

Green Infrastructure in the Decade for Delivery: Assessing Institutional Investment

POLICY HIGHLIGHTS



Green Infrastructure in the Decade for Delivery: Assessing Institutional Investment

Energy, water, transport, health and other infrastructure are critical for socio-economic development. Yet, infrastructure suffers from an annual investment gap of USD 2.5-3 trillion globally, despite the attention that this challenge has attracted. The ongoing public health emergency is a telling reminder of the risks of underinvestment in essential infrastructure. Among other things, underinvestment compromises our ability to effectively respond to systemic challenges.

Given the long lifecycle of infrastructure assets, investment decisions today will have lasting implications for global climate and development trajectories. Delivering on international climate and development goals requires a shift to and scaling up of investments in green infrastructure. However, tightening fiscal space and debt ceilings have constrained public investment in many countries, thereby adding to the aggregate investment gap and jeopardising chances to meet climate and sustainable development objectives. The need to mobilise private capital at scale towards critical infrastructure development is urgent.

Institutional investors are one such critical pool of private capital. While much effort has been dedicated to increasing institutional investment in infrastructure, it still accounts for only a small fraction of institutional portfolios. Persistent low returns on traditional investments such as bonds and stocks, however, are motivating more institutional investors to look to alternatives, including infrastructure. The momentum created by this trend, and increasing interest in sustainability among institutional investors, presents an opportunity to scale-up institutional investment in green infrastructure.

A nuanced understanding of the current investment landscape and investment preferences is key to accelerate and shift institutional investment in green infrastructure. To address knowledge gaps in these areas, the OECD report “Green Infrastructure in the Decade for Delivery – Assessing Institutional Investment” makes the following key contributions:

- An estimate of investable assets under management (AUM) of institutional investors (pension funds and insurance companies) to anchor expectations around the role of institutional investors in infrastructure development;
- A first of its kind comprehensive empirical mapping of current holdings (i.e. stock, not flows) of institutional infrastructure investment, for pension funds, insurance companies, sovereign wealth funds and asset managers domiciled in OECD and G20 countries;
- A framework for policy analysis of institutional investment, highlighting key levers and identifying policy priorities to scale-up institutional investment in green infrastructure.

1 Investable AUM of institutional investors

Infrastructure investment is key to economic growth, meeting climate and sustainable development goals, and ensuring resilience to systemic challenges like the COVID-19 crisis and climate change. Yet, infrastructure investments globally fall USD 2.5 – 3 trillion short of estimated annual needs, and remain misaligned with climate mitigation and resilience goals.

Institutional investors in OECD and G20 countries have at least USD 64.8 trillion in AUM- a measure against which policies and other mobilisation efforts are often evaluated. However, considerations for example regarding diversification, portfolio concentration, and regulatory quantitative limits on asset allocation (for pension funds and insurance companies) mean that not all AUM are available for infrastructure investments. Therefore targeted mobilisation efforts requires a more nuanced frame of reference than high-level estimates of total AUM.

Taking regulatory quantitative investment limits as a starting point, this report has developed an estimate of the maximum institutional capital that theoretically could be channelled towards infrastructure investments: **the investable AUM**. This report finds that under current investment regulations in OECD and G20 countries, pension funds and insurance companies can allocate a **maximum of USD 11.4 trillion towards infrastructure (investable AUM)**. This estimate should be treated as a theoretical regulatory upper bound.

As this estimate of USD 11.4 trillion of investable AUM is far higher than institutional investors' current investments (see below), the estimate suggests that regulatory limits are generally not a constraint. It also suggests that simply "fixing the regulation" will not be sufficient in itself to trigger massive institutional investment in the infrastructure sector, at least as far as regulation on quantitative limits are concerned.

Figure 1. **Breakdown of Investable AUM and the share of Infrastructure Investment**



2 Empirical mapping of current holdings of institutional infrastructure investment

Accelerating and shifting institutional investment in green infrastructure requires a clear and granular understanding of the current investment landscape. The report “Green Infrastructure in the Decade for Delivery – Assessing Institutional Investment” presents a comprehensive empirical mapping of infrastructure investment by institutional investors domiciled in OECD and G20 countries with a view to assess progress and provide a baseline for future tracking.

