

INVEST4CLIMATE
KNOWLEDGE SERIES



United Nations Development Programme

MOBILIZING INSURANCE INVESTMENT IN SUSTAINABLE INFRASTRUCTURE

THE ROLE OF THE UNITED NATIONS

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Author: Lauren Carter, Engagement Advisor, Invest4Climate (UNDP)

Internal Reviewers: Emily Davis (Programme Specialist, UNDP), Lucas Black (Environmental Policy Advisor, Global Environmental Finance, Bureau for Policy and Program Support, UNDP)

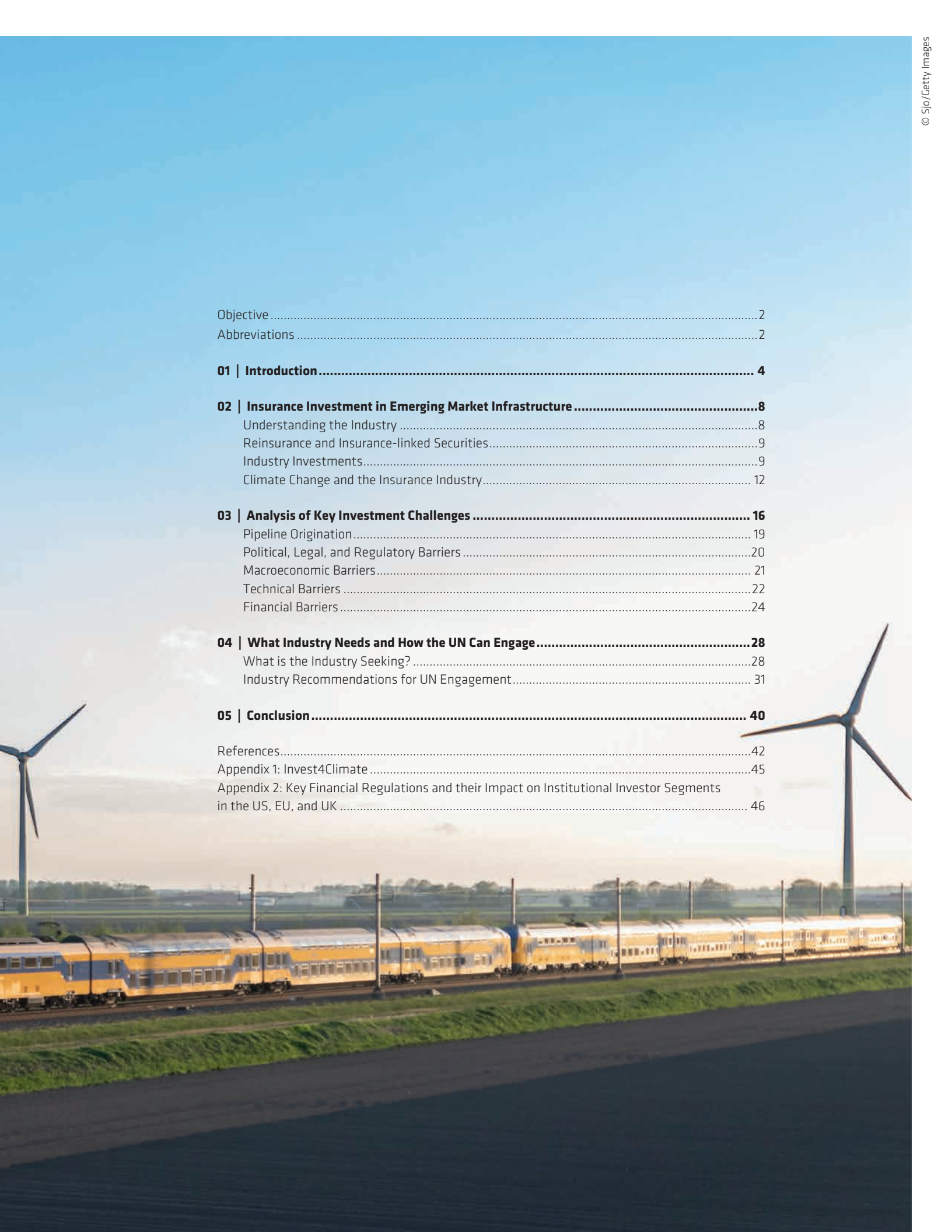
External Reviewers and Interviewees: Claus Stickler (Allianz), Franziska Ehm (Allianz), Carlos Sanchez (Willis Towers Watson), Bill Marcoux (WCM Advisory), Jean-Pascal Asseman (AXA), Thibaud Escalon (AXA), Fabian Ferrer (AXA), Ian Brimecome (Tokio Marine), Catherine Clark (Prudential PLC), Michael McRaith (Blackstone), Julie Chang (Blackstone), Michael Kjeller (Folksam), Rob Wesseling (The Co-operators Group Limited), Martina Englmann (Munich Re), Andreas Jobst (IMF), and Charlene Watson

Editor: Jan Kellett, UNDP Team Leader, Insurance and Risk Finance Facility

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Objective

This report is part of the Invest4Climate Knowledge Series. The Invest4Climate platform, a World Bank Group–United Nations Development Programme (UNDP) partnership, was designed to mobilize, coordinate, and deliver the financing needed to close the climate financing gap and help countries transition to a low-carbon, resilient future that supports jobs and growth. The Invest4Climate

Knowledge Series provides targeted reports on expanding private investment in climate action through financial innovation and collaborative partnerships. The objective of this report is to explore the ways in which the UN system can best engage with the global insurance industry to transition more of its portfolio into low-carbon and climate-resilient infrastructure investments.

Abbreviations

AUM	Assets Under Management	LCCR	Low-Carbon and Climate-Resilient
CCRI	Coalition for Climate Resilient Investment	MCPP	Managed Co-Lending Portfolio Platform
CIP	Climate Investment Platform	MDB	Multilateral Development Bank
CIG	Closing the Investment Gap in Sustainable Infrastructure	MIGA	Multilateral Investment Guarantee Agency
CIS	Collective Investment Schemes	NAIC	National Association of Insurance Commissioners
DFI	Development Finance Institutions	NDB	National Development Bank
EEA	European Economic Area	NDC	Nationally Determined Contributions
EIB	European Investment Bank	OECD	Organization for Economic Cooperation and Development
EIOPA	European Insurance and Occupational Pension Authority	PCR	Physical Climate Risk
EM	Emerging Market	PPA	Power Purchase Agreement
EMDE	Emerging Markets and Developing Economies	PPP	Public-Private Partnership
ESG	Environmental, Social and Governance	QBS	Quality-Based Selection
FSB	Financial Stability Board	ReSCO	Resilience Service Company
FX	Foreign Exchange	SDG	Sustainable Development Goals
GCF	Green Climate Fund	SE4All	Sustainable Energy for All
GWP	Gross Written Premiums	Sida	Swedish International Development Cooperation Agency
IAIA	International Association of Insurance Supervisors	SOE	State-Owned Enterprise
ICT	Information and Communications Technology	TCX	The Currency Exchange Fund
IDF	Insurance Development Forum	UNCDF	United Nations Capital Development Fund
IFC	International Finance Corporation	UNDP	United Nations Development Programme
ILS	Insurance-Linked Securities	UNEP	United Nations Environment Programme
INFF	Integrated National Financing Network		
IRENA	International Renewable Energy Agency		

Note: All figures quoted are in US dollars unless otherwise noted.



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01

INTRODUCTION

01 | Introduction

Between now and 2040, the world requires investment of \$84.5 trillion in infrastructure, which is more than the total current stock.¹ This means that capital spending over the next two decades will need to fundamentally reshape the infrastructure system to create and maintain sustainable and inclusive growth. Thus, it is critical to the achievement of the major global framework agreements – the United Nations (UN) Sustainable Development Goals (SDGs), the Paris Climate Agreement, the Addis Ababa Action Agenda, and the Sendai Framework on Disaster Risk Reduction – that this new infrastructure is low-carbon and climate resilient (LCCR). This is especially true in emerging markets and developing economies (EMDEs) which are more vulnerable to climate change but also have greater investment needs.

Populations in many EMDEs are rapidly growing, with corresponding demands for the expansion of affordable energy, transportation, information and communications technology (ICT), water resources, health services, and food systems.

These populations are also increasingly vulnerable to climate-related risks and hazards such as severe storms, flooding, and drought. By ensuring that infrastructure is LCCR at the onset, countries can reduce emissions, increase economic growth and strengthen local resilience while avoiding service disruption and costly retrofitting.

Investing in LCCR infrastructure also represents a significant business opportunity with the potential to yield direct economic gains of \$26 trillion through 2030 compared with business-as-usual while simultaneously preventing thousands of deaths and hundreds of billions of dollars in losses from disasters triggered by extreme weather and climate-related hazards (New Climate Economy 2018). In spite of the opportunity, however, there is a projected \$16 trillion sustainable infrastructure

financing gap between now and 2040², and closing this gap will require mobilizing private capital and building a corresponding pipeline of bankable projects at a scale never before seen.

With approximately \$33 trillion in assets under management, insurers rank alongside pension funds as the world's largest long-term investors.³

Sustainable infrastructure offers an attractive investment opportunity for insurers because it can deliver predictable and stable cash flows that match insurers' long-term liabilities while also generating an illiquidity premium (Jobst 2018). As underwriters, insurers are also well-positioned to understand climate risks and the advantages of investing in infrastructure that is low-carbon and resilient to climate change. The complementarity of these two activities make insurers exceptionally well-positioned to lead the way on responsible investments (Ralph 2018).

The insurance industry acknowledges the substantial role it has to contribute to the acceleration of the low-carbon economy. The European Insurance and Occupational Pension Authority (EIOPA) highlights that, "As risk managers and investors, [insurers] play an essential role in driving investments towards particular sectors and long-term projects. Insurers are increasingly incorporating climate-related risks in their underwriting and investment activities" as these factors are acknowledged to have financial implications to the companies' balance sheets (EIOPA 2019).

Investments in LCCR infrastructure offer dual benefits by reducing the emissions of critical development projects while minimizing the underwriting risks for insurers as countries become increasingly resilient to climate change. Targeted investment in resilient infrastructure that reduces the potential underwriting losses for non-life

1 See <https://outlook.github.org> Global Infrastructure Hub figures from 2020 onwards, inclusive of the SDGs.

2 Ibid.

3 Financial Stability Board 2020.



insurers from storm surges, flooding, heat stress, and other climate factors, and could lead to lower premiums for policyholders, creating a virtuous cycle of price incentives for investing in prevention and preparedness.⁴ According to Lloyd’s of London, “with careful design, insurance and investments can be mutually reinforcing. Greater resilience reduces risk, which is then reflected in lower insurance premiums, providing a strong financial incentive to make suitable investments” (Lloyd’s 2018).

Historically, significant infrastructure investment by insurers has been inhibited by uncertainty about the proper distribution of payoffs and risk-sharing within opaque and complex public-private partnership (PPP) structures, regulatory barriers, and limited in-house experience. But in recent years, the low interest-rate environment has pushed insurers to seek greater returns in alternative assets such as infrastructure. These infrastructure investments often occur in Organization for Economic Cooperation and Development (OECD) countries where insurers are familiar and have operations, though some of the more sophisticated insurers have been open to investing in EMDEs in which both the need for LCCR infrastructure and the financing challenges are substantial.

