INSIDE INFRASTRUCTURE DEBT

Bristol Airport, United Kingdom

MACQUARIE ASSET MANAGEMENT

Infrastructure debt's HALO shines bright

The gap between what infrastructure needs and what governments and banks can provide is widening. This imbalance is structural, reshaping who finances infrastructure and on what terms. As traditional funding sources struggle to keep pace with rising investment requirements, private lenders are increasingly stepping in to fill the gap. At the same time, supportive macro conditions, including persistent inflation, and long-term secular trends – digitalisation, decarbonisation, demographics, and deglobalisation – continue to expand the opportunity set.

If you only have a minute

- Governments and traditional lenders are struggling to meet growing infrastructure financing needs, creating an expanding opportunity for private capital to fill the gap.

- A higher-rate and persistent inflation environment provide a supportive backdrop for floating-rate private infrastructure debt.

- Digitalisation, decarbonisation, demographics and deglobalisation are driving multi-decade infrastructure investment requirements, supporting a durable pipeline of financing opportunities.

Why HALO(ID) matters

Infrastructure debt benefits from the **HALOID** effect – **H**ard **A**ssets, **L**ow **O**bsolescence and **I**nelastic **D**emand across economic cycles. Backed by essential, hard-to-replace assets, it can support income and help mitigate downside risk through covenants. It may also diversify portfolios relative to other credit strategies, given its lower reliance on GDP growth and its contracted or regulated cash flows.

Together, these features help position infrastructure debt to benefit from supportive macro conditions and long-term secular trends.

Three macro conditions are supporting the opportunity right now

1 Legislation and the financing gap

Infrastructure demand is rising just as sovereign debt burdens remain elevated, creating a financing challenge for governments. Legislation across major markets is supporting a pipeline of bankable projects while traditional banks have simultaneously pulled back from longer-duration and sub-investment-grade lending. This dynamic has opened the door for private lenders to step in with flexible capital to access long-term, predictable cash flows (Figure 1).

Breaking down the financing opportunity (Figure 1)
Share of total global infrastructure investment

Market share (%)	2013	2024	2034 (proj.)
Government / public budgets	70-75%	60%	55%
Commercial bank loans	18-20%	10-11%	11%
Private (non-bank) capital	2-3%	12-13%	26%
Other	6-8%	8%	8%

Source: Macquarie Asset Management. As of June 11, 2026. See footnotes for calculation methodology.[1]

Chart takeaway

As traditional funding sources pull away, infrastructure is relying more on private capital, increasing the opportunity set for investors.

2 Persistently high interest rates

After a period of monetary easing in 2025, central banks are either holding rates steady or considering hiking. In the US, the current policy rate of 3.50-3.75% sits roughly 100 basis points (bps) above the long-term average.[2] These higher rates benefit private infrastructure debt, which typically have exposure to floating-rate coupons so they don't experience duration risk or spread widening sensitivity like many high-yield bonds.

3 Stubborn and elevated inflation

Inflation has stayed above target, leading central banks to pause rate cuts rather than pivot to easing. Infrastructure debt can help mitigate inflation risk through two channels: many loan agreements include explicit inflation-linkage, while the underlying assets often carry enough pricing power to pass cost increases through to end users.

Four secular trends support infrastructure debt for the long term

Secular megatrends are creating sustained demand for infrastructure financing that neither governments nor commercial banks are positioned to meet at scale (Figure 2). While the five-year trend implies nearly $US20 trillion in spending, the 15-year outlook rises to over $US60 trillion.[3]

Secular shifts are driving over trillions in projected investment needs (Figure 2)

Digitalisation | Decarbonisation | Demographics | Deglobalisation

	Transportation	Digital infrastructure	Renewables	Utilities and power	Social infrastructure
Projected cumulative spend ($USD)	**$7.5T**	**$1.7T**	**$2.2T**	**$3.4T**	**$6.1T**
Forecasted 5-year CAGR[4]	**2.6%**	**3.7%**	**3.5%**	**2.4%**	**1.4%**
Annual funding gap	**$US 3.7 trillion**				

Source: PwC, "Global Infrastructure Outlook 2025–50," April 28, 2026. Forecast modelling by Oxford Economics. Annual funding gap source: GI Hub, accessed June 15, 2026. Note: All spending figures are in 2023 US dollar prices.