Any discussion on how to accelerate and shift institutional investment in new green infrastructure assets benefits from a granular empirical overview of current investments. The underlying dataset of this report allows a targeted examination of how different types of institutional investors invest, or could invest, in infrastructure. The set covers current infrastructure holdings by pension funds, insurance companies, sovereign wealth funds and asset managers domiciled in OECD and G20 countries in early 2020. While it employs rigorous empirical methodology to overcome current data gaps, data unavailability on certain parameters, most notably bond ownership and use of proceeds, continues to be a constraint.

Institutional investment in infrastructure by sector and financial instrument

Given the overall infrastructure investment gap, and that close to 60% of the urban infrastructure to exist by 2030 is yet to be built, this analysis focuses on modalities to maximise the impact of institutional investments on the real economy. Thus, the bulk of the analysis is **focused on holdings through unlisted funds, project-level equity and debt as well as structured products** with direct exposure to real assets. For completeness and comparison, the empirical mapping in the report also tracks investment in infrastructure-related corporate stocks, which is not shown in this Policy Highlight.

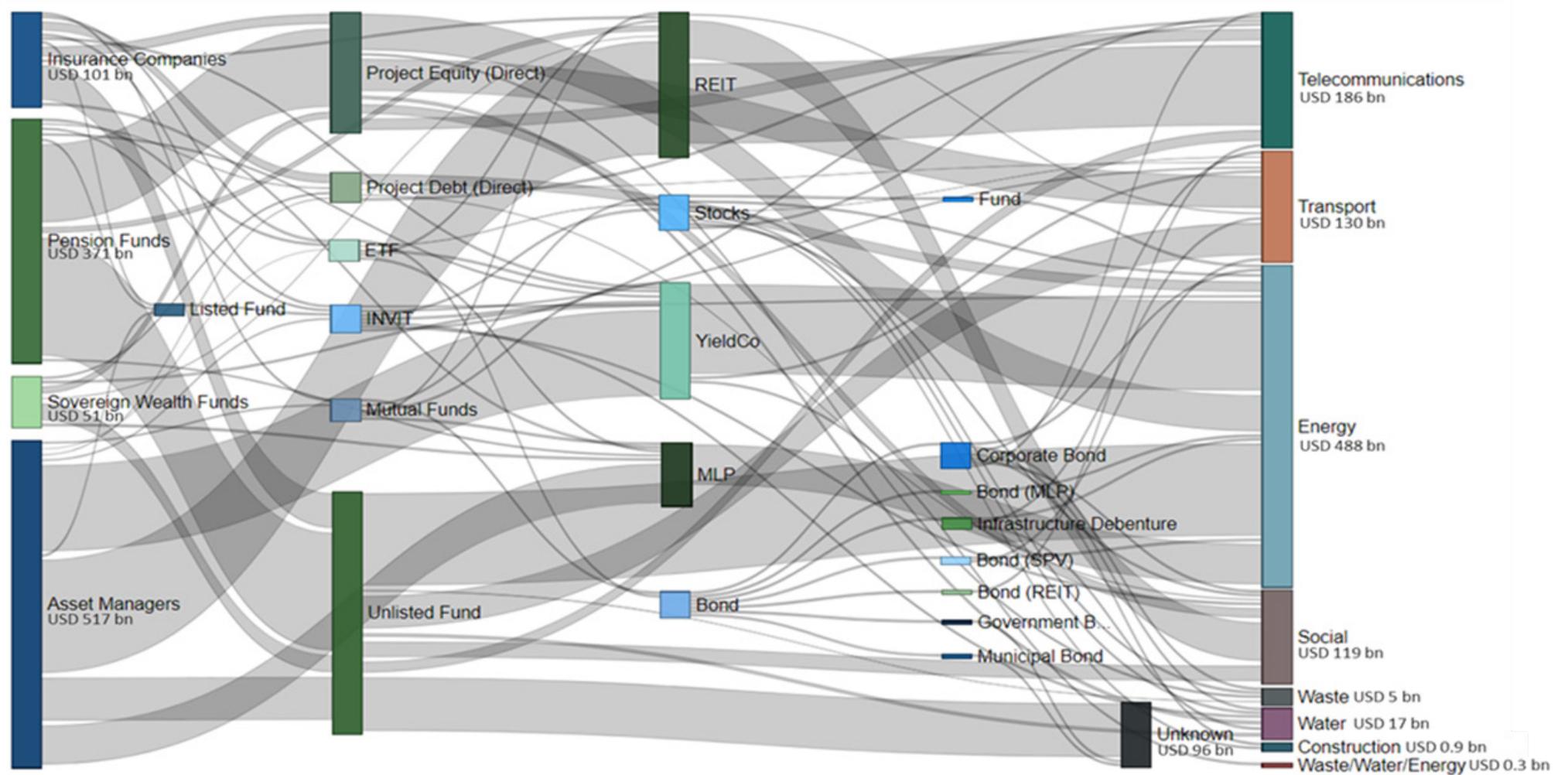
As the empirical mapping shows (Figure 2), institutional investors hold an estimated **USD 1.04 trillion in infrastructure assets** (excluding investment in corporate stocks). Unlisted funds are the dominant conduits of these infrastructure investments, with USD 380 billion (ca. 37%) in invested assets. USD 173 billion is currently held in direct project equity, with USD 26 billion in direct project debt. Investment through securitised structures including REITs, YieldCos, MLPs and INVITS together represent 43% of current institutional investment.

