G20/OECD/WB Stocktake of Tools and Instruments Related to Infrastructure as an Asset Class – Background report

July 2018

At the first meeting of the G20 Infrastructure Working Group (IWG), held in Buenos Aires from 4-5 December 2017, several members highlighted the importance of work on infrastructure issues previously developed in the G20, and other fora. To avoid duplication and add real value to its work, the IWG asked the OECD and the WBG to undertake a stocktake of work achieved by the G20, and elsewhere, on infrastructure, particularly pertaining to the development of infrastructure as an asset class. This non-exhaustive stocktake focuses on tools, standards, and instruments.

A preliminary draft stocktake report was presented to the G20 IFA meeting on 23 February 2018, with additional comments provided since then. A revised version was transmitted to the G20 IWG for comments during June 2018. The present document is now being circulated as a background document to the G20 Deputy FMCBG and FMCBG meetings in July.

Contacts: Mr. André Laboul, Special Advisor to the OECD G20 Sherpa and Senior Counsellor, OECD Directorate for Financial and Enterprise Affairs [Tel: +33 1 45 24 91 27| Andre.LABOUL@oecd.org]; Mr. Jordan Schwartz, Director, Infrastructure PPPs and Guarantees, WBG [Tel: +1 202 458 2535 | jschwartz3@worldbank.org]

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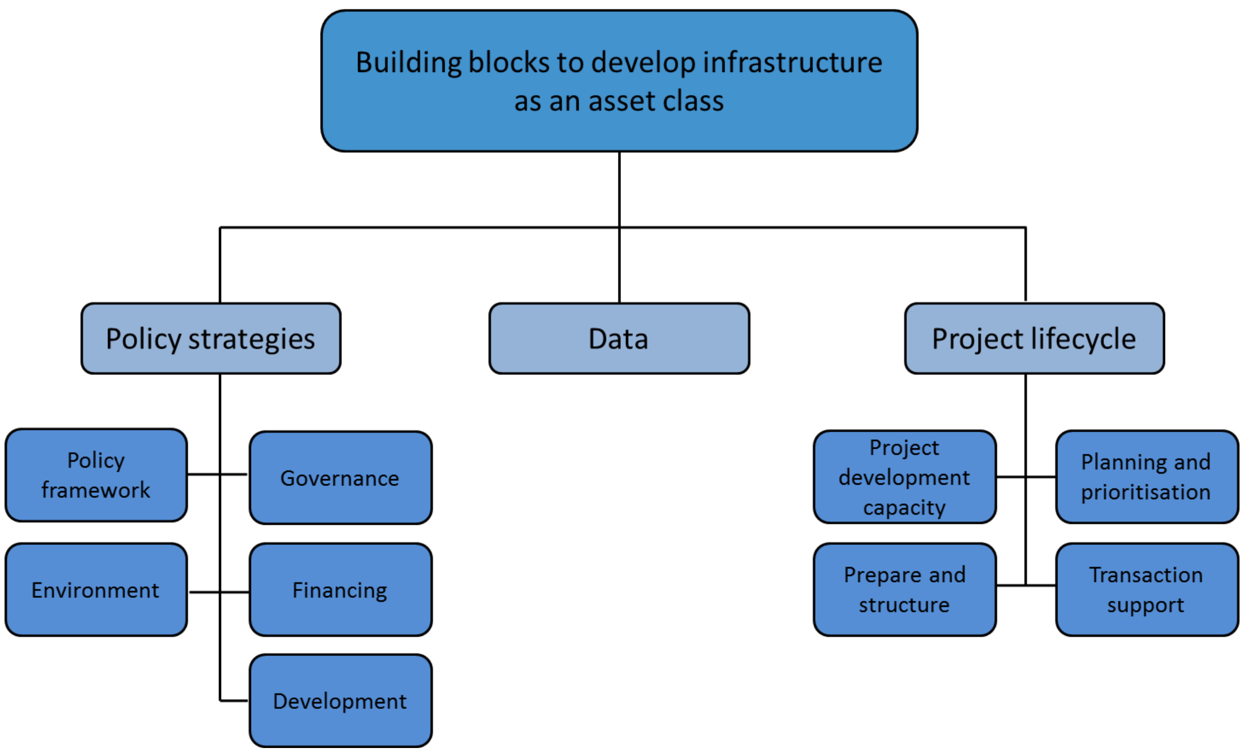
Introduction

At the first meeting of the G20 Infrastructure Working Group (IWG), held in Buenos Aires on 4-5 December 2017, several members highlighted the importance of work on infrastructure issues previously developed in the G20, and other fora. To avoid duplication and add real value to its work, the IWG asked the OECD and the WBG to undertake a stocktake of work achieved by the G20, and elsewhere, on infrastructure, particularly pertaining to the development of infrastructure as an asset class.

