financing market.



Deep Dive 2: An asset manager's platform model for municipal infrastructure — LBBW Asset Management

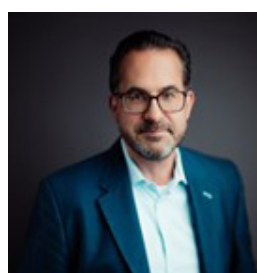


*Andre Pfleger, Head
of Transformation
Financing, LBBW Asset
Management*

Andre Pfleger, Head of Transformation Financing at LBBW Asset Management, explains that small-scale project structures and heterogeneous requirements call for simplified and scalable structures, for example through the use of standardized processes and capital-market-like instruments such as hybrid capital. The goal is to reduce transaction costs and avoid eroding the relatively narrow margin for returns with complex and cost-intensive structures. The so-called “platform” essentially refers to an umbrella structure that makes it possible to bundle various sub-strategies and sub-funds in the municipal infrastructure sector and to flexibly and modularly address their differing financing needs.

Within the limited scope for negotiation between investors and municipal stakeholders, the goal is to facilitate a balance of interests: While investors require predictable cash flows and clear exit structures, it remains crucial for municipal stakeholders to retain control over critical infrastructure. In this context, the structuring of financing instruments is considered a key success factor.

Different types of investors each have their own requirements and challenges. The complexity of municipal infrastructure makes platforms and cooperation models — with standardized investments, including by institutional investors — a sensible approach to pooling aligned interests.



*Christian Chrobok,
Head of SAA, WPV*

Christian Chrobok, Head of SAA at WPV, also sees potential in collaborative infrastructure transactions to, among other things, advance the issue of public infrastructure in Germany. “For example, like-minded

investors with similar requirement profiles — such as public-sector pension funds, private pension funds, or insurance companies — could pool capital through an institutionalized platform approach to gain access to projects. Such approaches can also be implemented in the form of structured club deal formats, for example through joint special-purpose funds or comparable institutional structures in which

multiple investors coordinate their investments in individual infrastructure projects. Smaller institutional investors, in particular, face the challenge of limited personnel capacity or relatively high costs, which can be reduced through economies of scale. At the same time, investments in various infrastructure segments — ranging from digital infrastructure to energy and social infrastructure — can be implemented more efficiently and backed by institutional capital. In addition, such platforms offer the opportunity to specifically address different investor needs — for example, regarding preferred forms of investment (equity or debt), a standardized reporting format, and the handling of engagement in the context of internal and external ESG requirements.”

One market trend that illustrates the growing importance of investments in municipal infrastructure from the perspective of institutional investors in Germany is that some of these investors are already taking the initiative themselves to proactively raise the issue with asset managers.

Deep Dive 3: A collaborative approach by public-sector investors for investments in municipal infrastructure



Dr. Johannes Scheier,
Head of the Asset Management, Planning,
and Control Department,
VGH Versicherungen

Dr. Johannes Scheier, Department Director of Asset Management, Planning, and Control, VGH Versicherungen: *"VGH, together with partners, is pursuing a new approach to make targeted investments in municipal infrastructure. This stems from the significant capital requirements of municipal utilities in the coming years — which traditional banks cannot fully meet — as well as utilities' skepticism toward international institutional capital, particularly hedge funds or foreign investors. As a public-sector insurer with a strong regional presence, VGH can build trust in this context.*

But let's start from the beginning: Over the next few years, the Hannover Insurance Group plans to initially invest around one percent of its capital assets — based on a total of just over 20 billion euros — in renewable energy. The goal is not only to invest capital but also to support economic transformation and the energy transition in Europe. For risk and regulatory reasons, VGH is not making the investments directly on its balance sheet but through a pooling vehicle established in collaboration with Universal Investment as the investment manager.

Since this asset class is new to VGH, it has sought out partners for its initial investments. As a seed investor, it has worked alongside Versicherungskammer Tecta Invest — which has extensive experience in the infrastructure sector — and the Munich-based asset manager LHI to launch the "LHI Regionergy" fund. These partners bring expertise, operational experience, and existing networks to the table. In addition to capital, VGH contributes its network of savings banks from its business area in northern Germany. The latter facilitates access to municipal utilities, which often handle their financing through savings banks, and allows for the alignment of shared interests.

Furthermore, the strategic dimension should be emphasized: The investments are intended not only to generate returns and stable long-term cash flows but also to strengthen VGH's profile as a public-sector investor. The asset class is viewed as sustainable and strategically sound, with the aim of achieving market-standard returns. From an investor's perspective, the timing for entry appears favorable, as there is a growing supply of assets that have already factored in the rise in interest rates in their valuations. By focusing on projects close to home, familiar partners, and a well-functioning legal system, additional advantages can be achieved in the risk-return profile. At the same time, this approach helps to strengthen Germany's previously underdeveloped infrastructure funding and promote a positive "home bias" in the German infrastructure market."

1.5.3. Structuring models and investment structures

As described in 1.4.3, a lack of project access — or a shortage of investable projects — is a key barrier preventing asset managers from investing in municipal infrastructure (27% of surveyed asset managers). Bundling and standardizing municipal infrastructure projects through platforms, consortia, or collaborations among various stakeholders are effective models for reducing complexity and increasing the investability of projects. However, concrete models for investing in municipal assets are still needed.

While the interviews show that debt financing generally remains available to municipal utilities — albeit not on the usual terms — equity capital is the decisive bottleneck, which typically cannot be met through banks. This brings alternative models into focus. From the perspective of municipal utilities, feasibility studies are a mandatory step before any decision is made. The central challenge is mobilizing private capital as equity without losing municipal control.

In the following, we highlight which structuring models and forms of participation already exist in practice.



1.5.3.1. PPPs: Theory and the reality in Germany

A concept frequently cited as a buzzword in the context of private investment in infrastructure is public-private partnerships (PPPs). According to the theoretical definition, traditional PPPs are simply a form of procurement for infrastructure projects in which government contracting authorities cooperate with private companies. While the public sector remains the owner, private entities carry out the operational implementation of new infrastructure projects — including financing, planning, construction, and subsequent operation for a specified extended period. Unlike traditional procurement, where the construction of infrastructure assets is not necessarily organized by the same entities as their operation, PPPs typically span the entire life cycle. In particular, more complex, long-term projects benefit from the expertise and incentive structures of private actors, which encourage economically sustainable management across all phases of the life cycle. In theory, these long cycles align very well with the long-term commitments of institutional investors, particularly life and pension insurance companies.³⁰

The term “PPP” tends to have a poor reputation in Germany, due not only to criticism from the Federal Audit Office regarding PPPs in highway construction but also, in particular, to bureaucratic hurdles. Figures from the PPP project database show that the prevalence of traditional PPPs in Germany has stagnated at a low level in recent years, and according to the BAI Investor Survey, only a small minority of German institutional investors have invested in PPPs to date.³¹

³⁰ Regulation — *Modernizing Infrastructure Faster and More Efficiently — with PPPs*, GDV, March 10, 2026.

³¹ Cf. *BAI Infrastructure Report 2025*, pp. 25–27.

Dr. Bernd Kreuter of Palladio Partners explains that while various structuring models are generally possible for investments in municipal infrastructure, PPPs have so far played only a very minor role. In practice, therefore, joint venture structures are predominantly used, often through special purpose vehicles (SPVs). These typically involve equity investments, in which the asset manager often provides the larger portion of the capital, while municipal utilities typically retain operational responsibility. Governance is structured independently of the level of ownership and enables balanced management on an equal footing. At the same time, he emphasizes the complexity of such coordination. The design of governance, the allocation of roles, and decision-making rights require intensive coordination and can be time-consuming. A key prerequisite for functioning models is therefore that municipal partners receive sound advice and have sufficient experience.

However, PPPs are not uniformly defined, which can sometimes lead to ambiguities and misunderstandings. The European Commission, for example, distinguishes between contract-based PPPs and institutionalized PPPs.³² The structures traditionally referred to as PPPs in common parlance are thus so-called contractual PPPs. Here, the relationship between the public sector and private actors is purely contractually regulated, although it can take a variety of forms.

By “institutionalized PPPs,” on the other hand, the Commission refers to newly established companies that arise from collaboration between private and public-sector actors and are financed through a mix of public and private funds.³³ According to this definition, the joint ventures mentioned would also be forms of PPPs, even if they are referred to differently in practice.

1.5.3.2. SPVs and project companies

There are essentially two structuring approaches for external equity investments: direct recognition on the investor’s balance sheet or the spin-off of the investment project into a project company. Direct

investments are often difficult to communicate to municipalities and the public, as they appear directly on the investor’s or asset manager’s balance sheet. In contrast, project companies or special purpose vehicles (SPVs) have established themselves as a common structuring tool for off-balance-sheet financing of infrastructure investments.

In addition to the precise contractual framework governing the collaboration between public and private actors, however, the vehicles through which institutional investors gain access to municipal infrastructure projects are crucial.

Against this backdrop, **Markus Schmidt of INTREAL** emphasizes that a key instrument is the bundling of infrastructure projects into special purpose vehicles in which both municipal entities (e.g., municipal utilities) and funds hold stakes. While the fund provides capital, operations and control typically remain with the municipal entities, as they do not wish to relinquish ownership of their assets. At the same time, Schmidt emphasizes that such structures can also offer balance sheet advantages for municipalities, for example by easing pressure on the equity ratio and providing the opportunity to tap

³² PPPs, IBau Information Service for Tenders, Glossary.

³³ European Commission MEMO/08/95, 2008.

into additional debt financing at the SPV level. Furthermore, they facilitate the scalability of such models, as they are more easily standardized and can be replicated across multiple projects.