In EMDEs, traditional project finance risks are typically amplified by weak enabling environments including political uncertainty, the lack of a predictable pipeline of bankable projects, and a limited supply of de-risking instruments for foreign exchange, liquidity, and counterparty risks. In addition to these risks, insurers have their own set of more specific challenges to overcome. These challenges include: aligning investments with their long-term liabilities; complying with risk-based regulatory frameworks that assign high capital charges for infrastructure investments, especially for unrated projects which are the most common; building their internal expertise and capacity to invest in infrastructure; and, most importantly, finding projects of sufficient size and quality to meet their investment requirements that can ideally be bundled into portfolio structures to achieve scale.

This report will explore how, despite the challenges, the insurance industry is uniquely placed to foster greater investment into LCCR infrastructure in EMDEs, by combining its inherent understanding of physical climate risks with its patient capital, and how the United Nations can support these investments.

Report Structure

Section One reviews the current status of industry investment to date and future ambitions, while Section Two identifies the current challenges to scaling LCCR infrastructure investment, especially in EMDEs. Section Three concludes by identifying some of the key ways in which the UN could play a role in supporting the industry to scale in investment in LCCR infrastructure and contribute to the achievement of the SDGs, Paris Agreement, Addis Ababa Action Agenda, and Sendai Framework as recommended by industry.

4 “At the same time, transition and physical risks remain for investments in climate-sensitive sectors, in particular in the case of a disorderly transition to a carbon-neutral economy, whereas increased physical risks could trigger additional underwriting losses for non-life insurers.” Source EIOPA 2019. See <https://www.bbc.com/future/article/20170515-resilience-bonds-a-secret-weapon-against-catastrophe>



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02

INSURANCE INVESTMENT IN EMDE INFRASTRUCTURE

02 | Insurance Investment in Emerging Market Infrastructure

Understanding the Industry

Insurance protects policyholders from various types of risk. To cover these risks, insurers collect premium payments from policyholders which are then invested across different asset classes to provide sufficient capital to cover any future claims, as well as to generate profit for the insurer. Insurance coverage generally falls into two broad categories, life insurance and “non-life” insurance. In most countries, life and non-life insurers are subject to different investment regulations, because life insurance is a longer-term investment, whereas non-life insurance policies are often more short-term (Convergence 2018a).

Life insurance can act as a hedge against serious loss of earnings from death, illness, or disability, but it also provides financial security for retirement through savings features (such as annuities) in exchange for premium payments. Life insurance policies are long-term engagements

that can span for several decades, which means that insurers must align their investments with these long-term liabilities in mind. Non-life insurance includes all other forms of insurance including property, casualty, accident, and health insurance. While non-life insurance policies are usually written in one-year increments, many policyholders renew their coverage annually and consequently, the reserve requirements of non-life insurance policies also require long-term, stable investments.

The premiums collected by insurers from policyholders generate a substantial pool of investment capital. The total gross written premiums (GWP) for life insurers in 2016 was \$2.6 trillion, while for non-life insurers it was \$2.1 trillion (Crawford, S., L. Russignan, and N. Kumar 2018). Collectively, global insurers manage approximately \$33 trillion, but this capital is subject to strict regulations designed to minimize risk and ensure that policyholders receive their entitled benefits for any claims.



Reinsurance and Insurance-linked Securities

Reinsurance acts as insurance for insurance companies. Insurers can assess their own risks and solvency against the assets in their portfolios and decide to transfer part of these risks to a reinsurer for a fee. This helps protect insurers from tail risks⁵ that, although highly unlikely, are very damaging scenarios, such as major disasters. Reinsurance helps distribute the tail risks of insurers across regions and continents and functions as a shock absorber for the entire industry (Insurance Europe 2014).

Beyond reinsurers, excessive risk can be transferred to the broader capital markets in the form of insurance-linked securities (ILS). But the role of ILS as a risk transfer mechanism is likely to face increasing pressure from climate change. EIOPA cautions that, “Despite the losses related to the natural disasters of autumn 2017, capital flows into the ILS-market continued in 2018 and 2019. On one hand, the relatively high yields, as well as the diversifying nature of the catastrophe-exposed business, might continue to attract investors. On the other hand, concerns such as the potential impact of climate change on the frequency of natural catastrophes might hold back the development of the ILS-market via reduced demand from investors or pressures for higher returns in compensation for the perceived increase in risk” (EIOPA 2019).

Industry Investments

The insurance industry invests the premiums collected from policy holders across a variety of asset classes, some of which are traditional investments such as corporate or government bonds (debt) and company shares (equity), while others are considered alternative investments such as real estate, private equity, hedge funds, commodities, and infrastructure. Insurers seek an optimal trade-off between risk and

return as aligned with the duration, liquidity, and return constraints of their liabilities. Because of their long-term liabilities, insurers often seek an illiquidity premium, which is a higher investment return to compensate for the risk of holding assets with longer maturities (Insurance Europe 2014).

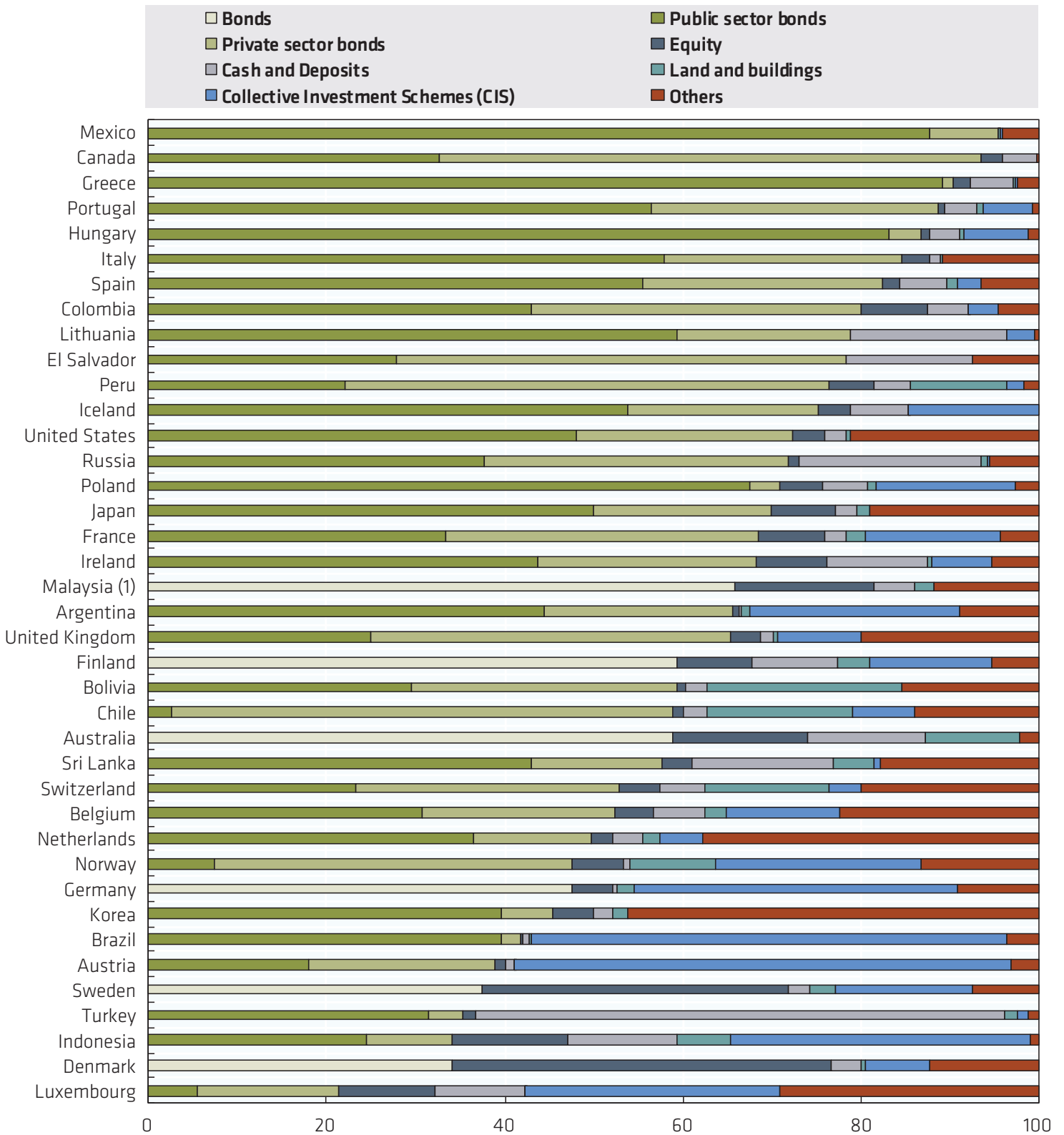
The type of asset classes in which insurers are allowed to invest can vary widely by where they are domiciled and the policies and regulations they are governed by (see appendix 2). Insurance investments are allocated based upon the timing of projected claims payments, and therefore, a high proportion consist of fixed-income assets, such as corporate or government bonds, that produce predictable cash flows. Asset-liability matching is particularly important for life insurers who require fixed-rate assets to cover long-term liabilities.

Figures 1 and 2 show private and public sector bonds as the dominant insurance investment instruments in most OECD jurisdictions, followed by equities. Life insurers in 28 of 39 reporting countries and non-life insurers in 29 out of 46 reporting countries put more than 50 percent of their investments into bonds and bills for asset-liability reasons (OECD 2019). However, in recent years, insurers are investing in more alternative and illiquid assets including private equity, mortgages, infrastructure, and property to improve investment returns (EIOPA 2019).

Infrastructure investments are an attractive opportunity for insurers. Infrastructure investments align well with life insurers’ long-term liabilities and often offer an illiquidity premium. In countries where insurers operate and collect premiums, investing in local infrastructure projects offers a natural hedge against currency risk. Investments in LCCR infrastructure projects, in particular, protect insurers’ balance sheets from climate risks by supporting capital spending in emission reduction and improving resilience.