As agreed, the stocktake focuses on tools, standards and instruments, both international (as recognised by governments at international level) and institutional (as developed by institutions without (yet) official country recognition).[1] The most common governmental recognition used in the stocktake refers to acknowledgements by G20 Finance Ministers, Central Governors and G20 leaders (ranging from tools that were "welcomed/received" to the rarely-used "endorsed/agreed") but also takes account of any other relevant international or institutional instruments. At this stage, instruments have been categorised into two main groups: i) policy strategies, and ii) project life cycle, with its various subcomponents. This reflects categorisation endorsed previously by the IIWG (2015).The stocktake also reviews infrastructure data sources, which are a necessary ingredient to develop an infrastructure asset class. Figure 1 reflects the main structure of the stocktake report.

Figure 1. Main structure of the stocktake report



[1] Further work may include the identification of selected tools, standards, and instruments at the national level, based on a relevant process to be considered.

In addition to the OECD and WBG, the following IOs were also invited to contribute information on relevant instruments: ADB, AfDB, AIIB, EBRD, EIB, FSB, IADB, IFC, SIF, IMF, ISDB, GI Hub, NDB, and UN. A preliminary draft stocktake report was presented to the G20 IFA meeting on 23 February 2018, with additional comments provided since then. Based on the identification of tools and instruments, a list of examples of possible elements for future work, as identified by some IOs and some member countries, is also provided at the end of this document. A revised version was transmitted to the G20 IWG for comments by 27th June before being circulated as a background document at the G20 Deputy FMCBG and FMCBG meetings in July.

Table 1 lists the structure of the stocktake report. Tables 2, 3, and 4 below list all policy tools, standards, and instruments referenced in the stocktake, grouped by category, as follows: A. Policy-related tools and instruments; B. Project-related tools and instruments, and C. Infrastructure-related data. The "Status" column records recognition of the various tools and standards, helping to map out previous policy work completed through the IWG.

Table 1. Structure of the stocktake of infrastructure policy tools, standards, and instruments

Tools, standards and instruments that help develop infrastructure as an asset class	Status	
A. Policy-related tools and instruments	**Internationally recognised tools**	**Institutional tools**
I. Framework		
II. Financing		
III. Governance		
IV. Development		
V. Environment		
B. Project-related tools and instruments		
I. Planning and prioritisation		
II. Institutional capacity for project development		
III. Project preparation		
IV. Transaction support and contract management		
C. Infrastructure-related data		

Table 2. Policy-related tools and instruments

Tools, standards and instruments that help develop infrastructure as an asset class	Status	
A. Policy-related tools and instruments	**Internationally recognised tools**	**Institutional tools**
I. Framework		
G20/OECD Report on G20 Investment Strategies	Endorsed by G20 Leaders	
G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment	Recognised by G7 FM&CBG	
Leading Practices on Promoting and Prioritising Quality Investment	Recognised by G20 FM&CBG	
OECD Policy Framework for Investment	Recognised by G20 FM&CBG	
OECD Principles for Private Sector Participation in Infrastructure	Recognised by G20 FM&CBG	
Quantifying the Socio-economic Benefits of Transport	Recognised by OECD and ITF countries	
Strategic Infrastructure Planning: International Best Practice:	Recognised by OECD and ITF countries	
Port Investment and Container Shipping Markets	Recognised by OECD and ITF countries	