The structure of project companies varies greatly from case to case and depends on the specific needs of the municipal utilities and investors. They often require complex negotiations. The following model should be viewed as an example:

Deep Dive 5: A municipal utility's perspective on investment models - Morris May, Stadtwerke Neumünster

Morris May of Stadtwerke Neumünster emphasizes that the collaboration with investors within the framework of a project company was deliberately structured as a partnership. The municipal utility does not retain unilateral operational control but acts on an equal footing with the investor based on a partnership agreement. Key requirements under municipal law — particularly those stemming from the Municipal Code — were explicitly enshrined in the contract. While this required a greater need for coordination and clarification with the private investor, it was accepted and supported by the investor.

At the same time, he emphasizes that the chosen structure counteracted political reservations regarding institutional capital. Instead of directly integrating external equity investors into the municipal utility, an independent project company was established outside the traditional municipal utility sectors. This significantly increased political acceptance. Although the process of involving the governing bodies was time-consuming — particularly due to the need to explain the risks, governance, and operational structure of the project company — the decision was ultimately met with a positive response. The decisive factor in this was, above all, the partner's long-term approach, which took into account both municipal interests and the requirements of the partner's investors, while enabling stable, low-risk cash flows through long-term lease structures.

Given the scale of the municipal utility's financing needs, the question arises as to what extent a model like the one from Neumünster is transferable to other infrastructure segments and municipal utilities — and is thus theoretically scalable.

The establishment of project companies involving investors took place here in connection with the fiber-optic expansion for a new infrastructure project that, accordingly, was not yet part of the municipal utility's existing structure. This definitely facilitated acceptance of the involvement of institutional capital, according to Morris May. At the same time, he argues that, based on the experience gained, project-based corporate structures are by no means suitable only for new infrastructure projects. Admittedly, applying this approach to existing infrastructure is significantly more challenging and time-consuming, particularly because investments in municipal basic services are politically sensitive and the involvement of external investors still requires explanation to citizens and committees. Nevertheless, he believes it will be virtually unavoidable in the long run to explore new financing avenues — for the renewal of existing infrastructure, as the ongoing transformation process is difficult to manage with internal funds and limited government funding sources alone. Crucial to this process is early, transparent engagement and involvement of all

stakeholders, as well as a careful analysis of alternative forms of capital. In addition to traditional equity partnerships, hybrid instruments such as profit-sharing capital could also be considered. For municipal utilities, this means preparing long-term investment decisions well in advance, examining various structural models, and involving political decision-makers early on in order to build acceptance for new forms of financing, including for existing infrastructure, in the first place.

1.5.3.3. Hybrid capital and flexible instruments

The hybrid instruments mentioned are also part of the toolkit of potential financing forms available to an asset manager whose objective is to bundle various sub-strategies and sub-funds in the area of municipal infrastructure. The complex financing needs may accordingly require that a strict distinction between equity and debt capital solutions not be made.



Andre Pfleger of LBBW Asset Management makes it clear that special purpose vehicles (SPVs) or project companies can play a role but should not be viewed as the sole or dominant structure. Rather, he emphasizes that there is no “one-size-fits-all” financing model and that the choice of structure depends heavily on the specific asset type.

For existing public infrastructure projects, particularly those with high financing needs, he considers the use of equity-like instruments such as hybrid capital to be a priority, as they allow capital to be raised without fundamentally altering ownership and control structures. In contrast, project companies, particularly for new assets, such as those in the renewable energy or district heating sectors, are a common and fundamentally suitable structure, to which the platform is also open. However, it is crucial that the financing structure not be predetermined but rather be guided by the strategic preferences of the asset owners.

1.5.4. Government investment and financing vehicles

A broad political consensus on the importance of institutional capital in municipal infrastructure and a long-term, stable regulatory framework are fundamental prerequisites for a structurally more extensive use of institutional capital in the municipal infrastructure sector. On this basis, asset managers and municipal stakeholders can develop and adopt sensible structuring models and scalable platform solutions.

In general, government support instruments play a secondary role as location factors for infrastructure investments by German LPs compared to structural framework conditions³⁴. However, in cases of market inefficiencies — where market mechanisms alone do not create sufficient investment incentives — government actors and support instruments can have a targeted impact and initiate positive path dependencies. Two levers are central to this: first, the role of government funding institutions and overarching investment frameworks as catalysts for private capital; and second, government risk-sharing instruments — in particular, first-loss structures and guarantee instruments — that specifically improve the risk-return profile of municipal assets.

1.5.4.1. Funding institutions as catalysts

The concrete implementation of current government support instruments, such as the Special Infrastructure and Climate Neutrality Fund and the Deutschlandfonds, has faced criticism, among other things, for a lack of involvement by institutional investors (see 1.1.). Furthermore, the Deutschlandfonds has so far addressed only one sector of municipal infrastructure with investment needs: the energy utilities sector. Low-interest KfW loans and the partial assumption of credit risks for bank loans are part of the toolkit here³⁵. As discussed, given the scale of investment needs in Germany, the banking sector will not be able to cover the total volume, and the involvement of institutional investors in the infrastructure transition is necessary.



Jens Hennes, Chief Executive Officer and Member of the Executive Board, Pension Fund of the North Rhine Chamber of Pharmacists

Jens Hennes, Chief Executive Officer and Member of the Executive Board of the Pension Fund of the North Rhine Chamber of Pharmacists, views the potential impact

of government investment and financing vehicles very positively in principle:

“From our perspective, this requires cooperation with experienced asset managers (GPs) who can offer German limited partners (LPs) a suitable fund solution.

Our focus here is on a potential co-investment in the federal government’s infrastructure package. We are actively engaging with GPs to assess the current situation and explore potential avenues for participation. Provided the returns are adequate, this is in the best interests of our members in multiple respects. After all, in addition to a good pension plan, a functioning road and rail network in Germany is among the basic daily needs of our insured members. The scale of the investment required here becomes evident every day.”

Max Schönfelder of Helaba Invest emphasizes that standardization is a key lever for mobilizing private capital for municipal infrastructure. Against this backdrop, an overarching investment framework could in principle be helpful, provided it is legally well-structured and designed to be practical. Such a fund could help to specifically improve risk-return profiles and leverage private investment, for example through subordinated structures or first-loss elements. Whether this approach is effective in practice, however, depends largely on its specific design. Schönfelder expresses skepticism about structures involving many government actors, as these often lead to complex solutions that are unattractive to investors.

³⁴ Cf. *BAI Infrastructure Report Germany 2024*, p. 27.

³⁵ *Faktenblatt: Der Deutschlandfonds*

However, the Deutschlandfonds has so far addressed neither the bundling and standardization of projects and processes nor suitable structures for the bundled implementation of projects that enable effective risk transfer, nor has it addressed the involvement of institutional investors via asset managers and alternative investment funds (AIFs).

Accordingly, it is essential to consider existing funding instruments holistically. Making efficient use of the existing funding landscape requires the pooling of resources, such as those of the EIB and KfW. International experience from actors such as the EIB can be valuable in this regard.



Heike Freimuth, Senior Advisor for Germany, EIB

Heike Freimuth, Senior Advisor for Germany at the EIB,

emphasizes that the EIB consistently advocates at the political level for greater coordination of efforts and the systematic use of financing instruments. With regard to

the Special Infrastructure and Climate Neutrality Fund, she warns that, despite legal possibilities, leverage and structuring instruments are underutilized because their use is not explicitly required. As a result, leverage potential of private capital mobilization risks being lost.

Freimuth considers the Deutschlandfonds as a relevant complementary initiative to the existing activities of development banks such as the EIB and KfW. Given the high investment needs, there is room for more financial instruments, especially since there are already overlaps, such as through the Zukunftsfonds and the role of the EIF. At the same time, the Deutschlandfonds offers an opportunity to deepen cooperation with KfW, bundle larger portfolios, and generate stronger market momentum. Promotional

banks, in particular, could act as “first movers” and, through their participation, send a strong signal to other banks and institutional investors. Freimuth also highlights the EIB’s advisory role. Beyond mere financing, the bank contributes its technical and structural expertise at an early stage, for example in the development of complex PPP structures. As an example, she points to Lithuania, where the EIB supported the government in setting up and structuring a large-scale PPP project for military infrastructure and subsequently also became involved in financing its implementation. In her view, such integrated approaches combining advisory services, structuring, and financing are also crucial for Germany in order to accelerate investments and effectively mobilize private capital.

1.5.4.2. Government risk-sharing instruments

The first-loss elements mentioned are part of the toolkit of potential government risk-sharing instruments and a much-discussed tool for shifting the risk-return curve in a way that makes domestic infrastructure assets more attractive. Public or concessionaire funds cover potential initial losses of an infrastructure project and cap risks. Other models include guarantees, subsidized loans, or insurance³⁶. Internationally, guarantees, for example, have proven effective, particularly in stimulating bank financing.



³⁶ [UNESCO: Blended Finance](#).

Deep Dive 6: Experience with guarantees as risk-sharing instruments at the EIB - Heike Freimuth, EIB

Drawing on European experience, **Heike Freimuth of the EIB** concludes that risk-sharing instruments are crucial for engaging private and commercial banks. Particularly in large-scale transformation projects, such as those in the wind energy sector, the EIB has helped reducing concentrated risks for banks by assuming a portion of the risk, thereby increasing the headroom for financing opportunities.

For Germany, this suggests that funding instruments could be structurally modeled after the EIB approach: as a long-term, risk-mitigating financing anchor backed by strong technical expertise. Long maturities, flexible disbursement terms, and favorable conditions are particularly important, as they provide long term visibility and stability for municipalities while effectively mobilizing private capital.