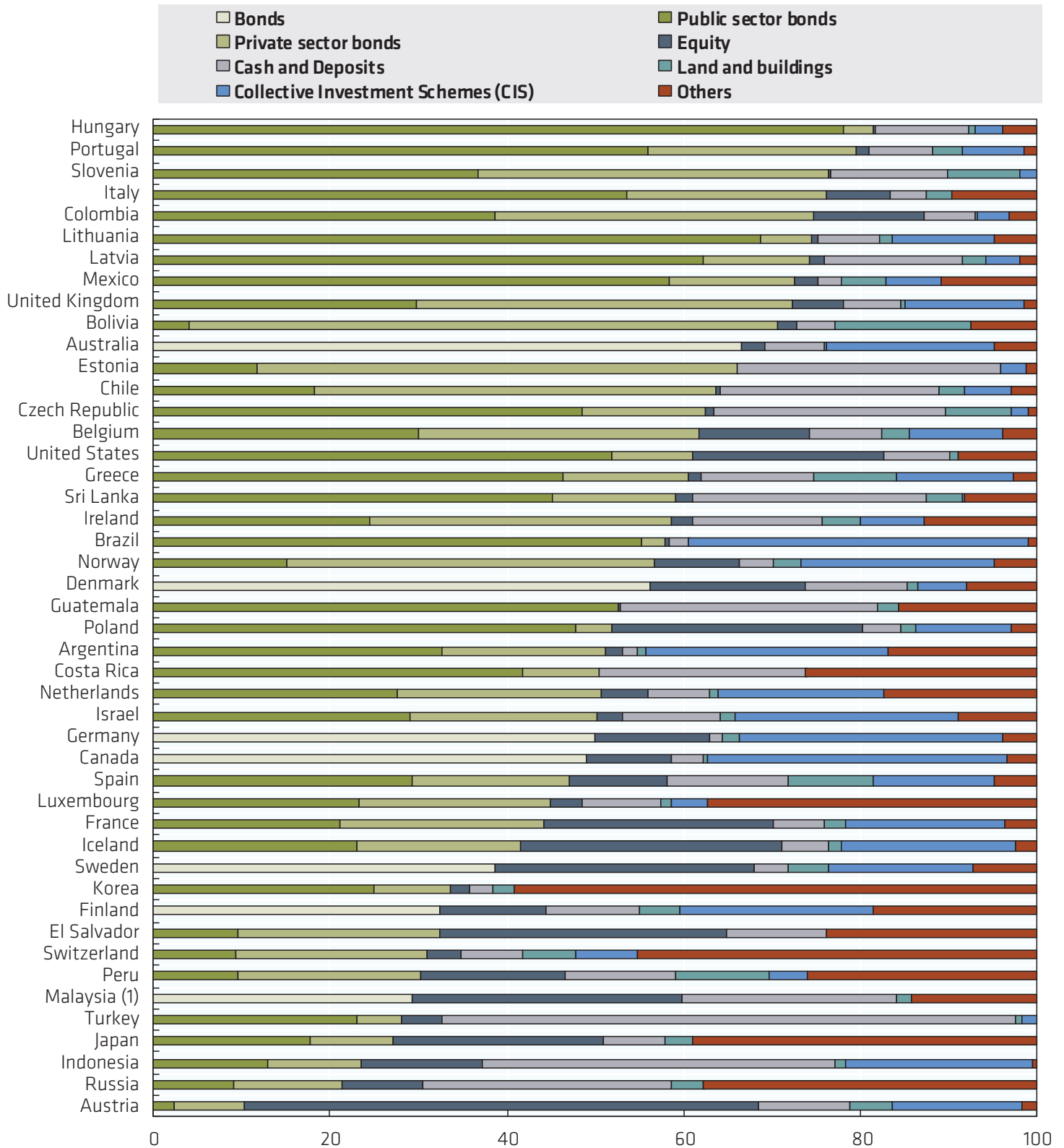
⁵ See <https://www.allianz.com/en/press/extra/knowledge/finance/150629-what-are-tail-risks-and-why-should-you-care.html>

Figure 1 Life Insurance Companies (Domestic): Asset Allocation in Main Instruments or Vehicles, 2018



Source: OECD Global Insurance Market Trends 2019, from OECD Global Insurance Statistics, link <https://www.oecd.org/daf/fin/insurance/Global-Insurance-Market-Trends-2019.pdf>.

Figure 2 Non-Life Insurance Companies (Domestic): Asset Allocation in Main Instruments or Vehicles, 2018



Source: OECD Global Insurance Market Trends 2019, from OECD Global Insurance Statistics, link <https://www.oecd.org/daf/fin/insurance/Global-Insurance-Market-Trends-2019.pdf>.



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Nonetheless, insurers have historically invested very little of their portfolios in infrastructure and most institutional investors remain below their target allocations for infrastructure as an alternative asset class. Some factors that might explain the cautious stance are the high operational burdens with recurring manual intensive tax, legal, and accounting tasks that overburden some investors. Insurers are also constrained by additional factors: investment mandates; portfolio diversification strategies; geographical preferences; risk tolerances such as for new markets and technologies; internal capacity to conduct due diligence on individual infrastructure projects and liquidity requirements (MDBs 2015); and, perhaps most importantly, a lack of investable projects.

Insurance companies currently allocate around \$726 billion to infrastructure (EIOPA 2019) which represents approximately 2.2 percent of their assets under management (AUM) and less than half of their target allocation. Of this \$726 billion, only \$57 billion went to infrastructure investments in EMDEs, and it is unclear how much of this could be classified as LCCR (Convergence 2018a). While \$57 billion sounds substantial, it is less than one-fifth of one percent of insurers' entire portfolios, representing a substantial opportunity to better engage insurance investors with opportunities for LCCR infrastructure investment in EMDEs.

Climate Change and the Insurance Industry

Insurers have a long history of engaging with carbon-intensive industries such as oil, gas, and coal through both underwriting and investment. However, the insurance industry, along with other long-term investors, is reconsidering its relationship with fossil fuels given their impact on global climate change and the resulting financial risks they pose to insurers' portfolios.⁶

As major institutional investors, insurers can support the transition to a low-carbon economy by managing the physical, transition, and liability risks of climate change to their portfolios and underwriting activities. According to EIOPA, it is "crucial that both insurers and pension funds actively incorporate climate change risks in their own risk-management frameworks. At the same time, climate change can also have a significant impact on the liabilities of non-life insurers and reinsurers, as extreme weather-related events become more frequent and severe" (EIOPA 2019).

Fossil fuel companies are also increasingly threatened with legal action over the impact of emissions which is a liability covered by their

⁶ See <https://www.theguardian.com/business/2019/nov/27/coal-insurer-axa-to-divest-from-fossil-fuel-investments-underwriting>

insurance policies. The insurance industry’s exposure to this risk could be upwards of hundreds of billions of dollars (Ralph 2018). As a result, most of the world’s biggest European insurers have curtained or halted underwriting for coal mines and coal-fired power plants (McHale, C. and R. Spivey 2016). However, many are still providing cover for the oil and gas industry.

Given the uncertainty around the size and timing of claims payouts to customers, insurers have historically been conservative investors, leading to large allocations in “safe” core investments such as fossil fuels and utilities.⁷ In 2015, US insurers had nearly \$500 billion invested in bond, equity, or other holdings tied to the fossil fuel industry (McHale, C. and R. Spivey 2016). In Europe,

Table 1 Potential Manifestations of Physical, Transition, and Liability Climate Risks across Insurers’ Underwriting and Investment Activities

	Underwriting	Investment
Physical Risks	<ul style="list-style-type: none"> - Pricing risks arising from changing risk profiles to insured assets and property (non-life), changing mortality profiles and demographic trends (life and health) - Claims risks arising from confluence of unexpected confluence of extreme events (that is, multiple category 4 or 5 hurricanes) - Strategic/Market Risks arising from changing market dynamics (that is, uninsurability of property) 	<ul style="list-style-type: none"> - Risks arising from impacts of physical climate events and trends on assets, firms, and sectors, affecting profitability and cost of business, leading to impacts on financial assets and portfolios (that is, debt, equity)
Transition Risks	<ul style="list-style-type: none"> - Strategic/Market Risks arising from contraction of market demand in certain sectors (that is, coal, oil, marine transport) - Strategic/Market Risks arising from market trends, technological innovation, and policy changes related to climate change (that is, carbon pricing, energy efficiency regulations), affecting products and services demanded by consumers 	<ul style="list-style-type: none"> - Risks arising from market, policy, technological, and social changes, affecting profitability and cost of business of firms and sectors (that is, energy, industry, transport, agriculture), leading to impacts on financial assets and portfolios (that is, debt, equity)
Liability Risks	<ul style="list-style-type: none"> - Liability risks arising from insurers liable on the basis of insurance provided (that is, tort or negligence claims) - Liability risks stemming from directors & officers policies 	<ul style="list-style-type: none"> - Risks arising from litigation (that is, class action) relating to the consideration of climate change in investment decision-making, or disclosure of climate risks inadequate

Source: International Association of Insurance Supervisors, Issues Paper on Climate Change Risks to the Insurance Sector, July 2018.

7 See <https://insideclimatenews.org/news/24052016/insurers-climate-change-risks-global-warming-fossil-fuel-investments-oil-gas-coal-report-warns>

the investments of insurance and pension funds remain exposed to significant climate-related transition risks⁸, many of which are still difficult to quantify due to both the size and complexity of the portfolios (EIOPA 2019). However, in recent years these investments are seen as increasingly risky⁹ and insurers are responding by divesting from carbon-intensive assets such as coal plants¹⁰ and increasing their exposure to green energy schemes such as wind parks, solar farms, and hydro projects.

For example, by the end of 2017, Allianz had €5.6bn invested in renewable energy while AXA

increased its target for green investments from €3bn to €24bn by 2023 and pledged to divest from coal investments in OECD countries by 2030 and from developing countries by 2040.¹¹ Insurers are increasingly aware of the interconnectivity between the asset and liabilities side of their balance sheets in relation to climate change. EIOPA warns that, “Transition and physical risks remain for investments in climate-sensitive sectors, in particular in the case of a disorderly transition to a carbon-neutral economy, whereas increased physical risks could trigger additional underwriting losses for non-life insurers” (EIOPA 2019).

Box 1 UN-convened Net-Zero Asset Owners Alliance

In order to support the transition to a low-carbon economy, many of the world’s largest insurers and reinsurers including Allianz, AXA, Aviva, CNP Assurance, Folksam, Generali, Nordea, Swiss Re, and Zurich, joined the UN-convened Net-Zero Asset Owners Alliance in 2019 and committed to transition their investment portfolios to net-zero greenhouse gas emissions by 2050. This commitment paves the way for insurers to more actively seek out green investment opportunities across all asset classes, including infrastructure.

8 Transition risks arise in the transition to a more carbon-neutral economy, with potentially significant and disorderly write-downs in certain financial assets, in particular for exposures to carbon-intensive industries.

9 “Several studies released in 2015 highlighted that institutional investors face exposure to a range of climate change related risks, including carbon asset risk. Investing in a Time of Climate Change, published by the investment consulting group Mercer with support from sixteen investor partners, the International Finance Corporation and the UK Department for International Development, concluded that annual investment returns for coal, oil, gas and utilities will be the most negatively impacted of all industry sub-sectors evaluated, and that the biggest impacts will be in the next decade. In essence, after long being considered ‘safe’ core investments, oil, gas, coal and utilities are becoming more risky for the world’s investors.” Source: (McHale, C. and R. Spivey 2016)

10 See <https://www.swissre.com/media/news-releases/nr-20200220-swiss-re-takes-further-steps-towards-net-zero-emissions.html>

11 See <https://www.theguardian.com/business/2019/nov/27/coal-insurer-axa-to-divest-from-fossil-fuel-investments-underwriting>



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03

ANALYSIS OF KEY INVESTMENT CHALLENGES

03 | Analysis of Key Investment Challenges

There are three interconnected sets of challenges for insurers to scale investment in low-carbon and climate resilient infrastructure in emerging markets and developing countries.