II. Financing		
G20/OECD High-level Principles of Long-term Investment Financing by Institutional Investors	Endorsed by G20 Leaders	
Effective Approaches to Support Implementation of the G20/OECD High-level Principles on Long-term Investing Financing by Institutional Investors	Recognised by G20 FM&CBG	
G20/OECD Checklist on Long-term Financing Strategies and Institutional Investors	Recognised by G20 FM&CBG	
WBG/OECD Project Checklist for PPPs	Recognised by G20 FM&CBG	
G20/OECD Checklist on Long-term Investment Strategies and Institutional Investors	Recognised by G20 FM&CBG	
Investment Governance and the Integration of ESG Factors (OECD)	Recognised by OECD countries	
Infrastructure Financing Instruments and Incentives: A Taxonomy (OECD)	Recognised by G20 FM&CBG	
G20/OECD Guidance Note on Diversification of Financial Instruments for Infrastructure and SMEs	Endorsed by G20 Leaders	
G20/OECD Effective Approaches to Financial Instruments for Infrastructure Financing	Recognised by G20 FM&CBG	
Risk Mitigation and Allocation in Infrastructure in APEC Economies: Selected Good Practices (OECD)	Recognised by APEC FM&CBG	
Diversifying Financing Sources and Fostering Private Sector Involvement in Infrastructure Investment in APEC Economies (OECD)	Endorsed by APEC Leaders	
WBG/IMF/OECD Capital Market Instruments to Mobilise Institutional Investors to Infrastructure and SME Financing in Emerging Market Countries	Recognised by G20 FM&CBG	
IMF/WBG Note on Policies to Integrate Islamic Finance into Global Finance	Recognised by G20 FM&CBG	
Promoting the Use of Capital Markets for Infrastructure Financing - Lessons for Securities Markets Regulators in Emerging Market Economies		WBG
III. Governance		
OECD Framework for the Governance of Infrastructure	Recognised by G20 FM&CBG	
OECD Guidelines on Corporate Governance of State-Owned Enterprises	Recognised by OECD countries	
Private Sector Participation in Water Infrastructure: OECD Checklist for Public Action	Recognised by OECD countries	
OECD Anti-Bribery Convention	Recognised by G20 FM&CBG	
OECD High-Level Principles for Integrity, Transparency and Effective Control of Major Events and related Infrastructures	Recognised by OECD countries	
OECD Guidelines for Multinational Enterprises	Recognised by G20 FM&CBG and G7 Leaders	
G20/OECD Principles of Corporate Governance	Endorsed by G20 Leaders	
Public Private Partnerships for Transport Infrastructure: Renegotiation and Economic Outcomes (ITF)	Recognised by OECD and ITF countries	
WBG Benchmarking PPP Procurement		WBG
GIH InfraCompass		GI Hub
IMF Public Investment Management Assessment (PIMA)		IMF
IV. Development		
United Nations Sustainable Development Goals	Recognised by G20 FM&CBG	
OECD DAC Blended Finance Principles for Unlocking Commercial Finance for the SDGs	Recognised by OECD Countries	
Making Blended Finance work for the SDGs (OECD)	Recognised by OECD Countries	
Partnering to Build a Better World: MDBs' Common Approaches to Supporting Infrastructure Development	Recognised by G20 FM&CBG	
MDB Action Plan on Balance Sheet Optimisation	Recognised by G20 FM&CBG	
Principles of MDBs' Strategy for Crowding-in Private Sector Finance for Growth and sustainable Development	Recognised by G20 FM&CBG	

Joint MDB Statement for Crowding-in Private Finance	Recognised by G20 FM&CBG	
MDBs' Joint Declaration of Aspirations on Actions to Support Infrastructure Investment	Recognised by G20 FM&CBG	
MDBs Global Toolbox		MDB
WBG Practical solutions and models for addressing obstacles to institutional investment in infrastructure in developing countries		WBG
V. Environment		
Overcoming Barriers to International Investment in Clean Energy		OECD
OECD Policy Guidance for Investment in Clean Energy Infrastructure		OECD
The Role of Pension Funds in Financing Green Growth Initiatives		OECD
Mapping Channels to Mobilise Institutional Investment in Sustainable Energy		OECD
Investing in Climate, Investing in Growth		OECD
Adapting Transport to Climate Change and Extreme Weather Implications for Infrastructure Owners and Network Managers		OECD
OECD Council Recommendation on Assessment of Projects with Significant Impact on the Environment [C(79)116]	Recognised by OECD countries	
Incorporating Environmental, Social And Governance (ESG) Factors into Fixed Income Investment		WBG