In practice, the EIB often implements risk-sharing through guarantee instruments, for example in cooperation with Commerzbank. In this arrangement, the commercial bank retains the entire customer relationship and operational support, while the EIB assumes up to 50% of the risk for a predefined loan portfolio. This risk relief enables banks to significantly expand their lending volume — in this specific case, from around 500 million euros to up to 1.2 billion euros — and thus provide considerably more financing for municipal utilities and local public service companies. The instrument specifically shifts the risk-return structure in favor of the banks, thereby making transformation investments bankable in the first place. At the same time, the model demonstrates that tackling transformation tasks does not have to rely solely on direct public financing but can be achieved through the intelligent involvement of the banking sector, in which public development banks cushion risks and mobilize private capital.

First-loss structures can be viewed as a special form of government guarantee, in which the government bears the first layer of risk. The use of structures based on this model is also increasingly recommended for engaging institutional investors. However, their effectiveness depends heavily on the specific market structure and requires a well-thought-out design.



*Dr. Peter Brodehser,
Managing Director &
Partner Infrastructure
Investments, DWS Group*

Dr. Peter Brodehser, Managing Director & Partner, Infrastructure Investments, DWS Group, points out that the yield premium of assets in regulated infrastructure relative to liquid bonds is already low today,

given the persistently higher interest rate environment. First-loss structures would therefore need to be calibrated with such precision that they tangibly improve the risk profile without further eroding the remaining yield premium relative to liquid bonds.

While first-loss structures are generally viewed very positively in the market as a potential instrument for investments in municipal infrastructure, international experience and guidelines show that their success depends largely on their precise design and calibration. The OECD's guidance on blended finance³⁷ is relevant in this context. According to Principle 2, "development finance in blended finance should facilitate the unlocking of commercial finance to optimize total financing directed towards development

³⁷ *Best Practices in Development Cooperation – OECD DAC Blended Finance Guidance 2025, pp. 39–40.*

impacts.” Principle 2.C calls for the targeted use of concessional instruments to address market failures and for their scope to be disclosed transparently. First-loss structures should therefore be used only to the extent necessary to mobilize private investment. While overly generous use may reduce risks, it simultaneously lowers return premiums. Closely linked to this is the principle of additionality (2.A): Public first-loss capital should provide just enough incentive for private investors without creating market distortions or promoting investments that would have taken place even without support.

In general, policymakers should make better use of existing expertise to take timely, targeted measures and to make more effective use of the funding provided by the federal government.

1.5.5. Summary: Approaches for increasing investment in municipal infrastructure

The goal of greater involvement of institutional capital in the area of municipal infrastructure requires that policymakers engage in dialogue with market participants and stakeholders to initiate targeted solutions. Several concrete approaches can be derived from these discussions:

1. Political consensus on the role of private capital, planning and legal certainty

- Reliable regulations ensuring planning and legal certainty throughout the entire investment period, regardless of shifts in the political balance of power at the local, state, or federal level.
- Alignment with international best practices, where regulatory frameworks provide stability across multiple legislative terms

2. Platform models, standardization, and partnerships

- Development of targeted strategies by asset managers, incorporating various sub-strategies tailored to specific financing needs, for the systematic development of municipal infrastructure and scaling.
- Standardization of investments and processes to reduce complexity, transaction costs, and market inefficiencies.
- Consortia and collaborations among institutional investors to pool aligned interests.
- Balancing the interests of investors (predictable cash flows, clear exit structures) and municipal stakeholders (maintaining control over critical infrastructure) as a key success factor.

3. Structuring models and forms of investment

- Use of appropriate investment structures—ranging from joint venture models to SPVs and hybrid capital—depending on asset type and municipal requirements.
- No “one-size-fits-all” approach: For existing infrastructure, hybrid capital is a suitable option for maintaining control structures; for new assets such as renewable energy or district heating networks, project companies are more appropriate.
- Early involvement of political decision-makers and transparent communication with citizens and committees as a prerequisite for acceptance

4. Government investment and financing vehicles

- Government funding instruments complement structural framework conditions — they are most effective where market mechanisms alone do not create sufficient investment incentives.
- Efficient use of the existing funding landscape, the pooling of resources (e.g., EIB, KfW), and the involvement of institutional capital are necessary.
- Development banks such as the EIB and KfW can act as “first movers” and, through their participation, attract additional private investors.
- First-loss structures and guarantee instruments can be useful:
 - must be calibrated at a level that incentivizes private investors without causing market distortions.
 - be structured in such a way that a sufficient yield premium over liquid bonds is maintained and the risk profile of municipal assets is significantly improved.

This suggests that there is an efficiency issue when it comes to mobilizing private capital for infrastructure, even though investors are generally willing to participate. In Part 2, we will therefore examine the portfolios of German investors.



2. A Deep dive into the infrastructure portfolios of German investors



In **Part 1**, we showed that the mobilization of private capital for municipal infrastructure in Germany is currently hampered by structural efficiency issues. Against this backdrop, **Part 2** focuses on the portfolios of German institutional investors and answers the following questions:

- What role does infrastructure play for German institutional investors in an international comparison?
- What trends are emerging regarding infrastructure debt?
- What are the differences between various types of investors?
- What role does domestic infrastructure play?
- What are the current trends?

We answer these questions below using data from the BAI Investor Survey 2025³⁸ and insights from numerous institutional investors who provide firsthand accounts of their portfolios.

2.1. The current state of infrastructure in German portfolios

- *What role does infrastructure play for German institutional investors compared to their international counterparts?*

The data show that infrastructure continues to gain a foothold in German investors' portfolios. The importance of equity investments is currently still significantly higher than that of debt investments in both infrastructure and real estate.

38 BAI Investor Survey 2025, representative data from 107 institutional investors with approximately 2.2 trillion in assets under management.

Average Allocations by German LPs to Alternative Asset Classes

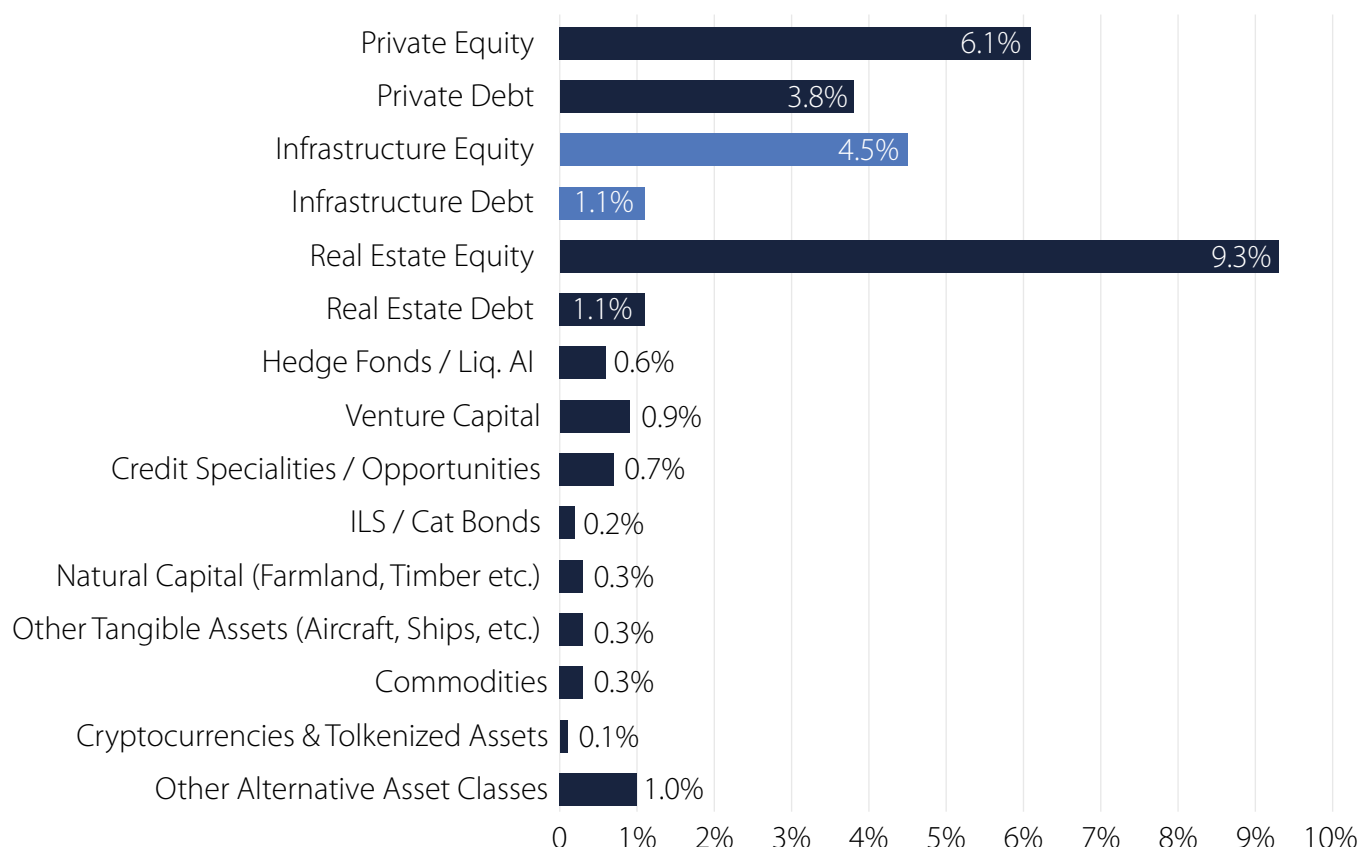


Figure 10: Average share of alternative asset classes in the portfolios of German institutional investors. Source: BAI Investor Survey 2025.

The investors interviewed in the expert interviews overwhelmingly confirm the currently much greater importance of infrastructure equity relative to debt. The allocation was often built up in the wake of the

global financial crisis and the resulting period of low interest rates, and typically through equity investments in the renewable energy sector.