Of these USD 1.04 trillion in infrastructure assets, **USD 314 billion are attributed to green infrastructure** (Figure 3). This equals 30% of all institutional investment in infrastructure. Approximately 49% of all investment in green infrastructure is channelled through YieldCos (USD 155 billion). Unlisted funds and direct project equity follow YieldCos, with USD 93 billion and USD 44 billion, respectively. It is important to note that while unlisted funds account for 37% of investment in Figure 2, only 31% of their capital is currently allocated to green assets. This suggests that there is considerable potential upscale green infrastructure investment through unlisted funds. To contrast, 97% of all investment held through YieldCos is allocated to green infrastructure.



Figure 2. Institutional investment in infrastructure (excluding listed stocks)

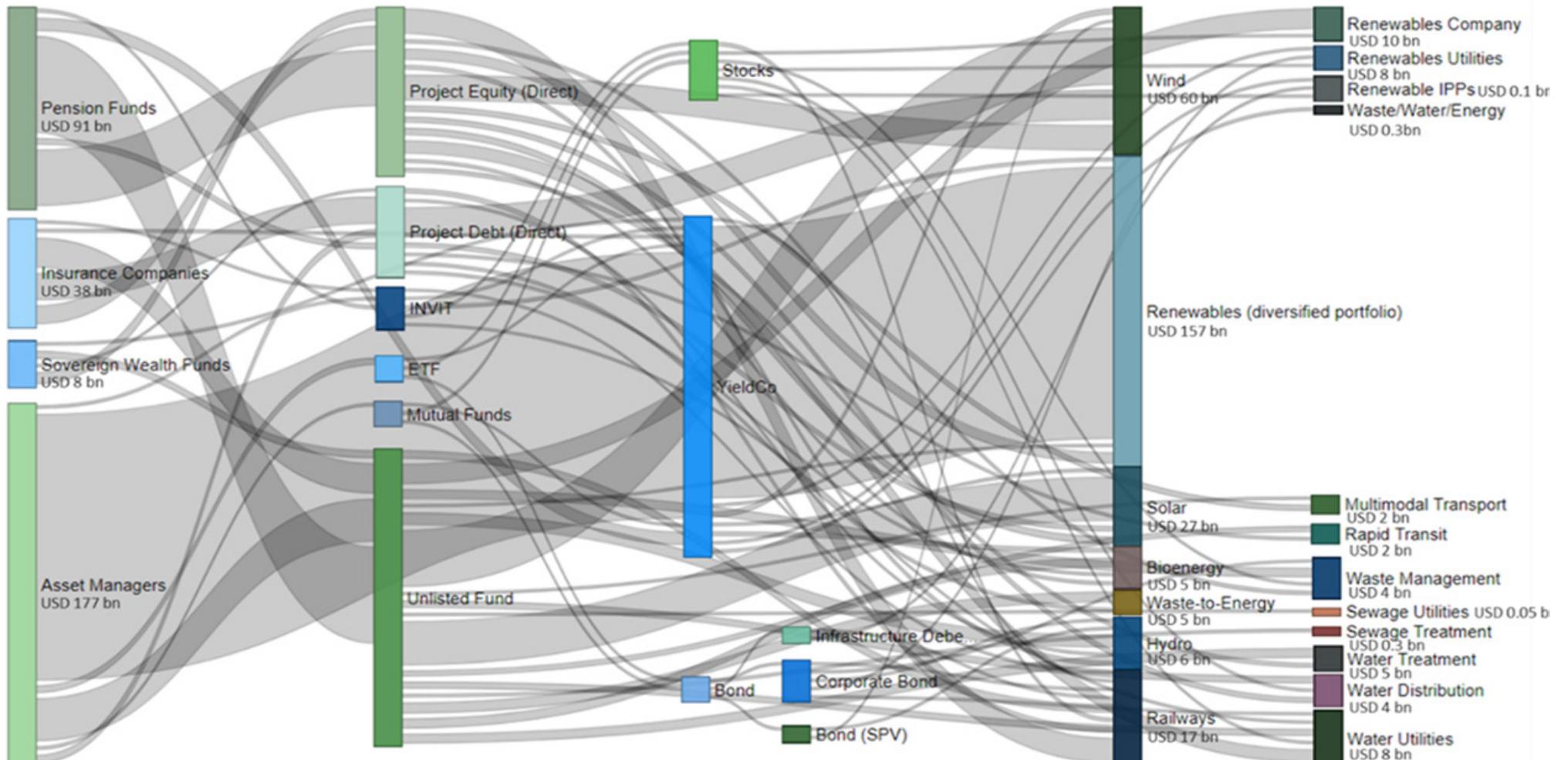
Holdings of institutional investors domiciled in OECD and G20 countries (as on February 2020)