Table 3. Project-related tools and instruments

Tools, standards and instruments that help develop infrastructure as an asset class	Status	
B. Project-related tools and instruments	**Internationally recognised tools**	**Institutional tools**
I. Planning and Prioritisation		
WBG Infrastructure Prioritisation Framework (IPF)	Recognised by G20 FM&CBG	
OECD Principles for the Public Governance of Public-Private Partnerships	Recognised by OECD Countries	
II. Institutional capacity for project development		
Multi-lateral Development Banks APMG PPP Certification Program		MDBs
WBG Country PPP Readiness Diagnostic (CRD)		WBG
III. Project preparation		
WBG PPP Screening Tool		WBG
WBG/IMF PPP Fiscal Risk Assessment Model (PFRAM)		WBG/IMF
WBG Project Readiness Assessment		WBG
WBG Policy Guidelines for Managing Unsolicited Proposals		WBG
OECD Recommendation on Public Procurement	Recognised by OECD countries	
OECD Recommendation on Fighting Bid Rigging in Public Procurement	Recognised by OECD countries	
Sustainable Infrastructure Foundation SOURCE	Recognised by G20 IWG	MDBs
UNECE International Specialist Centers	Recognised by UNECE countries	UNECE
UNECE Standard On Zero Tolerance to Corruption	Recognised by UNECE countries	UNECE
UNCITRAL Legislative Guide on Privately Financed Infrastructure Projects	Recognised by United Nation countries	UN
IV. Transaction support and contract management		
WBG Framework for Disclosure in PPP Projects	Recognised by G20 FM&CBG	
WBG Guidance on PPP Contractual Provisions	Recognised by G20 FM&CBG	
GI Hub Annotated Public-private Partnership Risk Allocation Matrices	Recognised by G20 FM&CBG	
The GI Hub PPP Contract Management Tool		GI Hub

Table 4. Infrastructure-related data

Tools, standards and instruments that help develop infrastructure as an asset class	Status	
C. Infrastructure-related data	**Internationally recognised tools**	**Institutional tools**
Infrastructure Data Initiative	Recognised by G20 FM&CBG	
OECD Report Addressing Data Gaps in Long-term Investing: An Agenda for Research	Recognised by G20 FM&CBG	
EDHEC Infra database		Private sector
GI Hub Infrastructure Outlook		GI Hub
Global Infrastructure Project Pipeline		GI Hub
GI Hub and EDHEC survey of Investor Perceptions of Infrastructure, 2017		GI Hub
Moody's risk performance studies		Private sector
MSCI-IPD		Private sector
World Bank PPI Database Project level data on SOE or Public Investments in Infrastructure for 2017 (under development)		WBG
OECD reports and data on Official Development Finance (ODF) for Infrastructure in Developing Countries		
World Bank, AsDB, IDB and EIB database on public spending in infrastructure (under development)		MDBs
Morningstar Emerging Markets Bond Infrastructure Index (under development)		Private sector
GEMs		WBG
Sustainable Infrastructure Foundation SOURCE	Recognised by G20 IWG	MDBs

A. Policy related tools and instruments (Table 2)

I. Framework

The G20/OECD Report on G20 Investment Strategies, (Volume I and Volume II) initiated by the G20 Turkish presidency, prepared by the OECD together with other international organisations, and with special contributions from Indonesia and Mexico, contains a compilation and comparative analysis of a huge amount of information on investment strategies in G20 countries, at both geographical and sectoral levels. More than 300 measures have been undertaken or planned. They act as facilitators or safeguards of the process elaborated by respective investment strategies and relate to three major areas: the investment ecosystem, infrastructure, and SMEs. The information collected also identifies effective approaches implemented in G20 countries, existing trends, and indicates avenues for further progress.

The G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment reaffirm the crucial importance for stakeholders to work coherently to bridge the existing global demand-supply gap of infrastructure investment. Promoting quality infrastructure investment will enhance strong, sustainable and balanced growth and improve resilience in society, as well as contribute to the global efforts for the SDGs. The Principles consist of five key elements covering governance, economic impact, social and environmental impacts, alignment with economic development, and the need to enhance effective resource mobilisation.