Deep Dive 7: Infrastructure portfolio of a pension fund - Peter Herrmannsberger, Philips Pension Fund



Peter Herrmannsberger, Chairman of the Board, Philips Pension Fund

Peter Herrmannsberger, Philips Pension Fund, explains that infrastructure investments to date have primarily focused on renewable energy and have been made as equity investments.

The infrastructure portfolio began to be built in 2009, following the global financial crisis, and was primarily motivated by the goal of achieving stable long-term cash flows. Early entry into renewable energy also offered attractive returns in an environment of steadily declining capital market interest rates, which became an increasingly important driver of further expansion of a diversified infrastructure portfolio.

An international comparison shows that Germany still has room to catch up in terms of infrastructure allocation, particularly when compared to the

pioneers Canada and Australia. Pension funds drive this allocation (see [Figure 11](#)).

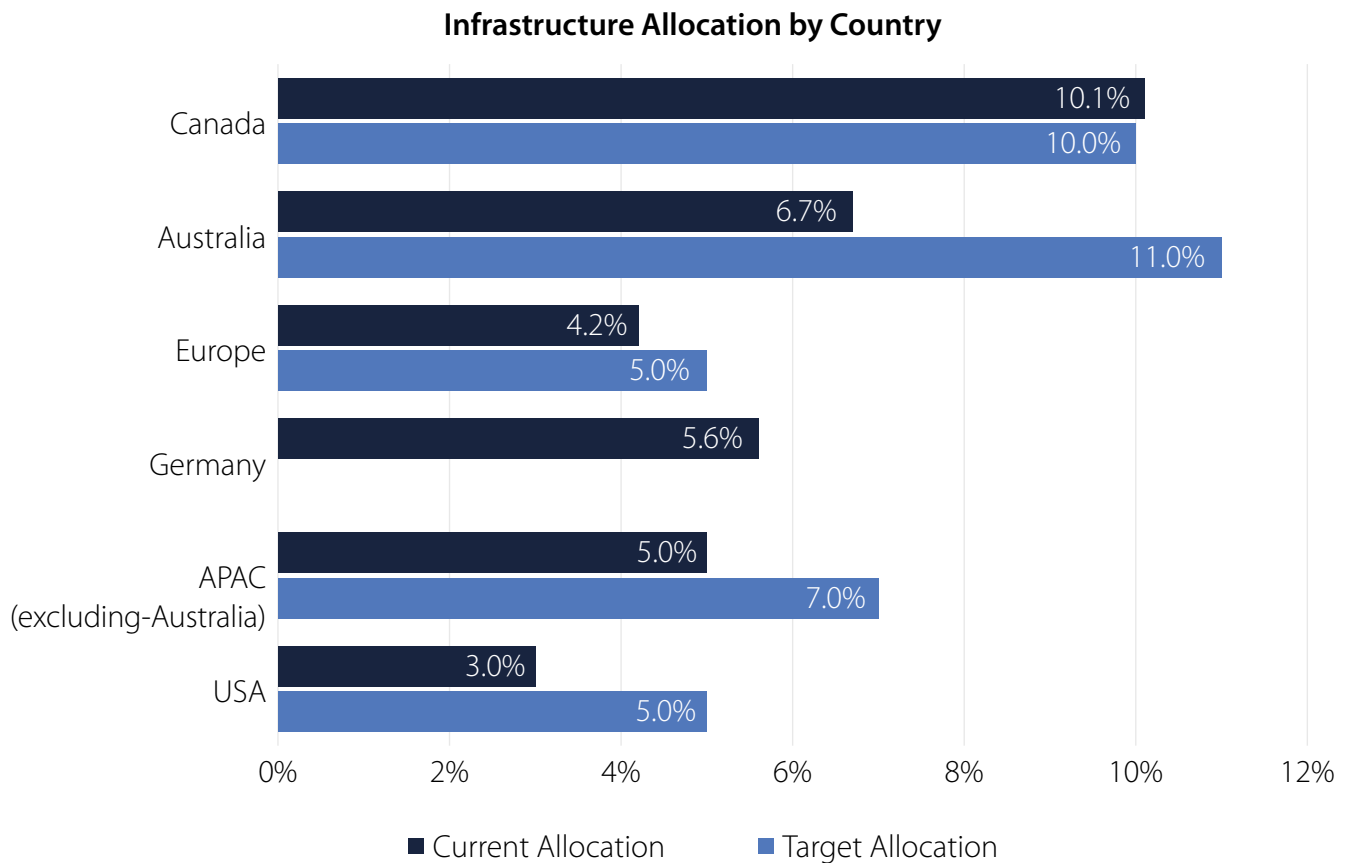


Figure 11: Infrastructure allocation by institutional investor origin; Source: Macquarie for international data³⁹, BAI Investor Survey 2025 for Germany.

2.1.1. Infrastructure Debt as a growth segment: Drivers, strategies, and investor logic

- What developments are taking place in infrastructure debt?

A common pattern regarding German investors' infrastructure allocations is that they initially entered the equity segment, and infrastructure debt is now coming to the forefront. As outlined in the BAI Investor Report, infrastructure debt is currently the alternative asset class with the strongest positive momentum among German insurance companies — the largest investor group by both number of firms and assets under management (AuM). The rise in interest rates, which has persisted longer than originally expected, combined with characteristics of the asset class, such as inflation protection, regular

returns, and diversification, are driving this trend. This development is in line with the global trend, where the asset class is currently perceived as the most attractive among all strategies and sub-asset classes in the private debt sector.⁴⁰

According to the BAI Investor Survey 2025, diversification is the main reason for infrastructure debt investments by German institutional investors (Figure 12). This is followed by potential risk premiums relative to liquid bonds and duration matching through long-term, stable cash flows.

³⁹ Macquarie, *Perspectives: Infrastructure Portfolio Allocation: What Could Optimal Look Like? Private Infrastructure Equity*, April 2025, p. 5, based on the Preqin database (January 2025).

⁴⁰ BAI Investor Report: *Insurance Companies 2026*, pp. 14–16.

Reasons for Investing in Infrastructure Debt

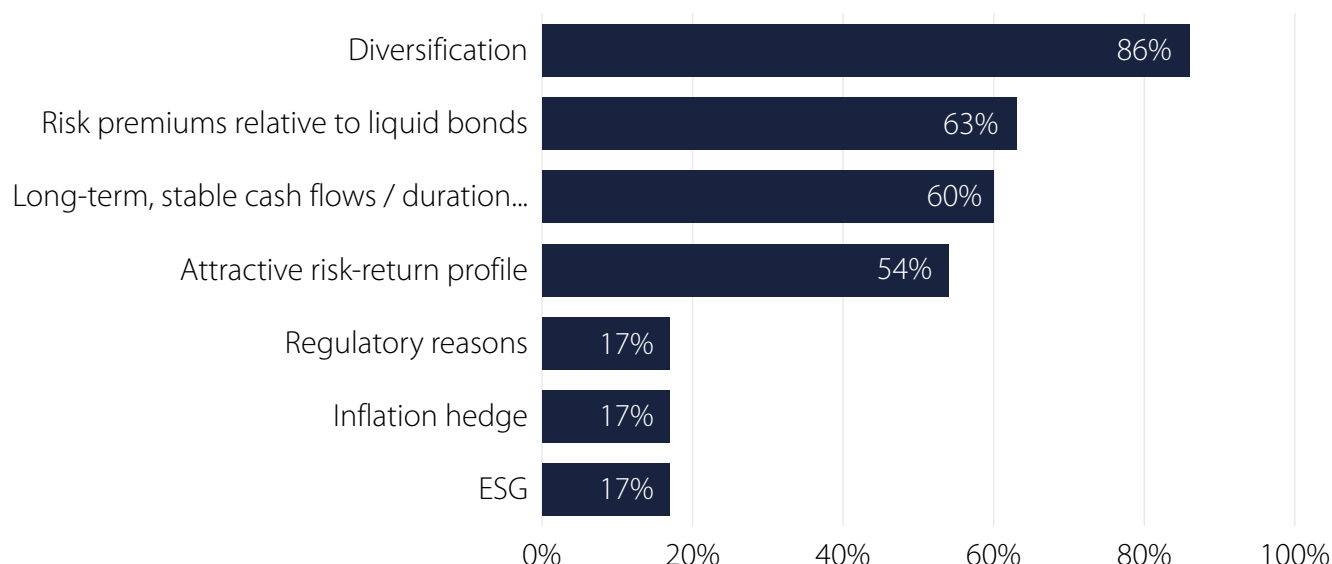


Figure 12: Why do you invest in infrastructure debt? Source: BAI Investor Survey 2025.

Deep Dive 8: An insurance company's Infrastructure portfolio - Alexandra Graf, ALH Group

The ALH Group's infrastructure portfolio is now diversified across both equity and debt investments and accounts for approximately 10 percent of the life and health insurers' total investment portfolio, according



Alexandra Graf, Division Head within Real Estate Management/Infrastructure at the ALH Group

to **Alexandra Graf, Division Head within Real Estate Management/Infrastructure at the ALH Group**. While the group clearly began in the German renewables equity sector, an infrastructure debt portfolio has been built up since 2020 — primarily to further diversify, including in light of regulatory frameworks such as Solvency II. In the current market environment, she considers infrastructure debt to be more attractive than infrastructure equity due to higher interest rates and credit spreads that remain fairly stable; the risk-return profile of infrastructure equity has not yet fully adapted to the new market environment.