Note: The figure excludes direct stock holdings. Further, while some nodes appear to have unequal left and right sides, this is just a visual effect and they are always balanced.

Figure 3. Institutional investment in green infrastructure (excluding listed stocks)

Holdings of institutional investors domiciled in OECD and G20 countries (as on February 2020)



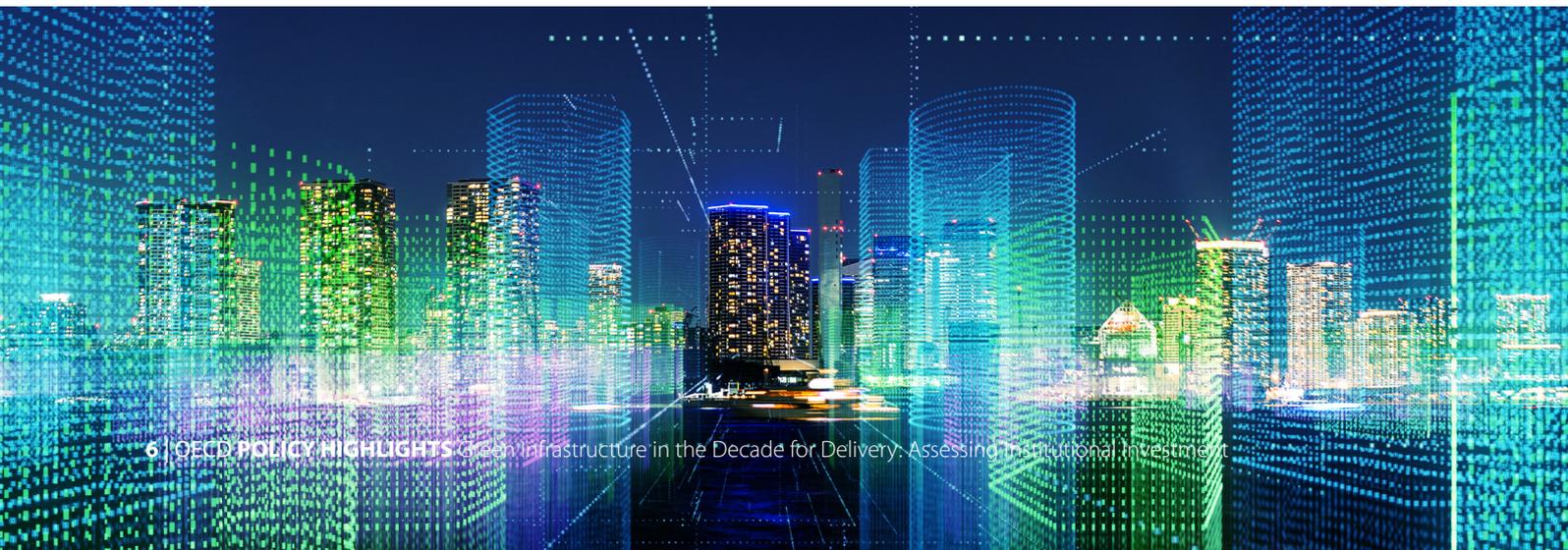
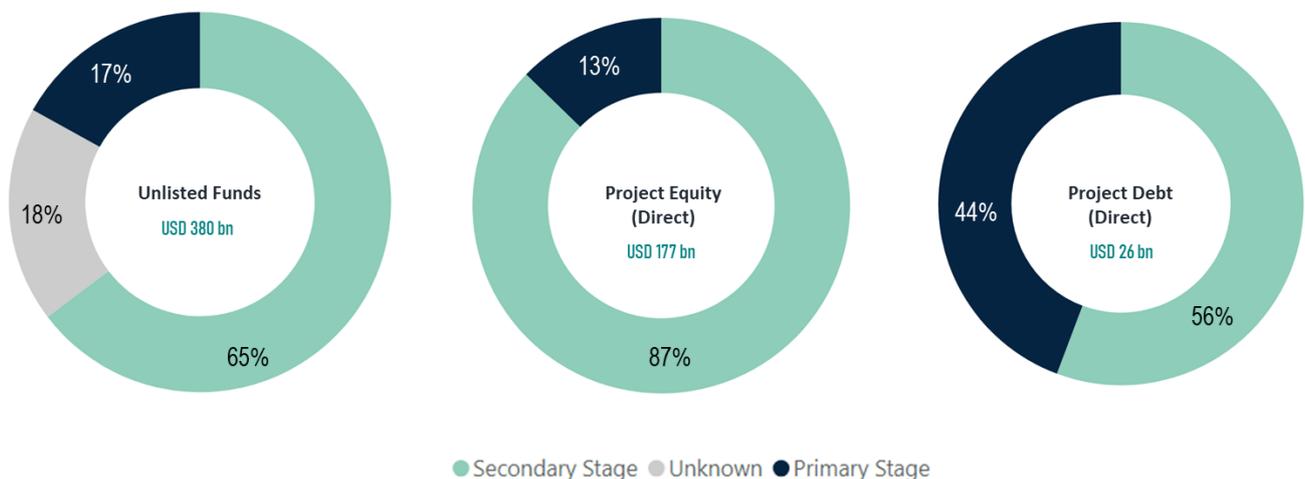
Note: The figure excludes direct stock holdings. Further, while some nodes appear to have unequal left and right sides, this is just a visual effect and they are always balanced.

Other key findings of the empirical investigation of institutional investment in infrastructure include:

- Infrastructure allocations by **asset owners** target **long-term capital appreciation**. The majority of investments are held in **illiquid assets** offering an illiquidity premium.
- Conversely, **asset managers** demonstrate a **preference for liquidity** in their allocations. The majority of investments are held through **structured products** like YieldCos, REITs and INVITs.
- Persistent low yields on traditional assets and a **rising risk appetite** among asset owners suggest **increased availability of construction stage capital** from institutional investors going forward.
- Institutional investors exhibit a **strong preference towards assets located within their regions of domicile**.
- Cross-border institutional investment mainly targets assets located in **mature markets**.

It is worth noting the split between primary stage and secondary stage investments shown in Figure 4, which counter common beliefs about institutional investors’ preferences. Most of the current positions through unlisted funds and direct project-level equity investment are established through secondary stage investment, i.e. acquisition of operational projects. Risk profile of projects is the most elevated during construction phase. However, once projects are operational, project risk is lowered and becomes more palatable to institutional investors. While this preference for operational projects is a longstanding trend, primary stage investment activity by institutional investors has increased in recent years, as in-depth interviews confirm. Construction stage projects with their higher risk-adjusted returns offer an attractive avenue to investors searching for higher yields.

Figure 4. Primary vs. secondary stage investment through unlisted funds and direct investment



Institutional investment in infrastructure by country and type

Figure 5 presents cross border holdings by institutional investors from OECD and G20 countries, categorised by region of the investor's domicile.