The first are the challenges of infrastructure investment, the second are the challenges of investing in emerging markets and developing countries, and the third are the challenges posed specifically by low-carbon and climate resilient infrastructure.

Infrastructure projects, especially those in EMDEs, involve managing a multitude of complex risks for a long period of time, and investors have only limited information when committing to projects.

Investors' decisions to provide infrastructure finance depends on a number of factors. These factors include the identification of bankable greenfield or brownfield projects; analysis of legal, political and foreign currency risks; and benchmarking expected returns against other

potential investments, accounting for the fact that infrastructure projects are frequently long-term, difficult to monitor, and illiquid (Financial Stability Board 2018).

For LCCR projects specifically, insurers are confused over which types of projects meet these standards.

While there are numerous frameworks and approaches to defining green infrastructure, such as the EU Sustainable Finance Taxonomy and the Climate Bonds Taxonomy, a global consensus has yet to be attained. Developing countries may also lack the technical expertise to structure bankable Infrastructure projects, especially those that meet more complex green standards, which results in a dearth of project pipeline (Blended Finance Taskforce 2018).

Table 2 outlines some of these challenges and how they interact with and build upon one another.



Table 2 Key Challenges for Insurance Investments¹²

Key Challenges	All Infrastructure	EMDE Infrastructure	LCCR Infrastructure
Pipeline Origination	<ul style="list-style-type: none"> - Limited pipeline of well-structured projects of sufficient size and quality 	<ul style="list-style-type: none"> - Limited pipeline of well-structured projects of sufficient size and quality - Increased difficulty with origination, high due-diligence costs 	<ul style="list-style-type: none"> - Limited pipeline of well-structured projects qualifying as LCCR
Political/Legal/Regulatory Barriers¹³	<ul style="list-style-type: none"> - Political risks including changes in taxation, tariff regulation, or contract renegotiation 	<ul style="list-style-type: none"> - Political risks including changes in taxation, tariff regulation or contract renegotiation (this risk is often more pronounced in EMDEs) 	<ul style="list-style-type: none"> - Lack of policy and regulatory incentives for LCCR investments
Macroeconomic Barriers	<ul style="list-style-type: none"> - Asset-liability mismatch with foreign currencies, currency volatility - Inflation 	<ul style="list-style-type: none"> - Asset-liability mismatch with foreign currencies, currency volatility (this risk is often more pronounced in EMDEs) - Inflation (this risk is often more pronounced in EMDEs) 	
Technical Barriers	<ul style="list-style-type: none"> - Lack of data for long-term planning or appropriate infrastructure - Project feasibility - Construction risk - ESG risks - Operating risks - Revenue risks 	<ul style="list-style-type: none"> - Lack of data for long-term planning or appropriate infrastructure (this risk is often more pronounced in EMDEs) 	<ul style="list-style-type: none"> - Lack of taxonomy and data - Obsolesce due to technological innovation - Difficulty pricing physical climate risks into investment decision-making
Financial Barriers	<ul style="list-style-type: none"> - Regulatory treatment - Financing availability 	<ul style="list-style-type: none"> - Solvency II qualifying infrastructure only applicable to EEA countries - Limited supply of investment grade transactions (can be supported through DFI bundling and credit enhancements on a portfolio level) - Illiquid capital markets - Counterparty risk - Non-payment risk - Refinancing risk 	<ul style="list-style-type: none"> - Lack of incentives for better local and international financial regulatory treatment to align with countries' Nationally Determined Contributions (NDCs) and other climate frameworks - Lack of incentives, such as favorable capital charges, for LCCR investments

Source: UNDP 2020, developed for this report by the author.

12 Adapted from interviews with industry investment managers, bespoke research, and the IDF Bank of England Presentation.

13 Note these regulatory barriers are related to the laws and policies for infrastructure and private investment, not financial regulations which are discussed under financial barriers.

Following pipeline origination, Figure 3 highlights where in the project lifecycle the remaining investment risks tend to manifest. However, while the figure identifies risks across the different phases of a project lifecycle,

insurance companies and pension funds are mostly interested in operational projects, although some larger insurers are increasingly interested in taking on projects at the development and construction phases.

Figure 3 Investment Risks Across the Project Lifecycle

Investment Risks in Infrastructure						
Risk Category	Full Project Life Cycle	Phase of Project Life Cycle				
		Development Phase	Construction Phase	Operational Phase	Termination Phase	
Political/ Legal/ Regulatory	<ul style="list-style-type: none"> - Adverse change in taxation, social acceptance, regulation/laws, and contract enforceability - War, terrorism, and civil disturbance 	<ul style="list-style-type: none"> - Environmental review - Delayed permitting 	<ul style="list-style-type: none"> - Cancellation of permits - Contract renegotiation 	<ul style="list-style-type: none"> - Change in tariff regulation - Contract termination 	<ul style="list-style-type: none"> - Contract duration - Decommissioning - Asset transfer restrictions 	
		Material adverse government actions (e.g., expropriation)		Currency convertibility		More amenable to NDB/ MDB solutions
Macro-economic	Macroeconomic conditions (growth, inflation)	<ul style="list-style-type: none"> - Currency depreciation/FX volatility and inflation risk - Sovereign distress 				Limited capacity for managing FX risk
Technical	Force majeure	<ul style="list-style-type: none"> - Project feasibility - Archeological assessment 	Construction risk	<ul style="list-style-type: none"> - Operating and maintenance risks - Revenue risk 	Hand-back risk	
		Governance risk: poor execution and monitoring		ESG risks - Obsolescence due to technological innovation		Limited availability of long-term debt finance
Financial	Prudential and funding constraints	Financing availability (incl. pre-funding)		<ul style="list-style-type: none"> - Refinancing risk - Liquidity risk 	Challenges due to low rating and SOEs	
		Counterparty (incl. non-payment) risk				

Source: Jobst et al 2019.

Pipeline Origination

Key Takeaways:

- Developing investable infrastructure projects of sufficient size and scale to meet insurers' requirements is a challenge for most EMDEs, especially projects that are LCCR
- Insurers have limited capacity to source projects, apply due diligence and engage in complex structuring in infrastructure investments in countries where they do not have experience or operations

Insurance investors, like most institutional investors, often have a difficult time sourcing infrastructure projects that are of sufficient size and quality to meet their investment standards. (Insurers' investment requirements are reviewed on page 28 of this report). This is especially pronounced in EMDEs, where local governments have limited capacity to develop bankable projects capable of meeting the requirements for institutional investment (Blended Finance Taskforce 2018). Countries seeking to develop LCCR projects face additional technical challenges as well as a more limited supply of projects available for investment.

Investors also expect LCCR projects to meet the same commercial thresholds as traditional infrastructure projects. Emerging market (EM) debt is often used as the comparative benchmark for infrastructure projects; however, infrastructure investments are expected to exceed the returns of EM debt to compensate for their illiquidity.¹⁴ The illiquidity premiums offered by infrastructure investments are actively sought by insurers, especially life insurers, who can afford to lock-in capital that aligns with their long-term liabilities.

In addition, insurance investors have such large portfolios that they do not often have the time or internal capacity to do the origination, due diligence, or structuring for individual infrastructure projects, especially those in EMDEs, where they may lack familiarity or operations.¹⁵ While some insurers invest in individual infrastructure projects, the industry preference is usually for a portfolio approach that would allow them to scale their investments, lower the due diligence and transaction costs, and benefit from diversified exposure. Insurers would benefit from working with development finance institutions (DFIs) and other stakeholders who could support the origination, bundling, and de-risking, through suitable risk-sharing and credit enhancement structures, of LCCR infrastructure investments opportunities in order to achieve the scale necessary to become a larger portion of their portfolios.¹⁶

In order to support institutional investors to deploy capital in EMDE infrastructure, the International Finance Corporation (IFC) launched the Managed Co-lending Portfolio Platform (MCP), which has a designated infrastructure investment window. Through the MCP, IFC sources qualifying projects, provides due diligence, and bundles the investments, allowing outside investors to invest alongside the IFC's capital. In this structure, IFC acts as both a junior equity investor (first-loss), along with the Swedish International Development Cooperation Agency (Sida), and a senior debt investor, along with institutional investors.

To date, the MCP has mobilized more than \$1.6 billion for infrastructure from insurers Allianz, AXA and Prudential. However only \$300 million has been invested thus far, which underscores the challenge in finding quality infrastructure pipeline.¹⁷ (The structure of this fund is reviewed on page 30 of this report).

¹⁴ Based on interviews with twelve insurance investors conducted by UNDP in February and March 2020.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ See <https://www.ifc.org/wps/wcm/connect/4c9e0868-1232-4212-b4f2-a5c39d177afa/MCP+Infrastructure+Flier+2018.pdf?MOD=AJPERES&CVID=mcoa4bt>

Political, Legal, and Regulatory Barriers

Key Takeaways:

- Rule of law, stable regulatory governance and policies are crucial.
- Political risk insurance is available but adds an additional cost that can erode returns.
- The planning, implementation and operations cycles of infrastructure projects can take decades, which exposes risk-sharing and payoff arrangements to electoral cycles and shifting political priorities.
- Underlying resistance to private sector capital funding public infrastructure projects—and profiting therefrom.

The political, regulatory and legal environments in EMDEs are a key consideration for infrastructure investors. Investors want to mitigate risks around currency convertibility, changes in tariff regulation and taxation, breach of contracts, collateral and security, as well as risks of government expropriation of assets, war, terrorism, civil disturbance, and political instability.

The Financial Stability Board (FSB) highlights that, “Political risk, tax policies and non-financial regulation are seen as weakening factors for the demand for infrastructure assets. The high relevance of these factors is rooted in the nature of infrastructure projects, which usually have strong public sector links paired with extensive planning processes and licensing requirements over the entire lifecycle of the project. The size of projects combined with financial and non-financial risks also call for robust legal frameworks and institutions, in case disputes arise among project

stakeholders. Projects with cross-border financing expect providers to have (or obtain) such expertise in those jurisdictions, which adds to risks and costs and is likely to explain the slightly higher weight of this driver for EMDE projects” (FSB 2018).

Different risks manifest at different stages of the project lifecycle. In the construction phase, permit cancellations and contract renegotiations can undermine projects. Once operational, governments may retroactively change tariffs to keep energy prices low, which undermines investor returns and decreases investor confidence in future public-private partnerships.

There are also continuous concerns of currency convertibility, government expropriation,¹⁸ changes in regulation and taxation, discriminatory court practices, and civil unrest when investing in EMDEs. While political risk insurance, such as that offered by the World Bank’s Multilateral Investment Guarantee Agency (MIGA), is available to mitigate these risks and can enhance the credit rating of the underlying investment,¹⁹ it can add an additional cost to investments that erodes returns and decreases the attractiveness of the underlying investment.