Leading Practices on Promoting and Prioritising Quality Investment: The purpose of the Leading Practices is to assist governments to put in place the conditions and frameworks necessary to encourage greater private sector involvement in infrastructure delivery, where private sector involvement can contribute to achieving the highest value for money for taxpayers. The Practices provide guidance to governments on ways to identify, prioritise, plan and deliver infrastructure projects. The Practices take as their premise that governments first put in place preconditions for an attractive market for investment in infrastructure by the private sector.

The Policy Framework for Investment: The PFI is a comprehensive and systematic approach for improving investment conditions. It provides a comprehensive checklist of key policy issues for consideration by any government interested in creating an enabling environment for all types of investment and in enhancing the development benefits of investment to society. It looks at 12 different policy areas affecting investment, including infrastructure investments. Building on previously-developed OECD instruments, such as the OECD Principles for Private Sector Participation in Infrastructure, among others, its "Investment in Infrastructure" chapter provides governments with policy guidance in relation to 10 policy issues: 1) assessing infrastructure needs and strengthening infrastructure planning; 2) prioritising projects and deciding on delivery options; 3) involving the private sector; 4) ensuring a credible institutional and regulatory environment; 5) fostering competition and a level-playing field in infrastructure markets; 6) promoting inclusiveness and responsible business conduct; 7) stimulating green infrastructure; 8) building public sector capacity; 9) developing regional infrastructure projects; and 10) financing for infrastructure.

The OECD Principles for Private Sector Participation in Infrastructure: Developed in 2007, the Principles aim to help governments work with private sector partners to finance and bring to fruition projects in areas of vital economic importance, such as transport, water and power supply and telecommunications. The Principles are intended as a first step guidance to public authorities contemplating the involvement of private enterprises as one, among several, options to improve the provision of infrastructure services. It offers a coherent catalogue of policy directions to be assessed as part of their development strategies in light of their own national circumstances and needs. The Principles do not aim at detailed prescription or technical advice on implementation of specific aspects of infrastructure investment, contract formulation or regulation. The Principles cover five important sets of challenges for national authorities: 1) Deciding on public or private provision of infrastructure services; 2) Enhancing the enabling institutional environment; 3) Goals, strategies and capacities at all levels; 4) Making the public-private co-operation work; and 5) Encouraging responsible business conduct.

Quantifying the Socio-economic Benefits of Transport: This report sets out several recent advances, and suggests the most promising approaches, to the quantification and valuation of some of the wider economic benefits that flow from transport-related development. Economic appraisal can offer decision-makers important insights into the expected socio-economic impacts of transport projects. The sophistication of modern supply chains and the growing prominence of the services sector have increased the interest of decision-makers in economic benefits beyond those traditionally captured in transport appraisal.

Strategic Infrastructure Planning: International Best Practice: This report reviews experiences with strategic infrastructure planning with a view to identifying international best practices. Governments play a critical role in providing the framework for investment in the transport, energy and water infrastructure on which economies depend. Long asset lives and large sunk costs make such investments particularly subject to risk and uncertainty. A long-term strategic plan that integrates specific projects reduces such risks by setting out a stable set of the priorities for future investment. This report is the product of a roundtable organised by the International Transport Forum at the OECD and the UK National Infrastructure Commission.

Port Investment and Container Shipping Markets: Large-scale port projects have irreversible effects on land use and multiple impacts on the local economy and local community. They affect the way that the regional and national economy operates as a whole, with major impacts on regional transport systems. Port planners make better decisions when these broad impacts are examined as part of the development of a national freight transport and logistics strategy. Private investment in port terminals is also facilitated by the certainty engendered by development of a national freight transport and logistics strategy. This report examines the issues that need to be considered before the decision to proceed to costly expansions with long-life spans and a structural influence on the local and national economy.

II. Financing

The G20/OECD High-level Principles of Long-term Investment Financing by Institutional Investors are designed to assist OECD, G20 and any other interested countries to facilitate and promote long-term investment by institutional investors, particularly among those institutions, such as pension funds, insurers and sovereign wealth funds that typically have long duration liabilities and consequently can consider investments over a long period, provided these are prudent and capable of producing a reasonable risk-adjusted return. These Principles aim to help policy makers design a policy and regulatory framework which encourages institutional investors to act in line with their investment horizon and risk-return objectives, enhancing their capacity to provide a stable source of capital for the economy and facilitating the flow of capital into long-term investments. The Principles address regulatory and institutional impediments to long-term investment by institutional investors and aim to avoid interventions that may distort the proper functioning of markets. The principles are intended to be consistent with existing regulatory standards for institutional investors, such as those addressing the financial regulation of investment and solvency.