The appeal of infrastructure debt stems primarily from the stability of the assets and the predictable recurring cash flows in the form of interest income. In contrast, infrastructure equity investments often require longer ramp-up periods before stable distributions are generated. Since there is a growing focus on recurring distribution yields, debt appears superior in the current market environment in terms of the risk-return profile. In her assessment, entry prices in the equity sector do not yet sufficiently reflect the rise in interest rates. Another key driver is the illiquidity and complexity premium relative to liquid bonds. Across markets, this premium remains relatively constant in the range of approximately 70 to 100 basis points. Before being added to the portfolio, each project is assessed to determine whether the premium is sufficiently attractive; transactions that do not meet this threshold are not pursued. Regarding interest rate risk in fixed-rate structures, she emphasizes that the perspective of a life and health insurer is crucial: On the liability side, there are long-term committed obligations with fixed interest rate requirements. The fixed-rate focus is therefore less a tactical view on interest rates and more an expression of a strategic asset-liability matching approach.

The BAI Investor Survey 2025 collected representative data on the strategies used in infrastructure debt investments (Figure 13). It should be noted that the categories cannot be strictly distinguished in terms of risk, structure, and rank. Rather, they represent an approximation of investors' actual investment approaches and strategic logic, which effectively map out a risk scale:

- Core / Senior – low risk, stable cash flows;
- Whole Loan / Junior Debt – medium risk, higher returns;
- Mezzanine—subordinated/hybrid, yield-oriented;
- Opportunistic / High-Yield – high risk, high returns.

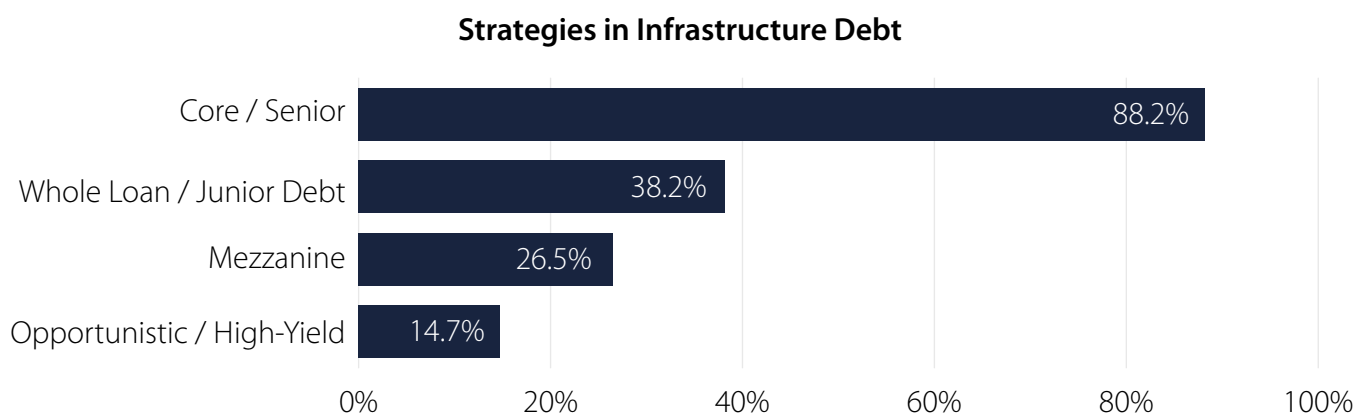


Figure 13: In which infrastructure debt strategies are you already investing and/or planning to invest? Source: BAI Investor Survey 2025.

The very high proportion of Core/Senior (88.2%) reflects the clear dominance of conservative, low-risk strategies. The two categories, risk profile (Core) and capital structure (Senior), are often addressed together in practice and are characterized by stable assets with investment-grade ratings. The focus here is on stable cash flows and predictable returns.

A significant proportion of the LPs surveyed indicated that they invest in whole loans or junior debt (38.2%), which shows that investors in the infrastructure debt sector are looking beyond traditional senior debt strategies to achieve higher returns.⁴¹ As market participants noted, it should be noted that financing in the infrastructure debt sector is typically clearly structured into senior and junior tranches. In this context, however, “whole loan” structures are less common than in other private debt segments. Against this backdrop, it can be assumed that the relevant responses in the survey should be

understood less in the narrow structural sense and more as reflecting junior debt strategies — or, more precisely, higher-yielding credit strategies beyond traditional senior debt. Economically, these investments can therefore be classified as structurally subordinated financing.

The significant proportion of German LPs who reported investing in mezzanine financing (26.5%) indicates that the term is likely interpreted more broadly (not just traditional mezzanine) and reflects a willingness to take on subordinated or hybrid forms of risk. Opportunistic/high-yield strategies (14.7%), which offer higher expected returns but also carry greater risks, have, however, been used rather selectively as a supplement in the infrastructure context to date.

⁴¹ Whole loans refer to a structure in which a lender provides the entire financing. Junior debt, on the other hand, refers to the seniority of an infrastructure debt instrument; in this case, it is subordinated.



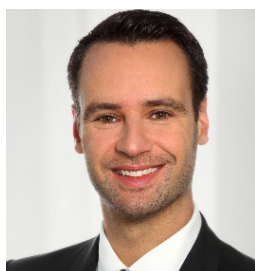
Stefan Friesenecker,
Director Private Debt
and Credit Alternatives,
Schroders Capital

Stefan Friesenecker, Director of Private Debt and Credit Alternatives at Schroders Capital, comments

on the results with regard to differences among investor types: “German insurers remain heavily invested in core/senior (IG) assets in terms of total

volume, but we are also seeing rising allocations to sub-IG. At the same time, there is greater interest in the sub-IG segments from pension investors (regulated and unregulated) as well as other return-oriented investor groups such as family offices and foundations, for whom credit spreads of approximately 5–8% above the benchmark rate offer a very attractive return potential.

We are currently observing increasing engagement from investors who have previously allocated primarily to private credit. This is often driven by portfolio diversification and strong downside protection (including covenants and security packages). In the current environment, investors are seeking inflation-resistant real assets and prefer capital-intensive, more heavily secured infrastructure investments over asset-light business models.”



Stefan Futschik, Head of
Private Debt, Managing
Director, Prime Capital

Stefan Futschik, Head of Private Debt and Managing Director at Prime Capital, views the capital needs of individual market segments within the infrastructure debt sector as key to its appeal:

“From our perspective, strategies in underserved market segments are particularly interesting at present, as they offer attractive yield premiums without requiring a higher risk profile. These approaches often cannot be clearly assigned to traditional categories such as Core, Core Plus, or Opportunistic, which generally originate from equity investing and are less commonly applied in the debt sector. In our opinion,

the most exciting opportunities are found in specialized sub-segments, particularly in HoldCo and junior debt transactions in the lower mid-market, as well as in select, less developed jurisdictions in Continental Europe.”

Furthermore, the surveyed German institutional investors with exposure to infrastructure debt predominantly reported investing in both investment-grade and non-investment-grade infrastructure debt (Figure 14). Similarly, diversification in infrastructure debt is predominantly achieved through both fixed- and floating-rate instruments (Figure 15).

Rating: Should You Invest in Investment-Grade or Non-IG Infrastructure Debt?

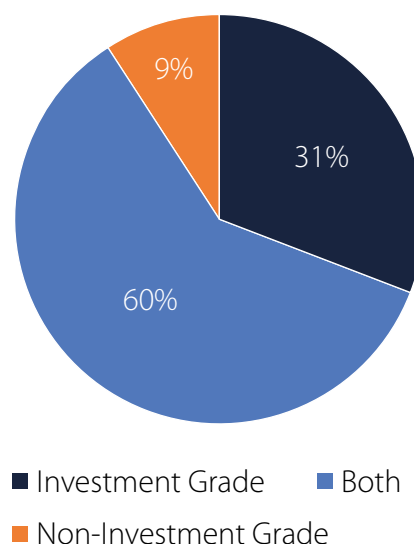


Figure 14: Rating: Should You Invest in Investment-Grade or Non-IG Infrastructure Debt? Source: BAI Investor Survey 2025.

Stefan Futschik, Head of Private Debt and Managing Director at Prime Capital, explains the figures as follows: “In the current market environment, diversification is playing an increasingly central role in portfolio construction—not only across markets and sectors, but also across ratings, structures, and yield profiles. The combination of investment-grade assets to manage the risk profile and non-investment-grade debt to boost returns has therefore proven effective. In addition, fixed-rate structures offer stability, while floating-rate exposure provides flexibility and upside potential across different interest rate environments.”

Fixed Versus Floating Interest Rates: How Do You Invest in Infrastructure Debt?

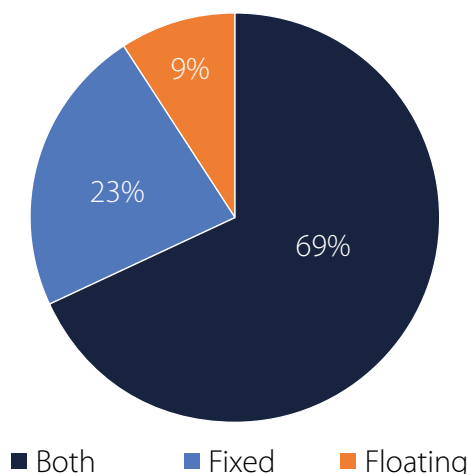


Figure 15: Fixed Versus Floating Interest Rate: How Do You Invest in Infrastructure Debt? Source: BAI Investor Survey 2025.

Stefan Friesenecker, Director of Private Debt and Credit Alternatives at Schroders Capital, explains that, *“from our perspective, German institutional investors often deliberately invest across fixed- and floating-rate structures. ALM-driven investors use fixed-rate instruments in particular because they deliver predictable, long-term stable cash flows and are well-suited for hedging long-term obligations. The trade-off is higher duration and sensitivity to interest rate changes: when interest rates rise or fall, the valuation fluctuates more sharply, but the current income is fixed. Floating-rate structures are closer to typical private credit structures and are used to immunize the portfolio against interest rate hikes or to benefit from higher short-term interest rates. Here, the income is more variable, while the valuation is less heavily driven by the yield curve.*

In practice, many investors combine both components to balance interest rate risk: either the income fluctuates while the NAV tends to remain stable (floating), or the NAV fluctuates more significantly in response to shifts in the yield curve while the current income remains stable (fixed).”