On the underwriting side, some insurers are developing their own political risk insurance products to de-risk infrastructure investment in EMDEs. The African Energy Guarantee Facility, developed by the European Investment Bank (EIB), Africa Trade Insurance Agency, and Munich Re, will provide products that include insurance against sovereign or sub-sovereign non-payment under a power purchase agreement (PPA), expropriation and breach of contract, currency inconvertibility, war, civil unrest, and arbitration award default, with the goal of supporting private companies to invest in Africa’s energy sector.²⁰ While in this case Munich

18 For example, the expropriation of oil and gas company YPF by the Argentinian government serves as a cautionary tale for many investors. See <https://www.nytimes.com/2014/02/26/business/international/repsoil-said-to-reach-settlement-with-argentina.html>

19 Such as with the Elazig Hospital PPP in Turkey. See <https://www.miga.org/press-release/innovative-application-miga-guarantees-attracts-long-term-investors-elazig-hospital>

20 See <https://www.munichre.com/en/company/media-relations/media-information-and-corporate-news/corporate-news/2018/2018-03-21-first-long-tenor-political-risk-insurance-to-unlock-usd-1-4-bn-in-clean-energy-investment-in-africa.html>

Re is the underwriter, not the investor, this type of insurance coverage could de-risk infrastructure investment in EMDEs by other insurance investors.

Macroeconomic Barriers

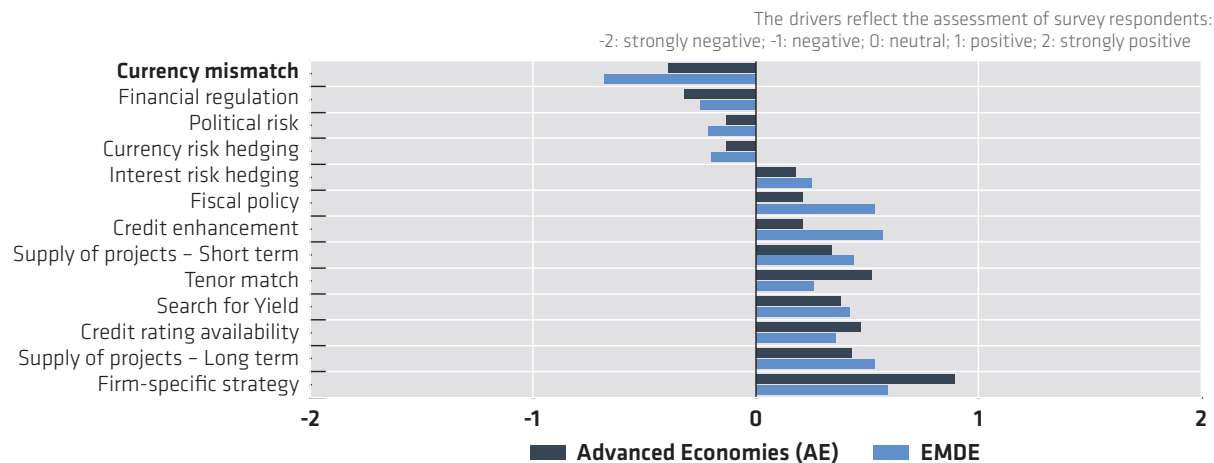
Key Takeaways:

- Matching the long-term investments in the correct hard currencies (usually dollar, euro, or sterling depending on the location of the insurer) with the long-term liabilities of policyholders is critical.
- Investing in emerging market debt, which is usually denominated in either local currency or US dollars, can be prohibitively expensive to hedge, especially for non-US insurers whose balance sheets are usually denominated in euros or sterling.
- While preferable to local currency, investing in EMDE infrastructure denominated in US dollars can also be a challenge, as it exposes the issuer or country to currency risk.
- Inflation is another underlying concern.

For insurers, asset liability management, for example, matching their long-term liabilities with their long-term investments, is crucial. For most global insurers, whose balance sheets are usually denominated in hard currencies such as dollars, euros, or sterling depending on where they are based, it is preferable to invest in the currency in which they receive their premiums. While currency mismatch may be the biggest deterrent for investments in both developed and developing countries, the risk is especially pronounced in EMDEs (figure 4) and for insurance investors (figure 5).

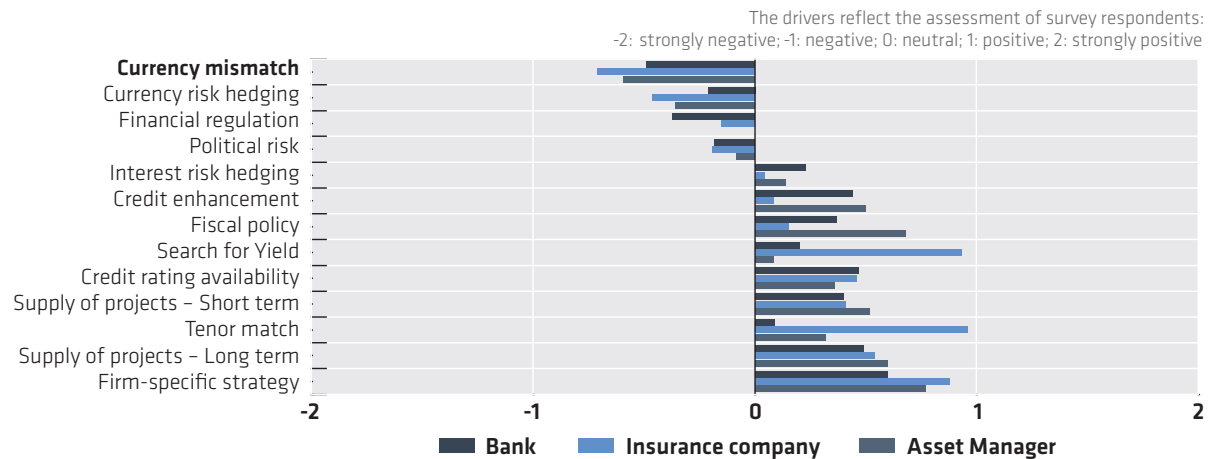
For European insurers, US dollars can be easily hedged but it can be very expensive and erode the overall return on the investment. However, emerging market currencies are often only hedgeable, if at all, via US dollars, which adds an additional layer of costs and complexities that can further erode returns. According to a survey of insurance investors conducted by the FSB, currency risks were cited as the most relevant weakening factor for infrastructure finance. Currency risks are especially pertinent for cross-border financing in EMDEs because it is difficult to hedge local currencies. When the revenues for an infrastructure project are collected in one currency and financed in a different currency, financiers are

Figure 4 Drivers of Portfolio Allocation toward Infrastructure in Advanced and Emerging Economies



Source: FSB 2018.

Figure 5 Driver of Portfolio Allocation toward Infrastructure Finance by Investor Type



Source: FSB 2018.

exposed to significant currency risks, as well as interest rate and credit risks, as a result of the long-term investment horizon (FSB 2018).

While currency hedging, a technique designed to protect an investment from exchange rate fluctuations, can be an option, it can be expensive and add additional complexity to transactions (Verdouw, W., D. Uzsoki and C. Ordonez 2015). In some instances, currency hedging is not available, and even when it is it can be far from perfect, especially for the long maturities applicable to infrastructure investments.

Other than the hedging strategies outlined in box 2, another strategy to circumvent currency risk is local currency financing. While this would be difficult for global insurers with hard currency liabilities, domestic insurers with local currency liabilities may be better positioned to manage this risk if the countries in which they operate allow them to make direct infrastructure investments.

Mobilizing insurance investment to EMDEs will also require attracting domestic institutional investors who have at least \$5 trillion AUM and are growing

rapidly. Domestic institutional investors in EMDEs are historically conservative and currently allocate only a small fraction of their portfolios to infrastructure. While many of these investors face the same challenges as foreign investors including concerns about policy risk and unfamiliarity with infrastructure as an asset class, domestic investors have several advantages. These include a deeper knowledge of local markets and projects that allows them to price country and political risks more accurately as well as avoid the risks of currency fluctuations (Blended Finance Taskforce 2018).

Technical Barriers

Key Takeaways:

- Limited comprehensive asset-level data, construction risks, operating risks, and technological obsolescence are all barriers to infrastructure investment.
- Given the long-term nature of infrastructure investments, insurers want to invest in proven technologies, which can be challenging as clean technologies are rapidly evolving.

Box 2 Hedging Currency Risk

There are four main strategies to hedge currency risk:

- **(Partial) Natural Hedge:** To reduce the asset-liability currency mismatch that occurs when using foreign currency financing for local service delivery, a developer may choose to sell a portion of the project's output to a country with the same currency as its liabilities.
- **Local Currency Swap:** Under a currency swap, two parties agree to exchange principal and/or interest payments of a loan in one currency for an equivalent loan in another currency. Such swaps allow lenders/borrowers and investors to hedge (a part of) their loans/ investments. However, for some emerging and many frontier markets, currency swaps are not commercially viable. The IFC can provide currency swaps for a number of these markets. Furthermore, the Currency Exchange Fund (TCX) is a special-purpose fund that can provide currency hedge products for local borrowers in frontier and less liquid emerging markets.
- **Exchange-rate Indexed Contracts:** If a project's revenues are indexed to the exchange rate, a currency swap is effectively built into the contract. As a result, the currency risk is transferred to the buyer, often a state utility or government entity. While this strategy solves the currency risk for the developer, it does not solve the issue for the buyer/government.
- **Foreign Currency Loan under a Peg:** If a country's currency is pegged to a foreign currency, a developer would consider taking out a loan in the foreign currency, assuming that peg is maintained. However, a currency risk continues to exist as that peg may be undone. The risk ultimately depends on the underlying fundamentals and the political will to support the peg.

Source: <https://www.iisd.org/sites/default/files/publications/currency-risk-project-finance-discussion-paper.pdf>

Different kinds of technical barriers to infrastructure investment manifest at different phases of the project lifecycle. During the planning and design phase for infrastructure, the technical barriers hindering private investment include a lack of comprehensive, asset-level, detailed, and systematic data to make informed assessments of the expected risk-return profile of infrastructure projects (FSB 2018). There is a strong economic argument for resilient infrastructure, in particular, as every dollar invested can save up to six dollars according to the UN.²¹

After the planning and design phases, subsequent phases may encounter various technical barriers including construction risks, operating risks, and technology obsolescence risks, which can be especially pronounced when implementing rapidly evolving clean technologies.²²

Construction and operation risks can be managed by standardizing procurement procedures, adopting a quality-based selection (QBS) approach to engineering and design inputs that results in

21 See <https://www.un.org/press/en/2019/sgsm19807.doc.htm>

22 See <https://www.bloomberg.com/news/articles/2020-01-06/a-1-billion-solar-plant-was-obsolete-before-it-ever-went-online>

Box 3 Coalition for Climate Resilient Investment

The recently launched Coalition for Climate Resilient Investment (CCRI) aims to integrate the pricing of physical climate risks into investment decision-making. To do this, the CCRI will facilitate investor access to open source climate risk information and data (including generation, collation, and analysis) for the appropriate planning and design of infrastructure and to identify investment prioritization areas, particularly for climate- vulnerable geographies. By addressing this data gap, the CCRI aims to strengthen the market for private- and public- sector investment in climate resilient infrastructure.

economic value added across the project lifecycle and follows standardized dispute resolution processes with qualified arbitrators in the event of a delay or dispute (Cook 2017). To manage technology obsolescence risks given the long-term nature of infrastructure investments, insurers prefer investing in proven technologies, meaning those with sufficient track records and performance data; this can hinder the adoption of newer green technologies, such as tidal power.²³

Current insurance solvency regulations in both the EU and US impose risk-based capital charges, meaning investors pay higher capital charges²⁴ for investments considered to have higher levels of risk.