Overall, institutional investors allocate the majority of their capital to assets located in their region of domicile, with the exception of investors from the Middle East and Europe. This propensity is even stronger, and without exception, for green infrastructure investment—the lion's share of green infrastructure investment by institutional investors is channelled within their regions of domicile.

**Figure 5. Cross-border investment holdings (all) of OECD and G20 institutional investors
Through unlisted funds, direct investment and INVITs (USD Million)**

	ASSET REGION							Total
	Africa	Asia	Europe	Middle East	North America	Oceania	South America	
INVESTOR REGION	Africa	2,413					25	2,438
	Asia	3,412	14,051	6,811	734	2,474	3,723	31,585
	Europe	3,854	6,298	134,764	1,242	26,640	4,536	179,043
	Middle East	87	880	1,632	2,475	4,674	130	9,978
	North America	1,072	12,620	59,938	490	123,755	14,765	227,789
	Oceania	6	628	7,659	27	2,920	19,939	31,548
	South America							3,833
	Total	10,844	34,477	210,805	4,967	160,463	43,118	21,541



3 A framework for policy analysis of institutional investment

Policymakers can employ a set of measures to accelerate institutional investment in green infrastructure. These include establishing an enabling policy environment, clarifying fiduciary duty, supporting institutional innovation, active de-risking public-private initiatives, and facilitating securitisation of infrastructure assets.

Findings from the empirical mapping help identify levers and policy actions to shift and scale up institutional investment in green infrastructure. The analytical framework developed here (Figure 6) highlights three pathways:

To address the lack of sufficient investment-grade projects, governments can scale up **green project pipelines**. For investors, the costs of building capacity are difficult to justify for one-off investments. If they have greater certainty that follow-on projects will be available, investors would be better able to take calculated risks, invest in capacity building and help foster a market for infrastructure investment. Additionally, increasing project supply by creating a robust pipeline of investment-grade projects could help address currently high project valuations. Partnerships between investors and governments can also provide an effective way to share risks, achieve scale and establish a pipeline of investment-grade projects.

Mandates issued by asset owners offer a key pathway to scale up green infrastructure investments through unlisted funds. Asset owners' selection of asset managers and investment consultants is critical to integrating climate and development objectives in investment decisions. Actions by regulators to clarify the relationship between fiduciary duty, duty of care and consideration of climate-related risks could encourage asset owners to 'green' mandates.

Securitised/structured products could appeal to investors with a preference for liquid investment products. In particular, securitisation could capitalise on a shift towards defined contribution pension plans as well as passive investment and enlarge the investor base for infrastructure assets. In jurisdictions where regulators permit them, YieldCos, infrastructure REITs and INVITs, could be useful products in this regard.