Chart takeaway

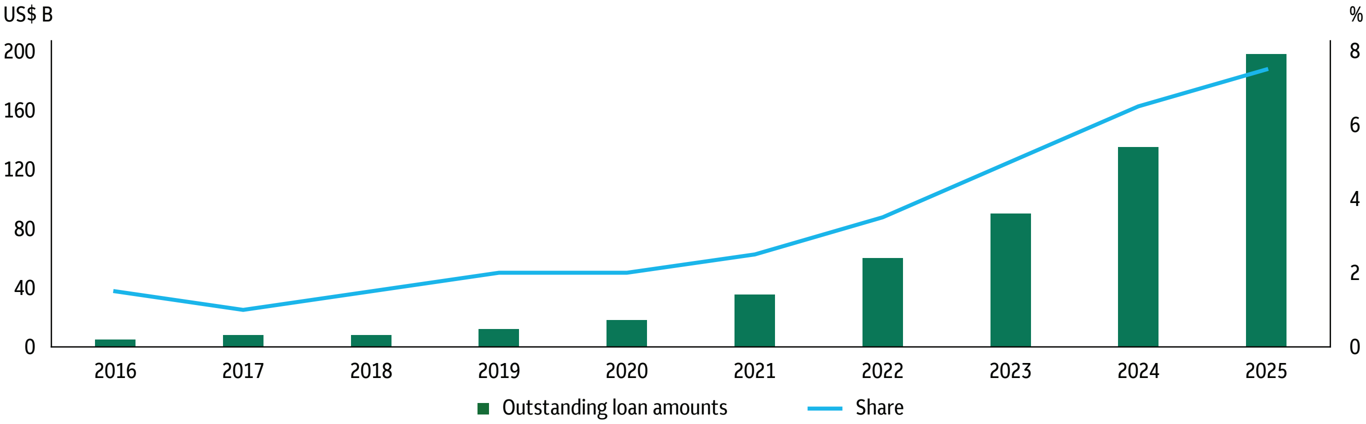
These secular shifts represent ongoing, multi-decade investment needs, helping support consistent deal flow for infrastructure debt.

Digitalisation

Digital transformation – including AI, cloud adoption, and new technologies such as driverless cars and the internet of things – is driving sustained demand for data centres and fibre networks. In the US, new fibre miles are projected to increase 2.3x from 2024 to 2029,[5] while data centre spending on AI alone could rise by $US 100-225 billion per year over the next five years.[6]

AI investment has already surged, and financing needs are following suit. The companies driving this boom have historically funded growth through operating cash flows, but rising capex needs are increasingly pushing them toward external financing, including private credit (Figure 3). Over the past five years, private credit for AI has increased more than fivefold – from roughly $US 35 billion to nearly $US 200 billion – and estimates suggest it could reach $US 300-600 billion by 2030.[6]

Private credit is funding the AI boom (Figure 3)



Source: BIS Bulletin, "Financing the AI boom: from cash flows to debt," January 7, 2026. AI is defined as firms operating in the Pitchbook-defined verticals "Artificial Intelligence", "Big Data" and "Cloud Tech".

Chart takeaway

Digital infrastructure requires significant expansion, supporting a financing need that can help sustain income generation over time.

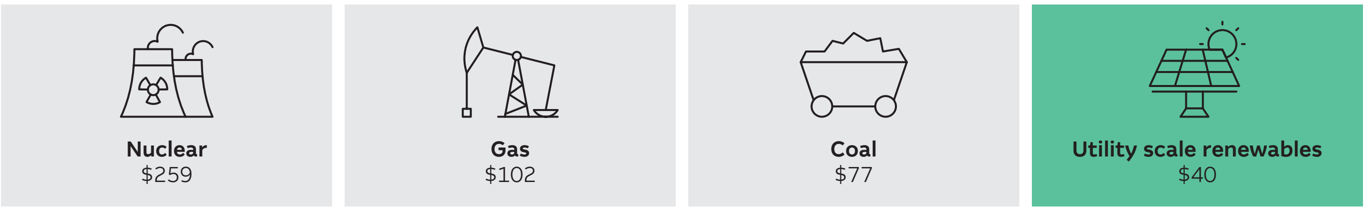
For infrastructure debt investors, meeting these funding needs may translate into a steady pipeline of potential deals. We believe this investment cycle will be further supported by growing bandwidth needs and expanding use cases, which has historically shown limited sensitivity to broader economic conditions.

Decarbonisation

The shift toward decarbonisation is expanding opportunities in infrastructure debt, particularly across projects addressing power imbalances, grid upgrades, energy storage and reshoring for energy security. From 2026–2035, global grid spending is expected to reach $US5.9 trillion to replace, reinforce or build new connections.[7]

In the US, the focus has shifted more toward energy independence, while in Europe, decarbonisation and energy security are driving investment. In both regions, renewables are expected to play a major role, supported by their cost competitiveness and relatively fast build times, even as policy support diverges by market and technology. For example, the **unsubsidised levelised cost of electricity remains lower for utility scale renewables than for more traditional sources of power** (Figure 4).[8]

Unsubsidised levelised cost of electricity (Figure 4)
($US / MWh)