These risk-management frameworks guide the underlying financial stability of the insurance industry (Convergence 2018a). For example, insurers in the EU are governed by Solvency II regulations, which aim to reduce the risk of insolvency by mandating that insurers align their long-term liabilities with their investments. In practice, this means that insurers are incentivized to invest in the currency their balance sheets are denominated in, usually dollars, euros or sterling, which can disincentivize them from making local currency investments in EMDEs.

Financial Barriers

Key Takeaways:

- Insurers domiciled in the EU and US are governed by insurance solvency regulations (including risk capital charges) that can discourage infrastructure investment in EMDEs.
- For insurers domiciled in or with operations in EMDEs, there are often strict government regulations about what they can invest in, such as local government debt/bonds, often excluding direct investment in infrastructure.
- Financial regulators do not specifically incentivize green infrastructure investment.

Under Solvency II, infrastructure loans are subject to risk capital charges similar to those of corporate bonds. These high-yield corporate loans offer a shorter repayment period and receive better capital treatment than investment-grade bonds, which have a longer repayment periods and may disincentivize the EU-based insurers from taking on longer investments, such as sustainable infrastructure (Nassiry, D., S. Nakhoda and S. Barnard 2016). An amendment to the Solvency II insurance regulation introduced “qualifying infrastructure investment” criteria which allow insurers to investment in infrastructure projects with risk characteristics

23 Based on interviews with twelve insurance investors conducted by UNDP in February and March 2020.

24 Capital charges also known as a Solvency Capital Requirement (SCR) are the amount of money an insurer is required to hold.



tailored to the specific risk profile of the asset class and in exchange benefit from reduced capital charges for both debt and equity (Pereira 2018). This specific regulatory treatment, however, is restricted to investments in OECD and European Economic Area (EEA) member countries, so projects in EMDEs do not benefit (Levy 2017).

Solvency II creates an additional hurdle for investing in EMDEs as it constrains outsourcing investment decisions and portfolio management to unregulated entities, which includes transactions managed by DFIs and MDBs. This can limit investor access to infrastructure projects in EMDEs as well as the risk-sharing instruments MDBs can deploy such as junior equity or first-loss tranches (Convergence 2018a). These risk-sharing instruments are particularly important to scale infrastructure investment as insurers are seeking investment-grade projects or funds that are not possible in many EMDEs, because of their sovereign credit ratings, without credit enhancements provided by MDBs.

In 2017, the US Treasury recommended that National Association of Insurance Commissioners (NAIC) and state insurance regulators should consider revising capital charges for high quality infrastructure in order to incentivize insurers to invest while simultaneously upholding financial stability (Pereira 2018). To date, these revisions have not been enacted; however, the NAIC's Center

for Insurance Policy and Research and Capital Markets bureaus are currently collaborating on an infrastructure study for the insurance industry to be released in the latter half of 2020.²⁵

For insurers domiciled in or operating in EMDEs, local government regulations often constrain what institutional investors, including insurers, can invest in, usually incentivizing investment in local government bonds.²⁶ However, there is an opportunity for the UN system to work with insurers based in EMDEs, along with regulators, government ministries, and project developers to develop supportive regulatory regimes that encourage local insurers to invest in infrastructure, especially LCCR projects such as those outlined in countries' NDCs (Blended Finance Taskforce 2018).

Additionally, there are no insurance regulations either internationally or locally that incentivize investment in LCCR infrastructure, such as via reduced capital charges. Interviews with industry investors indicate that revising capital charges to favor qualifying LCCR infrastructure would be an important lever to increase investment in these projects.²⁷ However, risk charges should still be commensurate with the underlying risk of the investment. In order for regulators to offer favorable capital charges for green and resilient infrastructure it is critical to demonstrate that these projects lower financial risks for investors.

25 See https://content.naic.org/cipr_topics/topic_infrastructure_investments.htm

26 Based on interviews with twelve insurance investors conducted by UNDP in February and March 2020.

27 Ibid.



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04

WHAT INDUSTRY NEEDS AND HOW THE UN CAN ENGAGE

04 | What Industry Needs and How the UN Can Engage

What is the Industry Seeking?

Given the range of challenges and barriers, both real and perceived, what are the key criteria and investment structures that can mobilize and scale investments from the insurance industry into low-carbon and climate resilient infrastructure in emerging markets and developing countries?

Common Investment Criteria

While each company will have its own approach to infrastructure investments, Table 3 below aggregates some of the common requirements and or preferences for infrastructure loans in emerging markets based on interviews with investors from the insurance industry.

Table 3 Key Insurance Infrastructure Investment Criteria

Investment Criteria	Infrastructure Preferences ²⁸
Investment Appetite	<ul style="list-style-type: none"> - Strong preference for investment grade - Preference for larger investment vehicles and funds, for example, \$200-500m and more, scalability is important
Investment Structure	<ul style="list-style-type: none"> - Preference for pooled/portfolio approaches to increase diversification and reduce risk - Some insurers will make direct investments in specific projects - Where possible, standardized documentation can facilitate scale and reduce due diligence costs
Spread	<ul style="list-style-type: none"> - Commercial pricing of final investment (looking for a return above hard currency emerging market debt of a similar rating) - Often actively seeking illiquidity premium from infrastructure
Rating	<ul style="list-style-type: none"> - Some flexibility with individual loan ratings in the portfolio, but overall investment vehicle is expected to be investment- grade - Exclusion of loans below B rating - Investment grade rating can be achieved via first-loss tranche from DFIs and donors - Some firms will choose to do internal ratings accounting for regulatory capital charges
Risk Mitigant	<ul style="list-style-type: none"> - Diversification strategies across countries, sectors and issuers - First-loss protection from DFIs or donors at the portfolio level, not for single projects - Political risk insurance
Country	<ul style="list-style-type: none"> - No specific country exclusions, but prefer diversification - Wish to avoid reputational risk associated with corrupt governments or countries with weak enabling environments - Concern for expropriation risk and repatriation of money - Preference for countries where they have operations and understand the market

²⁸ Based on interviews with twelve insurance investors conducted by UNDP in February and March 2020.

Table 3 Key Insurance Infrastructure Investment Criteria (continued)

Investment Criteria	Infrastructure Preferences ²⁸
Currency	<ul style="list-style-type: none"> - Strong preference for hard currencies due to asset liability matching requirements - Local currency hedging is possible but adds additional costs and complexities
Sectors	<ul style="list-style-type: none"> - Broad sector interests but diversification is still important - Some sub-sector restrictions
Loan Tenor	<ul style="list-style-type: none"> - Up to seven years for corporates and up to 20 years for infrastructure
# of Investments per Vehicle	<ul style="list-style-type: none"> - 25+ to ensure sufficient diversification
Individual Ticket Size	<ul style="list-style-type: none"> - No restrictions, depends on overall investment size and sufficient diversification is important
Underwriting DFI	<ul style="list-style-type: none"> - Strong track record for underwriting and experience in the selected country - Co-investment to demonstrate vested interest in the success of the vehicle



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Successful Infrastructure Investment Structures

The insurance industry and related partners have attempted to combine their visions for mobilizing infrastructure investment in EMDEs. Some of the most prominent examples are described below.

IFC MCPP Infrastructure

IFC MCPP has mobilized investment into EMDE infrastructure from several major insurance investors including AXA, Allianz, and Prudential through a junior equity, for example, first-loss tranche, capitalized by Sida and IFC, and a senior debt tranche funded by institutional investors, predominantly from the insurance industry (Figure 6).

While the MCPP has raised \$ 1.6 billion from investors, it has only approved and deployed \$300

million across nine projects indicating that sourcing a qualifying pipeline of projects in EMDEs is a challenge.

Emerging Africa Infrastructure Fund

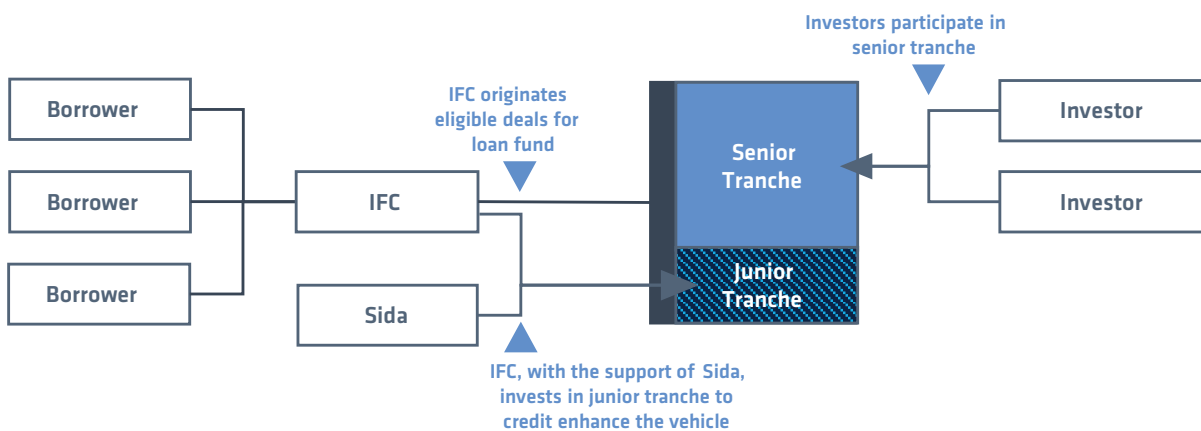
The Emerging Africa Infrastructure Fund is a blended multi-donor fund that provides long-term debt to private sector companies building or expanding essential infrastructure in Sub-Saharan Africa.

The fund is \$1.05 billion with \$419 million in first-loss funding from donors and \$627 million in senior debt, including \$120 million from global insurer Allianz, which is a leverage ratio of almost \$1.5 private sector capital mobilized per \$1 of concessional capital (Convergence 2018b).

Figure 6 IFC MCPP Infrastructure Fund Structure

MCPP Infrastructure offers an example of how a first - loss structure can be used to provide credit enhancement for institutional investors in order to achieve a target risk level on their portfolio.