2.1.2. Infrastructure allocation by investor type

- What are the differences between various investor types?

According to the BAI Investor Survey 2025, the average share of infrastructure in the portfolio ranges from 4.6% (single-family offices) to 6.9% (insurance companies), depending on the investor type, for infrastructure equity and debt combined (Figure 16). Interestingly, the data show no correlation between the overall share of alternative investments and the allocation to infrastructure. On average, infrastructure debt has played only a very minor role in institutional portfolios to date. The exception here is insurance companies, which already invest a significant portion of their portfolios (2.6%) in infrastructure debt. Infrastructure debt is currently the asset class in which the largest proportion of surveyed German insurance companies intend to increase their net allocation. German insurance companies are in line with the global trend in this regard. Rising interest rates are a key driver. In addition, structural shifts from real estate toward infrastructure can be observed in the allocations of German insurers.⁴²

⁴² Cf. BAI Investor Report: German Insurance Companies 2026.

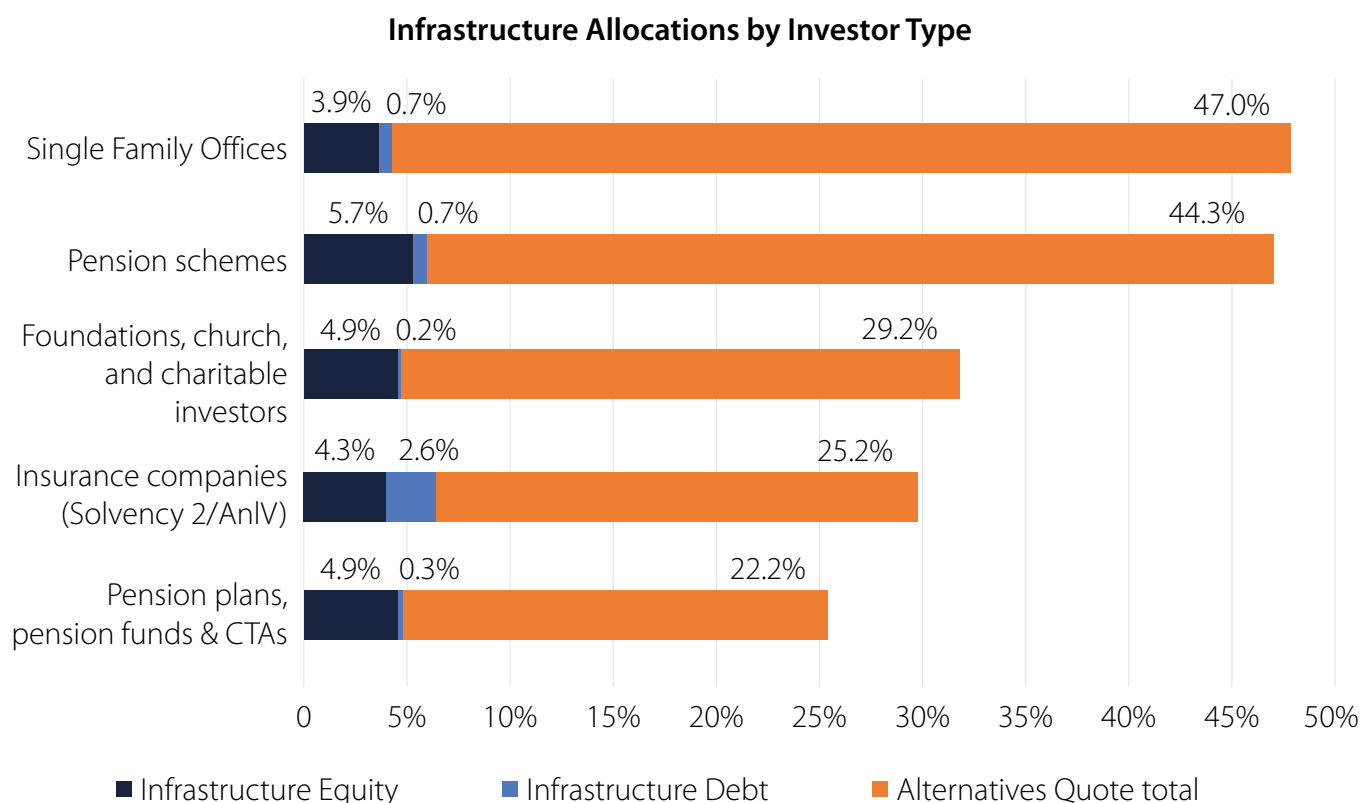


Figure 16: Alternative asset allocation of German institutional investors, with infrastructure equity and debt as components thereof.
Source: BAI Investor Survey 2025.

Deep Dive 9: Infrastructure allocation of a pension fund - Jens Hennes, Pension Fund of the North Rhine Chamber of Pharmacists

Jens Hennes, Pension Fund of the North Rhine Chamber of Pharmacists: *"Our allocation to alternatives is in line with the market average. Including real estate, its share, at around 48%, is on par with that of other pension funds. Within the alternatives, real estate investments dominate, as is typical for the industry. The infrastructure portion accounts for about 5% of the total portfolio and is thus also close to the average for comparable investors. We focus on equity investments, while infrastructure debt has played a minor role thus far. Historically, our infrastructure portfolio initially consisted of renewables with a regional focus on Europe. The current infrastructure strategy, however, aims for diversification across all subsectors of the asset class. As a result, the portfolio has become significantly more international as part of this expansion. Dedicated strategies for the Asia-Pacific region have further reinforced this development."*

2.1.3. Reverse Home Bias: Low German capital in German Infrastructure so far

However, infrastructure in Germany has benefited only marginally so far from the sustained and growing appeal of infrastructure among German institutional investors. Instead, the so-called "reverse home bias" continues to be evident in portfolios:

German institutional investors are investing predominantly in infrastructure abroad. This phenomenon was already examined in detail in the BAI Infrastructure Reports from 2024⁴³ and 2025⁴⁴, where a number of causes were systematically listed and discussed; some of these factors can be applied to the municipal sector (see Chapter 1):

⁴³ BAI Infrastructure Report 2024.

⁴⁴ BAI Infrastructure Report 2025.

- Lack of investable projects in Germany;
- Regulatory factors;
- Reservations about the use of private capital;
- Low risk premiums and inefficiencies due to bureaucracy—unattractive risk-return profile;
- Investments primarily through funds – global diversification.

At the same time, the data revealed a positive trend regarding infrastructure investments in Germany, driven in particular by the renewable energy sector.

Deep Dive 10: Reverse Home Bias at a Pension Fund - Tobias Zahn, SOKA-BAU

Tobias Zahn of SOKA-BAU explains that the share of German assets in their infrastructure portfolio is very low, at only about three to four percent. He confirms that this reflects the frequently discussed reverse form of home bias. Existing investments in Germany are primarily concentrated in renewable energy generation as well as digital infrastructure such as fiber optics and, in isolated cases, data centers. By contrast, the firm has virtually no investments (or only minimal ones) in traditional transportation or municipal utility infrastructure.

He further makes it clear that the low allocation to German infrastructure is primarily due to a lack of deal flow. Since the pension fund invests predominantly indirectly through fund managers, everything depends on how these managers are able to secure suitable transactions. While there are sufficient projects available in sectors such as renewable energy and digital infrastructure, investable, scalable structures are largely lacking in traditional areas such as transportation, utilities, and municipal infrastructure. Many projects are small-scale, individually tailored, and remain in public hands, meaning that standardized and scalable processes are virtually nonexistent.



The perspective of a fund-of-funds manager is relevant for gaining an overview of the infrastructure

fund landscape and the role of German infrastructure within it:

Deep Dive 11: Investments in German Infrastructure from the perspective of a Fund-of-Funds Manager - Max Schönfelder, Real Assets, Helaba Invest

Max Schönfelder, Transactions & Strategy – Real Assets at Helaba Invest, explains that, from the perspective of a fund-of-funds manager, investments in German infrastructure play a minor role overall. While Germany is represented in both European infrastructure fund-of-funds structures and in separate investment and advisory mandates, it is significantly underweighted by international standards. Positive examples do exist, but they are the exception. The prevailing experience is that, in relative terms, German infrastructure investments more often lag behind the returns of foreign projects, and there are various reasons for this. In contrast, Schönfelder points to a series of negative experiences, particularly with green-field projects. Here, he notes, construction cost overruns, lengthy planning and approval processes, and unclear responsibilities have led to below-average returns. In his view, these risks occur more frequently and are more pronounced in Germany than in other European markets.

Schönfelder also highlights the strong influence of public actors as a structural problem. Municipalities often dictate how long an investment should be held and to what extent additional capital must be injected. For equity investors, this represents a risk that is difficult to quantify. Although attempts are made to limit such issues contractually, in practice this often fails due to a lack of consensus between public and private partners.

At the same time, from an investor's perspective, a number of factors speak to the attractiveness of German infrastructure, and municipal infrastructure in particular:

- Positive regional ties, information advantage, and local understanding;
- Germany's high credit rating and economic stability: Stable, predictable cash flows;
- Government backing through public ownership.⁴⁵

The maturation of the infrastructure asset class may also lead to shifts in geographic asset allocation. While the domestic market was central to many investors' entry into the asset class via renewable energy, the subsequent expansion of allocations through funds often led to greater global diversifi-

cation. The current discussion regarding infrastructure investment needs in Germany and the desire of many investors to play an active role is now bringing the domestic market back into focus.