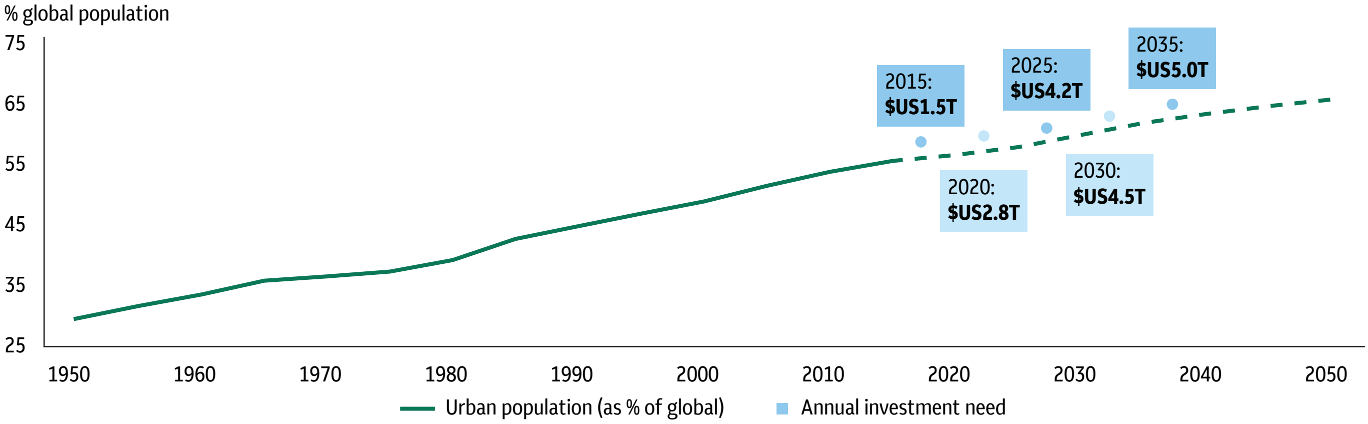


Source: BloombergNEF. "Levelised Cost of Electricity Update 2026." Note: Global benchmarks are capacity-weighted averages using the latest market estimates. Carbon pricing is included where policies are already active. Subsidies and tax credits are excluded. LCOE cost of electricity shown by financing date. Utility scale renewables include onshore wind and fixed-axis photovoltaic solar. Nuclear data calculated as a simple average of US, China, Finland, France, UK and UAE as of 2025.

Demographics

Global population growth, ageing and urban migration are increasing demand for investment in transportation, healthcare and housing. Two-thirds of the global population is projected to live in urban centres by 2050,[9] and that shift is accelerating demand for transit, healthcare facilities and housing – infrastructure categories increasingly financed through private debt as public funding falls short (Figure 5).

Urbanisation increases infrastructure needs, but funding gaps are significant (Figure 5)



Sources: Macquarie Asset Management. Global urban population share 1950–2050. Labels show the annual infrastructure funding gap at each sourced data point. Source for population data: Our World in Data / UN World Urbanisation Prospects. Source for funding gap data: 2015: McKinsey & Co, GI Hub. 2017: GI Hub–Oxford Economics Global Infrastructure Outlook. 2020: World Bank, CCFLA. 2024: UN-Habitat WCR 2024; CCFLA 2024. 2025: Allianz Trade "3.5% to 2035" (July 2025). 2030 & 2035: Allianz Trade projection.
Note: Methodologies for funding gap calculations may differ and may not be comparable across the various sources.

Chart takeaway

Population growth and urbanisation are increasing demand for essential infrastructure, while funding constraints create a growing role for private debt to finance these needs.

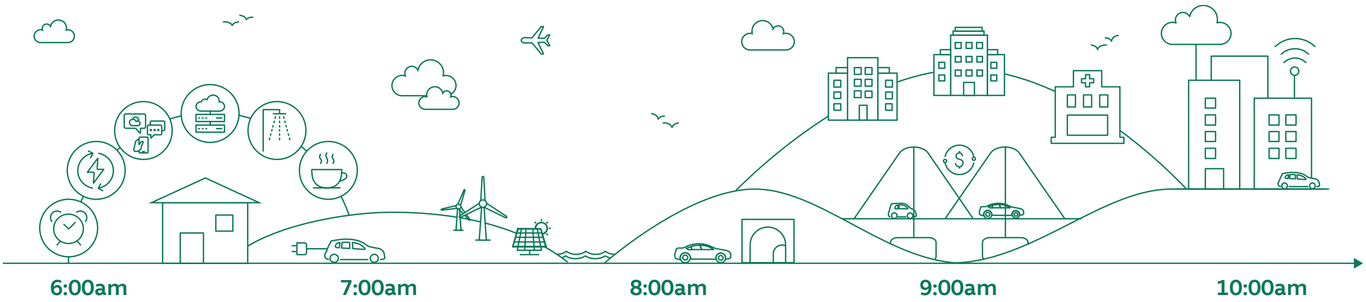
Deglobalisation

Geopolitical instability has exposed supply chain vulnerabilities and elevated energy security as a policy priority. As governments seek to reshore critical manufacturing and improve domestic self-sufficiency, demand is rising for new infrastructure builds and domestic power sources. Recent legislation has encouraged this reshoring, but the pace of change has been slow. Funding constraints appear to be a key bottleneck, presenting an opportunity for private lenders to help accelerate the transition.