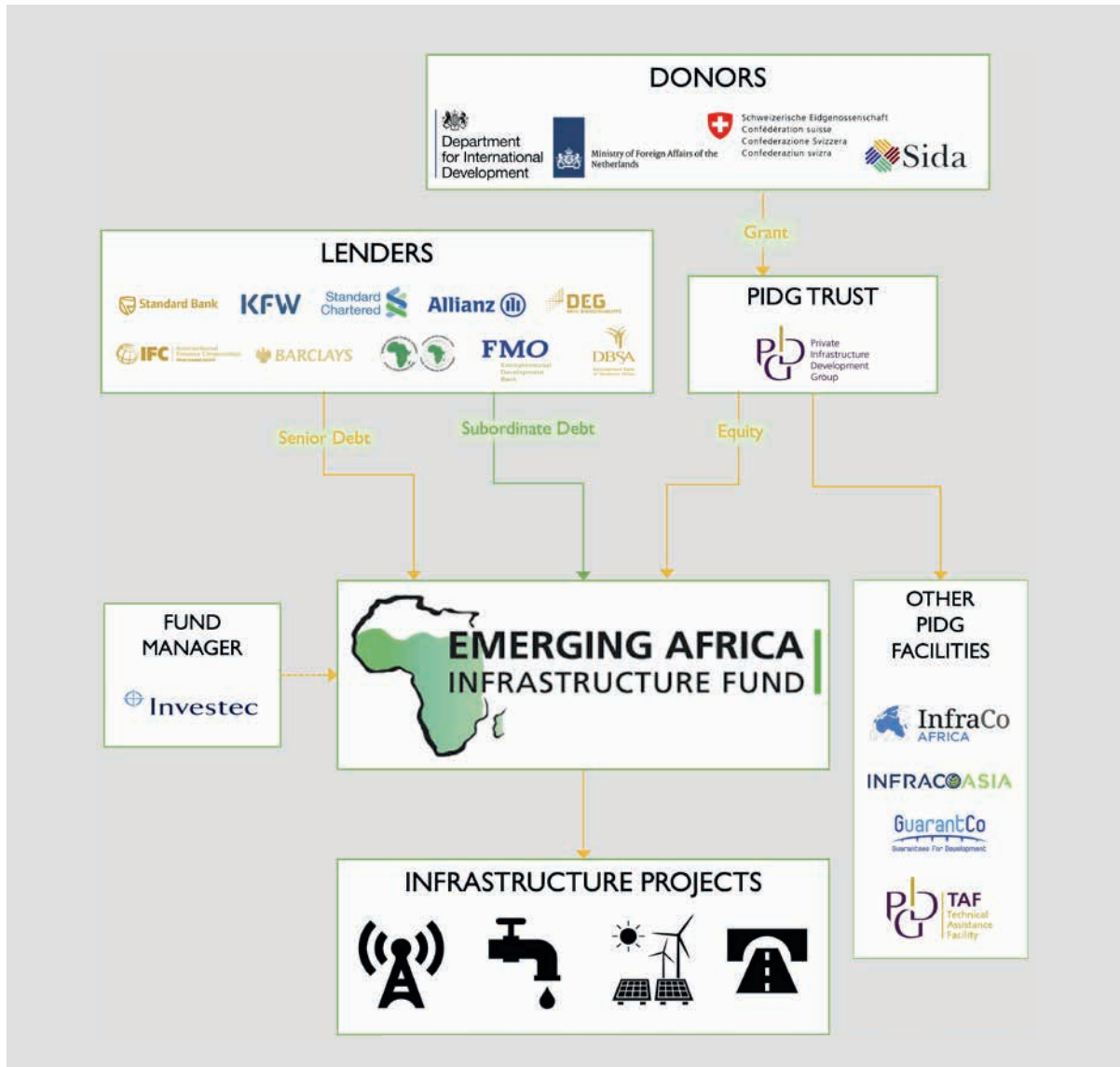
In this facility, IFC provides first - loss coverage on the portfolio by taking a junior tranche so that investors can take investment - grade exposure in a senior tranche. The first loss splits the cash flows (principal and interest) from the portfolio of loans between the investors and IFC. IFC has in turn partnered the Swedish International Development Cooperation Agency (Sida), which has agreed to share the risk with IFC on the first - loss tranche.



Source: IFC MCPP Website.²⁹

²⁹ <https://www.ifc.org/wps/wcm/connect/4c9e0868-1232-4212-b4f2-a5c39d177afa/MCPP+Infrastructure+Flyer+2018.pdf?MOD=AJPERES&CVID=mcoa4bt>

Figure 7 EAIF Structure



Source: Convergence 2018b.

Industry Recommendations for UN Engagement

As a trusted convener of stakeholders across the public and private spheres, and with a presence in every developing nation, the UN can play a pivotal role in supporting insurance investors to scale

their investments in critical LCCR infrastructure in EMDEs. Interviews with industry experts revealed key thematic areas where the UN could support insurance investment. While this is not a comprehensive analysis of all potential collaborations, it does represent some of the most significant areas of deepening engagement as requested by industry.



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Macro-level Engagements

These are the macro-level activities the UN can undertake to support the development of new economic and financial models for resilient infrastructure investment, advocate for improved global regulatory treatment of infrastructure, and coalesce around low-carbon standards.

Support Resilient Infrastructure Investment

While investment in low-carbon infrastructure such as utility-scale renewable energies and low-carbon transport has grown tremendously in recent years, investment in adaptation and resilience remains significantly underfunded, especially from private and commercial sources (Buchner et al 2019). Historic challenges to funding adaptation

and resilience have been the result of knowledge gaps,³⁰ short-term planning horizons, and undefined opportunities for revenue generation and cash flow protection and/or enhancement (Global Commission on Adaptation 2019). Despite these funding challenges, the need for adaptation and resilience financing is growing every year as a result of the increased intensity of acute events such as floods and wildfires, as well as chronic events such as droughts and sea level rise.³¹ Each type of event provides corresponding entry points to model the impact of climate change and natural disasters on the cash flow for infrastructure assets.

The insurance industry is responsible for underwriting the impact of many climate-related risks to physical

30 Such as the analytical challenges in projecting financial exposure, the amount an investor stands to lose should the investment fail, along investor timelines.

31 See <https://www.ncdc.noaa.gov/billions/events>

assets, businesses, governments, and individuals. This strong understanding of climate risk makes the industry uniquely positioned to support and incentivize private investment in adaptation and resilience. The UN can work with the insurance industry to scale and incentivize investment in climate resilient infrastructure through several activities including:

- **Collaborating with the Coalition for Climate-Resilient Investment** - Launched at the UN Climate Action Summit, the CCRI is a private sector-led group that seeks to transform infrastructure investment by integrating physical climate risk (PCR) considerations into investment decision making and to build the economic and financial case for public and private investment in climate resilient infrastructure. Major investors—with more than \$8 trillion in balance sheet assets under management, including Zurich Insurance and reinsurance broker Willis Towers Watson—have endorsed the CCRI and its efforts to develop a common approach to assess, integrate, and price climate risks to incentivize resilient infrastructure investments.³² The UN is currently engaging with the CCRI and exploring opportunities to work with developing country governments to price PCRs and develop bankable pipelines of resilient infrastructure investments. Insurers can scale their climate-aligned investments through these opportunities.
- **Piloting resilient infrastructure investment mechanisms** - Work with industry to incentivize resilient infrastructure investment in EMDEs through structures that reduce insurance premiums in exchange for enhanced resilience measures. Improving the resilience of infrastructure assets reduces their climate-related risks as well as the potential liability

of the insurers underwriting these risks. The UN can work with industry to pilot innovative financing mechanisms such as insurance-linked loan packages, resilience service companies (ReSCOs), and insurance linked securities such as catastrophe and resilience bonds to incentivize increased public and private investments in critical climate resilience infrastructure. This includes incentivizing the protection and enhancement of natural capital infrastructure such as mangrove and coral reefs, which can insulate vulnerable coastal communities from tropical storms.

Advocate for the Reassessment of Insurance Solvency Regulations

International insurers, usually concentrated in the US and Europe, are governed by the regulations of their domicile which are responsible for assigning capital charges for different types of investments according to their risk profile. However, many of these regulations, such as Solvency II in Europe, can discourage infrastructure investments in developing countries and emerging markets with capital charges that are disproportionate to the historical default risks (Levy 2017).

The UN can advocate for the recommendations made by the G20 to review the regulatory treatment of infrastructure investment by institutional investors.³³ The UN (through senior and technical leadership provided by UNDP) is already supporting this work via the Insurance Development Forum (IDF), a public-private partnership with the insurance industry to support the achievement of the SDGs by improving risk management, enhancing resilience and directing capital flows towards sustainable infrastructure in emerging markets. Within the IDF, the Law Regulation and Resilience Policies Working Group (LRRP) works directly with regulators and central banks to improve the regulatory treatment of infrastructure, particularly in EMDEs,

32 See https://www.adaptation-undp.org/sites/default/files/uploaded-images/coalition_for_climate_resilient_investment_cas_launch_.pdf

33 See <https://www.globalfinancialgovernance.org/report-of-the-g20-epg-on-gfg/>

to be commensurate with the real risks of these investments. Through the LRRP, the International Association of Insurance Supervisors (IAIS) is in discussion with the IDF to define infrastructure, including a subsection of green infrastructure, as a separate asset class so that it can reevaluate appropriate risk capital charges. The UN can also amplify its support for revising capital charges for infrastructure in high-level political forms and other existing platforms.

In addition, the UN can and should work with industry to advocate for favorable capital charges for LCCR infrastructure which the industry has indicated would provide powerful incentives for increased investment.³⁴ Similarly, the UN can advocate for punitive capital charges for new carbon-intensive investments that are more likely to become stranded assets, such as coal, oil, and gas projects, and thus financial liabilities to investors.³⁵ Joint research and evidence into these critical spaces should be explored and provided to decision-makers at the highest levels.

Standardizing Green Investment Taxonomy and Reporting

Related to advocating for favorable capital charges for low-carbon and climate resilient infrastructure investments, the UN can develop and or endorse reporting standards and taxonomies that clarify the types of activities and technologies that are aligned with the low-carbon transition.

Insurance investors often question whether the allegedly green projects they are investing in are truly green given the numerous competing standards, certifications, and reporting methodologies. Insurers invest at such a large scale that they often do not have the time and or capacity to perform due diligence on individual projects.³⁶ EIOPA notes, “The

industry still lacks a standardized reporting on green investments, emission metrics and climate impact of exposures which would help to enhance the use of scenario analysis in risk modelling and portfolio management” (EIOPA 2019).

Consequently, having the UN support an existing taxonomy, such as the one proposed by the EU Technical Expert Group on Sustainable Finance, or work with diverse stakeholders to harmonize a universal reporting standard for LCCR infrastructure, would enable the industry to better select and prioritize investments to ensure they are environmentally sustainable. However, low-carbon standards that are too complex can be challenging for EMDEs to meet and can consequently lead to a limited supply of qualifying LCCR investment opportunities.³⁷ In light of this challenge, the UN should work to ensure that LCCR standards are not so prescriptive as to exclude or dissuade EMDEs from meeting them.

Country-level Engagements

At the country-level, the UN can work with local governments, regulators, developers, and other stakeholders to improve local enabling environments, build a bankable pipeline of LCCR infrastructure projects, and support financial de-risking of qualifying projects and portfolios.

Improve Local Enabling Environments

Many of the biggest barriers to investment in emerging markets and developing countries, especially for long-term investments such as infrastructure, are the risks posed by weak legal, regulatory, and policy environments. There are several areas in which the UN can engage to address these issues. These should be complimented by continuing technical assistance in general good

34 Based on interviews with twelve insurance companies conducted by UNDP in February and March 2020.

35 See <https://www.ft.com/content/95efca74-4299-11ea-a43a-c4b328d9061c> However, bearing in mind the role natural gas may play during the energy transition.

36 Based on interviews with twelve insurance investors conducted by UNDP in February and March 2020.

37 Ibid.



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governance in EMDEs, such as in anti-corruption, rule of law, tax legislation and enforcement, legal frameworks for public-private partnership, etc.