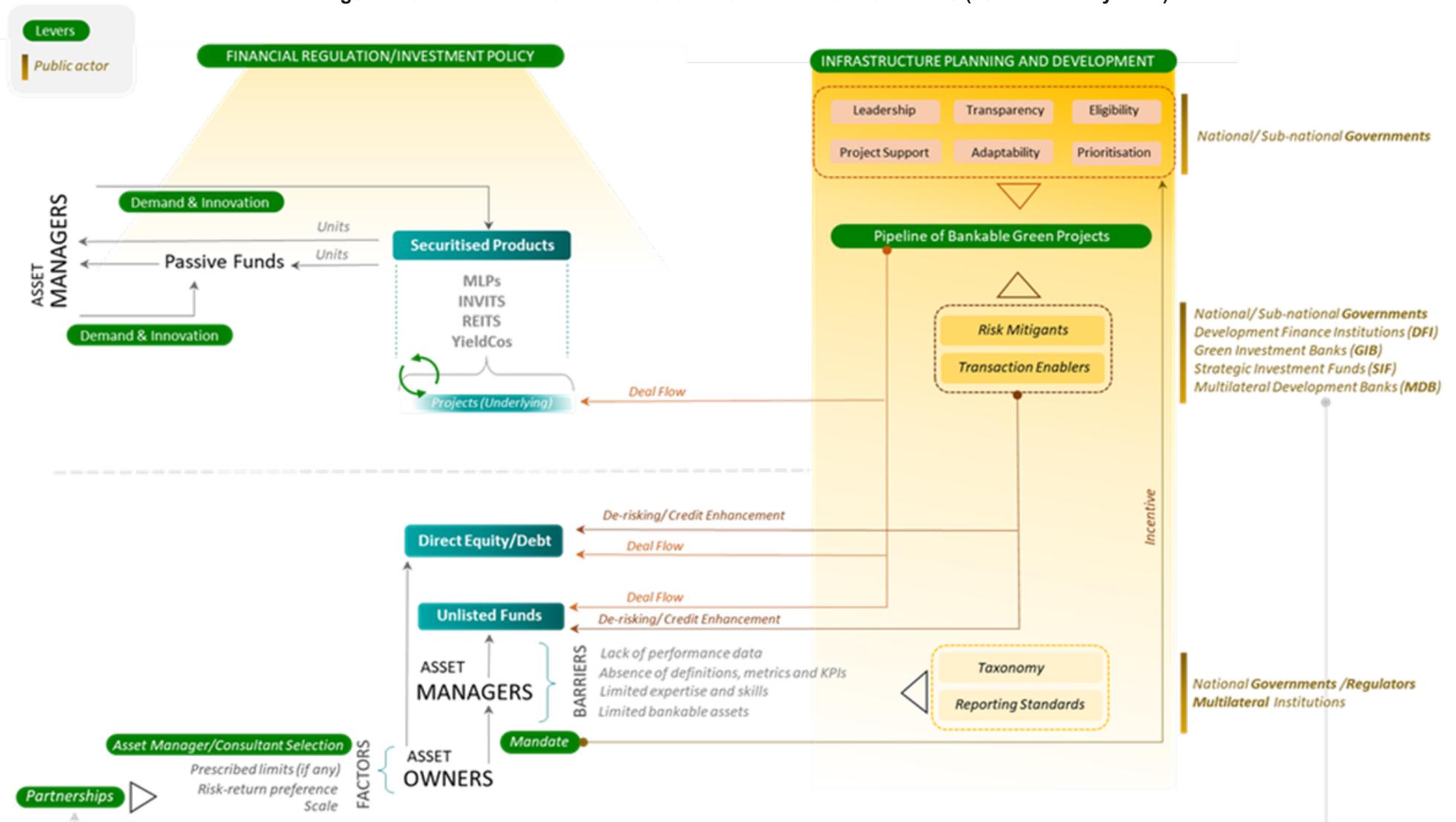
Beyond these three pathways, the establishment of more precise and consistent definitions of which investments are "green" could facilitate investment by giving confidence and assurance to investors. A common understanding of criteria for 'green' and 'sustainable' infrastructure would accelerate investment flows by simplifying due diligence and enabling a 'plug and play' architecture.

Institutional investors are increasingly conscious of the environmental impact of their investments, and are increasingly willing to make green investments. As governments and the private sector seek to 'build back better' and ensure a green recovery, this is an opportune moment for green infrastructure development. However, it will take committed and innovative policies to expedite investment flows towards green infrastructure.



Figure 6. Framework to identify key levers to green institutional investment in infrastructure

Holdings of institutional investors domiciled in OECD and G20 countries (as on February 2020)



Note: Asset Owners may invest in units of securitised vehicles and passive funds directly. The framework above has been simplified to aid analysis.

This Policy Highlights is based on the OECD publication *Green Infrastructure in the Decade for Delivery: Assessing Institutional Investment*.

Building green is not only imperative to achieve global climate and development commitments in this “decade for delivery”, but will also be critical to sustain socio-economic development during the COVID-19 recovery. Private investment in particular is needed to bridge the infrastructure investment gap, given institutional investors’ large pools of long-term capital. After several years of efforts to upscale institutional investment in infrastructure, where does the level of investment stand today? This report provides a first-of-its-kind empirical assessment of investment in infrastructure by institutional investors domiciled in OECD and G20 countries, presenting a snapshot from February 2020. Based on a new detailed view of investment channels, financial instruments, sectoral allocations, regional preferences and trends, the report provides guidance on policy levers and priorities to scale-up institutional investment in green infrastructure.

For more information:

OECD (2020), *Green Infrastructure in the Decade for Delivery: Assessing Institutional Investment*, OECD Publishing, Paris, <https://doi.org/10.1787/f51f9256-en>.

 oe.cd/green-infra-dfd

 dirk.rottggers@oecd.org and aayush.tandon@oecd.org

 @OECD_ENV
#OECDgfi

© OECD Environment Directorate, October 2020