A day in the life underscores the secular growth story

These secular trends are reflected in everyday usage, where essential infrastructure underpins daily economic activity. Infrastructure is no longer just roads, bridges and utilities; it now extends to include digital and less visible networks.

Illustration of assets and services used every day (Figure 6)



Utilities and Power
Electricity, gas and water networks keep your home running from the moment you wake up

Digital Infrastructure
Wireless networks, fibre and data centres keep you connected throughout your morning

Renewables and energy transition
Power generation flows through the grid, ensuring homes, businesses and connected devices are ready for the day ahead

Transportation
Toll roads, tunnels and bridges move you efficiently from home to office

Social Infrastructure
Offices, hospitals and public buildings form the backbone of our communities

Source: Macquarie Asset Management. For illustrative purposes only.

This illustration highlights the infrastructure assets and services that underpin our daily activities:

- Electricity runs through the regulated grid to power an alarm clock, phone charger, internet connection, water heater, exercise bike and other household devices.
- Cell towers and mobile switching centres support mobile connectivity, while 5G towers, small cells, fibre backhaul and edge nodes make app-based services possible.
- Data centres powered by long-term power purchase agreements help support digital activity, while globally connected charging networks and cloud infrastructure enable services such as music streaming and app usage.

Together, these systems show how deeply embedded infrastructure has become in our daily lives. That high-use, essential profile helps support durable demand for the underlying assets.

The bottom line: A complementary income opportunity

The financing gap, supportive macro conditions and long-term secular trends together point to a structural role for infrastructure debt in portfolios. For investors with existing investment-grade fixed income, it may offer a diversifying income profile: greater reliance on contractual income rather than market-dependent cash flows, inflation linkage embedded in the asset structure and reduced sensitivity to changes in credit spreads or rate sentiment.

Endnotes

1. Base year market size of $4.4tn: PwC, Oxford Economics, "Global Infrastructure Trends," 2024. 2013 base of $2.6tn and 4.9% CAGR: McKinsey Global Institute, "Infrastructure Productivity: How to Save $1 Trillion a Year," January 2013. Government share of ~60%: World Bank Open Knowledge, "Mobilising Private Finance for Development," 2024. Non-bank private capital, including managed funds and direct investments, CAGR of 13% based on infrastructure debt AUM growth of 23.1% and overall private infrastructure AUM growth of 19.7% since 2015: GI Hub, Preqin, "Infrastructure Monitor 2024," 2024. Commercial bank share declined from ~80% post-GFC to ~60% by 2022. Cited figures refer to bank share within private infrastructure debt only; used to establish direction of decline in total market share calculations above: Cambridge Associates, "Infrastructure Debt: Understanding the Opportunity," 2014; Open Book Publishers, "The Infrastructure Finance Challenge," 2016; GI Hub, Preqin, "Infrastructure Monitor 2024," 2024. Other categories including development finance, multilateral development banks, export credit agencies and corporate balance sheet financing held constant at 8% as simplifying assumption. All projections are extrapolations of historical trends; no single authoritative dataset covers all financing categories simultaneously at the global level.
2. As of June 21, 2026. Source: FRED, Macquarie Asset Management. Long-term average for nominal interest rates from 12/03-09/25 was 2.6%.
3. PwC, "Global Infrastructure Outlook 2025–50," April 8, 2026. Forecast modelling by Oxford Economics.
4. CAGR refers to compounded annual growth rate.
5. Fiber Broadband Association "The Underappreciated Need to Enable AI and Data Center Growth: Increased and More Strategic Fiber Interconnections" (July 2025).
6. BIS Bulletin, "Financing the AI boom: from cash flows to debt," January 7, 2026. AI is defined as firms operating in the Pitchbook-defined verticals "Artificial Intelligence", "Big Data" and "Cloud Tech".
7. BNEF, "New Energy Outlook 2025: Grids" (August 2025).
8. BloombergNEF. "Levelised Cost of Electricity Update 2026." Note: Global benchmarks are capacity-weighted averages using the latest market estimates. Offshore wind includes offshore transmission costs. Carbon pricing is included where policies are already active. Subsidies and tax credits are excluded. LCOE cost of electricity shown by financing date. CCGT is combined-cycle gas turbine, solar is fixed-axis photovoltaic solar. Nuclear data calculated as a simple average of US, China, Finland, France, UK and UAE as of 2025.
9. United Nations, "UN 2020 and Beyond," accessed May 27, 2026.

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