- **Scale and continue efforts to reduce inherent political risks, create stable governments and institutions and improve local investment conditions.** In countries with weak legal systems, political instability, and/or poor regulatory frameworks, the risks of investment are often too high for many investors, including those from the insurance industry. International insurers will often want to invest in projects in EMDEs through assets held by their insurer located in that jurisdiction. To scale investments, it is very important that insurance solvency rules in

EMDEs are reasonable and well-designed, but they are often not. In order to facilitate private investment in these markets, the UN can continue to work with local governments to develop fair and efficient dispute resolution processes, build institutional capacity, improve policy stability including the creation of policies that incentivize clean energy investment such as auctions and feed-in tariffs, and ensure adherence to private sector agreements including power purchase agreements (PPAs) and tax incentives (CFLI 2019). Within UNDP, there are on-going efforts to support ministries of finance to design and implement Integrated National Financing Frameworks (INFFs) as policy frameworks and roadmaps toward policy coherence, including climate investments,



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domestic resource mobilization, management and planning of projects, alignments of private investments to national plans, NDCs, and the SDGs which can be further leveraged to create the appropriate enabling environments for insurance investment. The UN can also work with governments to develop Public Private Partnership (PPP) frameworks that define good practice in order to incentivize and prioritize investment in resilience.

- **Work with ministries of finance and financial regulators and supervisors in EMDEs to allow locally domiciled insurers to invest in infrastructure and create appropriate, risk-adjusted incentives for LCCR investments**, such as infrastructure projects aligned with a country's NDCs and other green investment strategies. As with insurers domiciled in the EU and US, insurers with operations in developing countries are controlled by local regulators who often restrict their investments to government bonds. The UN can support ministries of finance and regulators to expand the scope of acceptable investments for insurers to include alternative assets including infrastructure, similar to how the Chilean government expanded the scope of acceptable investments for pension funds to include infrastructure and private equity in 2017³⁸, as well as propose reduced capital charges for LCCR infrastructure investments.

Support with Project Origination

Finding a pipeline of bankable projects is the single biggest barrier to scaling insurance investment in infrastructure. Insurance investors have massive portfolios, with hundreds of billions of dollars or even trillions of dollars often being managed by a single company. This means they need investments capable

of absorbing substantial amounts of capital, such as corporate bonds and listed equities. Investments into these asset classes can be easily scaled and require significantly less due diligence and manual work than infrastructure investments, especially those in unfamiliar and politically complex environments such as EMDEs.

In order to scale infrastructure investment in developing countries, insurers need support originating projects of sufficient size and quality to meet their investment requirements. The UN has a presence in all developing countries making it well-positioned to help insurers, many of whom do not have a physical presence in these countries, identify infrastructure investment opportunities and facilitate meetings among project developers, investors, and government officials, while maintaining financial neutrality to moderate the project process for all stakeholders.

For example, UNDP is well positioned to act as a facilitator through its country presence and engagement with the Insurance Development Forum and its Investment Working Group, which is focused on supporting insurers to direct a portion of their \$33 trillion AUM toward sustainable infrastructure in EMDEs. Additionally, SDG Impact,³⁹ a UNDP initiative, is developing investor maps that identify priority sectors and subsectors related to the achievement of the SDGs where investors can find attractive risk adjusted returns. These maps can serve as a roadmap to bring governments, developers and investors together to create bankable investment opportunities.

Several insurance investors expressed interest in taking these opportunities and aggregating them into a platform that could match supply and demand by providing insurers access to critical information on the country and political landscape, project size,

38 See <http://www.infraestructurapublica.cl/wp-content/uploads/2018/10/News-Analysis-Chilean-pension-funds-target-alternative-assets-higher-returns.pdf>

39 See <https://sdgimpact.undp.org/>

duration, and risk/reward profile while ensuring maximum transparency.⁴⁰ These opportunities could be integrated into existing projects such as the Climate Investment Platform (CIP), a joint initiative between UNDP, the Green Climate Fund (GCF), Sustainable Energy for All (SE4All), and the International Renewable Energy Agency (IRENA)⁴¹ and Closing the Investment Gap (CIG) for Sustainable Infrastructure, a project structuring and deal transaction intermediation service co-convened by the University of Maryland and UNDP.⁴²

The UN can also identify opportunities to make projects more sustainable and resilient during the design phase. This can include the integration of natural capital elements, such as mangroves, coral reefs, and wetlands, into infrastructure design as a way to improve climate resilience, generate new revenue, and lower operating and construction costs.

Financial De-risking

Infrastructure investments in EMDEs require investors to take on risks that may be outside their comfort zone or even their operational mandate.

In order to improve the risk/reward ratio of these investments, investors may seek out blended finance solutions which can reduce their risk exposure through various financial instruments and structures such as junior equity, guarantees, political risk insurance, and currency hedging.

Many insurance investors prefer investment vehicles or direct investments that have been de-risked through these instruments, however this is more typically within the domain of DFIs than the UN. While certain UN organizations such as United Nations Capital Development Fund (UNCDF) are in a position to offer some financial de-risking support, they are not capitalized at a sufficient scale to close the infrastructure investment gap, currently estimated at \$18 trillion.⁴³ However, the UN is well-positioned to support countries in navigating access to blended finance tools such as guarantees, first-loss, currency hedging, and political risk insurance from DFIs, foundations, and climate funds that could be used to crowd-in private investment and make transactions more attractive to both insurers and their regulators.

40 Based on interviews with twelve insurance companies conducted by UNDP in February and March 2020.

41 See <https://www.climateinvestmentplatform.com>

42 See <https://cgs.umd.edu/research-impact/projects/initiative-closing-investment-gap-sustainable-infrastructure>

43 See <https://outlook.gihub.org>



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05

CONCLUSION

05 | Conclusion

One of the most critical cornerstones for mitigating global emissions and improving resilience depends on how the world chooses to design the \$84.5 trillion in infrastructure needed between now and 2040, especially in EMDEs where the need and investment gaps are greatest. With its preference for long-term liabilities and understanding of climate risk, the insurance industry can play a powerful role in mobilizing and scaling institutional investment in LCCR infrastructure.

While many insurers have committed to net-zero carbon emissions, in order to align their portfolios with these commitments and transition more investment capital into sustainable infrastructure in EMDEs, significant changes must be made to strengthen financial systems, improve regulatory environments, and generate a supply of investable projects. In parallel, the insurance industry and individual companies will need to collectively build their understanding of these markets, how they operate, and the opportunities they present.

The UN has a critical role to play in addressing these issues and working with industry to unlock private finance. At the global level, the UN can advocate for the development of infrastructure as an asset class and a subsection of low-carbon and climate resilient infrastructure, with appropriate risk capital charges for both, in partnership with ministries of finance, insurance supervisors and regulators. Working with investors, governments, and data providers, the UN can also continue to build and amplify the evidence and business case for resilient infrastructure investments.

At the country level, perhaps where the UN can make its greatest contribution, it can leverage its long-standing government partnerships across multiple sectors to improve local regulatory environments

and transform climate commitments into investable projects. A steady pipeline of infrastructure projects can be aggregated into investment vehicles with de-risking instruments, such as political risk insurance, guarantees or first-loss, provided by DFIs at the portfolio level. Bundling projects into funds, especially those that are investment grade through credit enhancements, allows insurers and other institutional investors to deploy capital at scale.

Finally, as a convener on many levels, the UN can bring together diverse stakeholders from across the public and private sectors to build the critical partnerships necessary to bring these changes to fruition. These should be explored systematically, using partnership vehicles such as the Insurance Development Forum, InsuResilience Global Partnership, and the Sustainable Insurance Forum to structure and deliver joint action.

It is clear that the success of Agenda 2030 hinges on mobilizing significant private investment from the world's institutional investors - including the insurance industry and its \$33 trillion AUM - into infrastructure that is low-carbon and climate resilient. To achieve this, the UN, industry, and governments can work alongside one another to develop investment opportunities, refine the business case for resilience, build stronger institutions and create robust policies and regulations that will appropriately allocate risk among those who can best manage it.

Without dedicated and long-term cooperation between the insurance industry and the development sector to create scalable pathways to low-carbon and climate resilient investment, such as is argued in this report, the Paris Agreement will fail, and the SDGs will not be realized, an outcome that would have significant and far-reaching consequences for all.



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Appendix 1: Invest4Climate

To address the climate investment gap, the World Bank Group and the United Nations Development Programme (UNDP) co-launched the Invest4Climate platform in September 2017. Invest4Climate aims to mobilize, coordinate, and deliver finance to close the climate financing gap and help countries transition to a resilient low-carbon future that supports jobs and growth.

Invest4Climate acts as a convener, facilitator and knowledge provider to leverage finance and facilitate scaled-up approaches to tackle climate's biggest challenges			
	 Convener	 Deal Facilitator	 Knowledge Provider
<ul style="list-style-type: none"> - Mobilizing existing teams and relationships in developing countries - Drawing on WBG unique suite of financial tools, resources and knowhow - Incorporating blended finance and maximizing finance for development approaches - Amplifying success stories at global scale to influence the regulatory and policy environments 	<ul style="list-style-type: none"> - Convening potential providers of finance at senior decision-making level around common challenges and specific climate mitigation and resilience investment opportunities - Convening governments, financial institutions, investors, philanthropists, and multilateral banks to support policy reform and crowd in private investment 	<ul style="list-style-type: none"> - Bringing respective UN & WBG experience in pipeline identification - Assisting potential climate focused transactions to prepare for and come to market for finance - Facilitating the identification and allocation of risks to providers of finance that can best manage them. - Leveraging investment and de-risking instruments through targeted policy and regulatory support; technical assistance and advocacy; financial engineering (loans, grants, guarantees, policy lending, results based finance 	<ul style="list-style-type: none"> - Driving knowledge sharing and capacity building on climate action and finance - Piloting and demonstrating viable deals, standardization and new models for de-risking and scaling climate investment

Appendix 2: Key Financial Regulations and their Impact on Institutional Investor Segments in the US, EU, and UK

	Legislative Region	Leverage limits	Collateral req.	Liquidity req.	Central clearing	Private equity limits	Trading tax	Brokerage fee limits	Deposit and reporting req.	Compensation limits	Pension funds	Insurance companies	Banks	Asset/wealth managers	Private equity
Dodd-Frank Wall Street Reform and Consumer Protection Act	US														
619 (12 U.S.C. 1851) of the Dodd-Frank Act (Volcker Rule)	US														
Foreign Account Tax Compliance Act	US														
Third Basel Accord / Capital Requirements Directive	All														
Undertakings for the Collective Investment of Transferable Securities V	EU														
Alternative Investment Fund Managers Directive	EU														
Solvency II Directive	EU														
Markets in Financial Instruments Directive II	EU														
European Market Infrastructure Regulation	EU														
European Commission's Liikanen proposals	EU														
Financial Transaction Tax	EU														
Packaged Retail Investment Products	EU														
International Financial Reporting Standards	EU/ US														
Retail Distribution Review	UK														

Source: Better Finance, Better World 2018 Report.