Jens Hennes, Pension Fund of the North Rhine Chamber of Pharmacists: *"Until five years ago, approximately two-thirds of the infrastructure portfolio still consisted of assets in Germany. Since then, that relative share has decreased significantly because we have built up an international portfolio in recent years. When investing in infrastructure in Germany, intrinsic motivation is just as important as economic considerations. Investments in domestic infrastructure are more than just a source of returns. They also make a positive contribution to economic and social development."*

⁴⁵ See [BAI Infrastructure Report 2025](#), pp. 20–22.

Partly due to the drivers mentioned, there are also examples in the German investment landscape of investors whose portfolios are dominated by German infrastructure. Investments in German infrastructure emerged particularly on the equity side during the period of low interest rates and in the renewable

energy sector. Targeted fund selection and favorable regulatory conditions, such as past support mechanisms like the EEG, can also drive higher domestic allocations, highlighting the decisive role of political and regulatory impetus.

Deep Dive 12: Examples of investors with higher Germany allocations in infrastructure - ALH Group, Philips Pension Fund

Alexandra Graf, Division Head within Real Estate Management/Infrastructure at the ALH Group, explains that her infrastructure portfolio does not exhibit a “reverse home bias” and that the focus of her allocation is on Germany. This stems in particular from the infrastructure equity portfolio. The entry into the market occurred in 2015 during the low-interest-rate phase through renewable energy investments, initially in onshore and offshore wind, later supplemented by photovoltaics. Through these investments, Germany has become the core market for the allocation.

Peter Herrmannsberger of Philips Pension Fund also emphasizes that a significant portion of his firm’s infrastructure investments has been deliberately made in Germany. This is attributable in particular to the targeted selection of funds and partners, as well as to the timing of the investments, which allowed the firm to take advantage of attractive conditions, such as subsidies under the Renewable Energy Sources Act.

2.1.4. Summary: The current state of Infrastructure in German portfolios

Infrastructure in German Portfolios – What Role Does Infrastructure Play for German Institutional Investors in an International Comparison?

- Infrastructure allocations were often established during the period of low interest rates and typically through equity investments in the renewable energy sector.
- German investors still have room to catch up in terms of infrastructure allocation, particularly when compared to pioneers such as Canada and Australia.

Infrastructure Debt as a Growth Segment - What Are the Latest Developments in Infrastructure Debt?

- Predictable recurring cash flows and earlier distributions compared to infrastructure equity, as well as the illiquidity and complexity premiums relative to liquid bonds, are driving the growing popularity of infrastructure debt among German institutional investors.
- Conservative, low-risk core/senior strategies dominate, but a significant portion of investors is also specifically seeking higher returns through illiquid or subordinated structures.
- Most investors diversify across different ratings, structures, and yield profiles.

Infrastructure Allocation by Investor Type — *What Are the Differences Among Various Investor Types?*

- Driven by their higher allocation to infrastructure debt, insurance companies have the highest share of infrastructure in their portfolios at 6.9%, while pension schemes have the highest share of infrastructure equity.
- No significant correlation between the total alternative asset allocation in the portfolio and the share of infrastructure.

The Reverse Home Bias — *What Role Does Domestic Infrastructure Play?*

- Examples of German institutional investors and fund-of-fund managers anecdotally confirm the relatively low importance of German infrastructure due to various obstacles.
- Examples of German institutional investors with a relatively high infrastructure allocation in Germany demonstrate the importance of timing and regulatory drivers for geographic asset allocation.

2.2. Trends in infrastructure allocation among German investors

- *What are the current trends?*

The BAI Alternative Investments Sentiment Barometer continues to show that sentiment toward infrastructure equity remains the strongest among all alternative asset classes. This is followed by infrastructure debt, which is on par with corporate private debt.⁴⁶

Regarding planned allocation adjustments, a virtually identical pattern is emerging on both the equity and debt sides: About 54% of investors surveyed in each category said they intend to increase their allocation, while only 8% plan to reduce it (Figure 17).

**Infrastructure Equity and Debt
Allocation Adjustment in %**

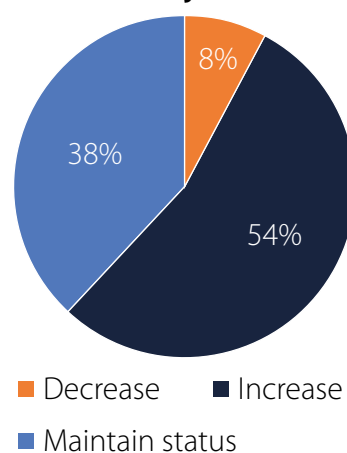


Figure 17: Planned adjustments to infrastructure equity and debt allocations. Source: BAI Investor Survey 2025.

Despite the persistently positive sentiment in the BAI Alternative Investments Sentiment Barometer, driven by the megatrends of digital and environmental transformation, and the continued plans to increase allocations, the share of infrastructure in the average portfolio in the BAI Investor Survey has risen only slightly since 2022. This is due, on the one hand, to more investors becoming active in the infrastructure sector and, on the other hand, to the massive rise in stock markets since then.⁴⁷

⁴⁶ BAI Investor Survey 2025, p. 14.

⁴⁷ Cf. BAI Investor Survey 2022, p. 14.



Tobias Zahn, Portfolio Manager for Alternative Investments, SOKA-BAU

Tobias Zahn, Portfolio Manager for Alternative Investments at SOKA-BAU, explains that the pension fund invests exclusively in equities and that its infrastructure allocation is still being built up. The current allocation stands between four and five percent. The fund recently raised its strategic target allocation for infrastructure, with the aim of increasing it to around ten percent by 2036. Regarding the composition of the current allocation, he explained that the pension fund invests primarily through traditional primary funds but also uses co-investments to achieve faster capital calls, smooth the J-curve, reduce costs, and improve returns. The portfolio is broadly diversified across regions.

He explains that the planned increase in the infrastructure allocation to around ten percent is driven primarily by the diversification benefits this asset class offers within the portfolio and by high global investment demand. This demand relates both to the modernization of primarily existing infrastructure in Europe and North America and to ongoing new construction in Asia. Key drivers include, in particular, supply security, energy and heating transition, digitalization, and the general need to renew aging network and system infrastructure.

The approach aims to avoid cyclical dependencies and ensure long-term stability. He cited the currently low deal volumes in several market segments and the increasingly difficult exit environment as key challenges. This, in turn, complicates fundraising for many managers, particularly for new and smaller providers.

2.2.1. Trends and drivers of allocation adjustments

In addition to the ecological transformation that has dominated in recent years, increasing digitalization and the trend toward artificial intelligence continue to drive German investors' infrastructure allocations:

Jens Hennes of the North Rhine Chamber of Pharmacists' Pension Fund views digital infrastructure as an important strategic portfolio component, driven by the structural megatrend of digitalization. However, he prefers to invest in earlier project phases, as he believes these offer more attractive risk-return profiles. Hennes, on the other hand, takes a critical view of long-term buy-and-hold

strategies for existing data centers, as technological developments, such as in the area of cooling, make it more difficult to predict the long-term value retention of these assets.

Furthermore, the higher-than-expected interest rates, which have persisted longer than expected⁴⁸, are also affecting investors' infrastructure portfolios. However, the BAI Investor Survey 2025 shows no increase in the weighting of liquid bonds in portfolios at the aggregate level and thus no displacement of infrastructure by bonds.⁴⁹ According to the investors surveyed, shifts are more likely to occur between alternative asset classes and within the infrastructure asset class itself. Opportunities for structural adjustments arise in particular from planned reinvestments

⁴⁸ Cf. *BAI Investor Report on German Insurance Companies 2026*, pp. 18–20.

⁴⁹ *BAI Investor Survey 2025*, p. 13.

of maturing existing investments. The initial build-up of infrastructure allocations often began at the start of the low-interest-rate period and was driven by EEG legislation. Accordingly, investments from this first wave are frequently nearing maturity and require deliberate decisions regarding reallocation.

Peter Herrmannsberger of Philips Pension Fund

emphasizes that rising bond yields do not necessarily lead to a decline in the importance of infrastructure investments. Rather, his firm plans to keep the overall alternative asset allocation largely stable, including infrastructure. Adjustments would be more likely to result from strategic considerations within asset allocation, such as the potential inclusion of new investment forms, rather than being driven primarily by more attractive bond yields.

However, he acknowledges that the changed interest rate environment, with real returns once again turning positive, provides an important impetus to fundamentally review the asset allocation. This, however, would lead less to shifts between asset classes and more to greater differentiation within the individual segments. For example, certain infrastructure or real estate strategies could lose appeal, while others, such as those at the intersection of infrastructure and real estate, could gain in importance.

Regarding the further development of the infrastructure portfolio, he sees his firm in a wait-and-see but strategically open position: As existing investments mature, natural opportunities for reinvestment will arise in the coming years. These should be used to selectively evaluate new opportunities, particularly against the backdrop of the ongoing infrastructure transformation in Germany. A prerequisite for this, however, is that political initiatives, investor interests, and specific projects be better aligned and more

strongly standardized—an area in which there is currently still considerable room for improvement.

Christian Chrobok of WPV, on the other hand, argues that directly held fixed-income securities, particularly government bonds, have recently regained importance relative to alternative asset classes. While he qualifies this by noting that higher yields on government bonds must also be viewed against the backdrop of increased government debt, he currently sees attractive absolute returns given comparable risks. Overall, the firm has not actively reduced its infrastructure asset class (equity/debt) but has instead gradually increased its direct holdings to comply with the ALM study recommendations and the SAA derived from them. Against the backdrop of inflation and interest rate expectations, inflation-linked cash flows will promote long-term investments, particularly in the infrastructure sector.

Another trend regarding shifts within infrastructure allocations is the growing importance of secondaries. The maturation of the asset class — from a niche to a firmly established component in the portfolios of German institutional investors — is also contributing to increasing liquidity and the emergence of a secondary market. According to Preqin data, concerns about liquidity among global investors are currently leading to a rapid rise in the valuation outlook for the secondaries sector.⁵⁰

2.2.2. Renewable energy: Entry anchor under structural pressure

Within this finding of a reverse home bias, the renewable energy sector constitutes an exception to a certain extent. Renewable energy in Germany has often served as an entry point into the asset class for institutional investors and continues to account for a large portion of the already limited domestic

⁵⁰ *Preqin Global Report: Infrastructure in 2026*, pp. 66–67.

allocation. Recent data has also shown a positive trend regarding allocation to German infrastructure projects, and according to market participants, policy efforts — such as shorter approval processes in the renewable energy sector — are beginning to bear fruit.⁵¹

However, current developments make it clear that this segment is not without its own structural challenges. Market participants' assessments indicate that renewable energy in Germany is increasingly caught between structural opportunities and shifting risk profiles. In particular, increased electricity price volatility and the phenomenon of negative electricity prices are leading to a reassessment of traditional investment strategies.

Deep Dive 14: Negative electricity prices from an investor's perspective – Alexandra Graf, ALH Group

Alexandra Graf of the ALH Group describes the issue of negative electricity prices as one of the key challenges for investments in renewable energy in Germany. Particularly for traditional wind and solar projects, the increasing volatility of the electricity markets is making it significantly more difficult to forecast cash flows. Against this backdrop, the company is currently not evaluating any new German projects in these segments.

Instead, the focus has shifted increasingly toward the battery storage sector. Provided the regulatory framework remains stable, this segment could be attractive to both equity and debt investors — though only under clearly defined conditions. On the equity side, projects that are already well advanced — particularly in the permitting process and in coordination with grid operators — are the primary candidates, as this would allow for prompt construction and grid connection.

On the debt side, it is crucial that stable and predictable cash flows be ensured. This generally requires long-term contractual structures, such as tolling agreements or comparable models, that are secured over a sufficiently long period. Without such long-term contractual arrangements, the necessary cash flow stability is difficult to demonstrate from an insurance investor's perspective.

Other investors surveyed also confirm the changed market conditions in the renewable energy sector in Germany and the differentiation based on the timing of investment. According to them, first movers were sometimes still able to benefit from better conditions.

Peter Herrmannsberger of Philips Pension Fund expressed satisfaction with the infrastructure port-

folio's performance to date, even though market conditions have since changed — for example, due to electricity price trends and the issue of negative electricity prices. While later investors have been more severely affected by these changes, the existing portfolio has, in some cases, benefited from its early market entry. In addition, the advanced life cycle of the assets opens up new strategic options, such as leveraging repowering potential at older wind farms.

⁵¹ BAI Infrastructure Report Germany 2025.

With regard to negative electricity prices, however, it must also be taken into account that, from an economic perspective, these also represent a market signal for successful renewable energy expansion and indicate that more clean energy is immediately available. The economic imbalance arises primarily from the subsidy logic of the EEG, which pays remuneration even during such hours. This, however, creates a problem for business models that rely solely on revenue generation.

Furthermore, the picture of renewables from an investor's perspective varies by project phase.

Jens Hennes, of the North Rhine Chamber of Pharmacists' Pension Fund, currently takes a somewhat mixed view of renewable energy: Positive experiences have been gained particularly in the late development phases, shortly before projects are completed. At these stages, he notes, significant permitting risks have already been mitigated, yet there is still potential for value appreciation. He takes a more skeptical view of investments in completed projects, as these depend primarily on ongoing cash flows, offer less upside, and carry asset-management risks. Against this backdrop, he is currently tending toward caution in the renewables sector.

2.2.3. Summary: Trends in Infrastructure allocation among German investors

- *What are the current trends?*

Trends and drivers of allocation adjustments

- Sentiment among German institutional investors regarding infrastructure investments remains very positive. The majority plans to further expand their exposure, and the trend is nearly identical on both the equity and debt sides

- In addition to the green transition, artificial intelligence and digital transformation are coming to the forefront.
- With interest rates remaining higher for longer than originally expected, bonds are regaining some of their appeal. However, shifts are expected to occur primarily between alternative asset classes and within asset classes.
- Due to maturing existing investments, planned reinvestments are coming to the forefront.

Renewable energy: Entry points under structural pressure

- Renewable energy in Germany remains a central component of institutional infrastructure portfolios.
- Changing market conditions are creating challenges and shifting investment approaches: Traditional buy-and-hold strategies in standardized wind and solar projects are losing appeal, while structured, risk-adjusted approaches are gaining importance.
- At the same time, attractive investment opportunities are emerging in segments that, in addition to energy production, play a central role in the energy transition: in particular, battery storage and repowering.



3. Summary and proposed solutions



The infrastructure asset class has matured in recent years in terms of its importance to institutional investors and accounts for a significant share of portfolios, averaging 5.6%. Despite the persistently positive sentiment in the BAI Alternative Investments Sentiment Barometer, driven by the megatrends of digital and ecological transformation, and the continued plans to increase allocations, the share of infrastructure in the average portfolio in the BAI Investor Survey has risen only slightly since 2022. This is due, on the one hand, to more investors becoming active in the infrastructure sector and, on the other hand, to the massive rise in stock markets since then. The environment for renewable energy in Germany is perceived as challenging. However, areas such as repowering and battery storage are gaining importance, and digital infrastructure is a key driver.

The need for infrastructure investment in Germany is enormous, particularly at the municipal level. Despite German investors' high willingness to invest, private capital from institutional investors has played only a minor role so far. Asset managers play a crucial

role in matching the capital needs of municipalities and municipal utilities with investor supply. A relatively small number of players are already active in this sector, but their activities are predominantly project-based rather than portfolio-based and are concentrated primarily in market-oriented segments such as power generation or district heating networks.

Asset managers face a complex set of challenges when developing municipal infrastructure as an asset class. Small-scale project structures lead to high complexity and make it difficult to create standardized investments. This results in limited access to investable projects as well as a risk-return profile that asset managers perceive as unattractive. At the same time, the market is currently experiencing significant momentum, and both asset managers and investors are working on potential solutions.

To attract more private capital to the municipal infrastructure sector, policymakers must engage in dialogue with market participants and stakeholders. Targeted solutions require:

- **A political consensus on the role of private capital:** The federal government, states, and municipalities must agree on a stable regulatory framework that reliably integrates private capital over the entire investment period — regardless of election cycles.
- **Platform models, stakeholder consortia, and standardization of municipal assets to reduce complexity:** Asset managers, municipal utilities, and institutional investors should jointly develop scalable structures that make small-scale municipal projects bundleable and investable, drawing on existing examples.
- **Use of appropriate ownership structures and openness to different models, depending on the asset type and municipal requirements:** Decision-makers must assess early on which structural model, e.g., joint venture, SPV, hybrid capital, is best suited to the asset in question and involve citizens from the outset.
- **Public investment and financing vehicles should pool existing resources:** efficient use of the existing funding landscape, pooling of resources (e.g., EIB, KfW) and the systematic use of financing instruments — through targeted risk-sharing in the form of, for example, guarantees or first-loss structures that create incentives for private investors where market mechanisms do not function.



Technical Appendix

A practical approach to classifying companies within the municipal infrastructure sector. The benchmark was derived from Creditreform Rating's credit default data (see 1.3.2 Analysis of the risk-return ratio of municipal infrastructure using credit default data).

A – Municipal Infrastructure

Core sectors of municipal infrastructure:

- **Energy supply (WZ code group 35)**
 - **Clearly municipal:**
 - 35.13.0 Electricity distribution
 - 35.22.0 Gas distribution
 - 35.30.0 Heating and cooling supply
 - Partially municipal (depending on the owner), but not included due to the lack of clear delineation:
 - 35.11.x Electricity generation
 - 35.21.x Gas generation
- **Water supply (WZ code Group 36)**
 - **Clearly municipal:**
 - 36.00.1 Water extraction with external supply for distribution
 - 36.00.2 Water extraction without external procurement for distribution
 - 36.00.3 Water distribution without extraction
- **Collection, treatment, and disposal of waste; recycling (ISIC Code Group 38)**
 - **Municipal services:**
 - 38.11.0 Collection of non-hazardous waste
 - 38.21.0 Treatment and disposal of non-hazardous waste
- **Land transportation and freight (ISIC Code Group 49)**
 - **Clearly municipal:**
 - 49.31.0 Local land passenger transportation (excluding taxis)
- **Telecommunications (NACE Code Group 61)**
 - **Clearly municipal:**
 - 61.10.0 Wired telecommunications

Classification is based on WZ company codes⁵². For methodology and data sources, see the Creditreform Infrastructure Monitor.⁵³

B - Social Infrastructure, Potentially Relevant for PPPs:

- **Health care (NACE code group 86)**
 - 86.10.1 Hospitals (excluding university hospitals, preventive care, and rehabilitation clinics)
 - 86.10.2 University hospitals
 - 86.10.3 Preventive Care and Rehabilitation Clinics
- **Residential facilities (excluding recreational and vacation facilities) (NACE Code Group 87)**
 - 87.10.0 Nursing homes
 - 87.30.0 Retirement homes; residential facilities for the elderly and people with disabilities

⁵² WZ codes.

⁵³ pp. 26–31

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- We are representing the interests of the industry to politics and regulators
- We are serving as a catalyst between professional German investors and recognized worldwide providers of Alternative Investments products and services
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- [BAI Real Assets Symposium 2026, 19.11.2026, Westin Grand Hotel, Frankfurt am Main](#)
- [Workshop Sustainable Finance & ESG 2026, 02.12.2026, Audimax des Frankfurt School Forum, Frankfurt am Main](#)
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