The Effective Approaches to Support Implementation of the G20/OECD High-level Principles on Long- term Investing Financing by Institutional Investors are intended as examples to assist regulators, supervisors, policy makers, institutional investors and other relevant stakeholders in facilitating the provision of financing to long-term investments, while taking account of the requirements of prudence, other responsibilities towards members, beneficiaries, investors and policyholders, and government financing constraints. The effective approaches also take into account different jurisdictional circumstances and are of relevance to different types of institutional investors, including collective investment schemes, insurance companies, pension funds, and sovereign wealth funds, institutions that might be expected to have an interest in long-term investment projects. It should be noted, however, that for these purposes there is no common definition of long-term investment to be applied in all circumstances.

The report identifies **common effective approaches** where regulatory, supervisory and industry based measures and practices that have been widely endorsed or adopted in a number of jurisdictions and are considered to effectively implement key aspects of the Principle. They are taken in most cases from the members' survey or from existing measures agreed at international level, such as those developed by international standard setting bodies. Additional measures identified as **innovative** or **emerging** effective approaches are also included. These are regulatory, supervisory, or industry-based measures and practices that, while not in widespread use, in some cases being limited to only a few jurisdictions, are nonetheless deemed worthy of further consideration or interest as alternative ways of effectively implementing the principle.

The G20/OECD Checklist on Long-term Financing Strategies and Institutional Investors consists of a list of questions and issues that represent an effort to develop an evaluation tool to help countries who wish to self-assess their long-term investment (LTI) strategy and policy framework, including against the key elements and capacities identified and presented in the *G20/OECD High Level Principles of Long-Term Investment Financing by Institutional Investors*. Periodic self-assessment exercises are encouraged as an effective tool for countries to review, monitor and improve the quality of LTI strategies. The list of questions covers various aspects of a country's long-term investment strategy, ranging from general preconditions, regulatory and governance structures and project planning and coordination.

The WBG/OECD Project Checklist for PPPs identifies key requirements and includes an initial framework for successful PPP projects emphasizing the importance of politics, economics and execution. It has been prepared from the point of view of public policy makers and decision-makers in countries at various levels of development and capacities for the purpose of a high level assessment of a PPP project. It seeks to provide public policy makers and managers with a tool that can help them ensure that the key requirements in projects are fulfilled. The checklist includes project/ transaction specific questions as well as questions on the overarching environment which provides context to the project and covers phases of a PPP project from concept to completion of contract term.

An updated Checklist on Long-term Investment Strategies and Institutional Investors focuses on issues related to the identification of long-term investment needs. Given the constraints on government budgets and the considerable need for long-term investment now and in the future, it is assumed that governments will need to partner with the private sector to meet some of these needs. Hence, the section also raises questions as to whether there is sufficient interest and adequate capacity in the domestic market to provide financing for these needs.

The OECD report Investment Governance and the Integration of ESG Factors provides a stocktake of investor practices and adoption of Environmental, Social, and Governance in their investment processes. The report concludes that regulatory frameworks for investment governance that are built on risk-based controls and prudential standards do not usually refer explicitly to ESG issues (although this is changing in a number of jurisdictions). Regulatory frameworks for the most part do not prevent ESG integration, and other legislation or voluntary codes may encourage institutional investors to take ESG factors into account in their investment governance. However, institutional investors may lack clarity as to how ESG integration fits with their legal, regulatory and other obligations. This research is important to formulate future work on ESG and how governments take into account how investors consider ESG when evaluating infrastructure projects.

The OECD developed a Taxonomy of Infrastructure Financing Instruments and Incentives, which maps out the investment options available to private investors, identify financing channels through which investors may invest in infrastructure projects and assets. The coverage of instruments is comprehensive in nature, spanning all forms of debt and equity and risk mitigation tools deployed by governments and agents. While the taxonomy is meant to capture all forms of private infrastructure finance techniques, a focus of this work is to identify new and innovative financing instruments and risk mitigation techniques used to finance infrastructure assets. This tool is useful to governments in order to self-assess the availability of financing instruments and incentives within their domestic markets.

The G20/OECD Guidance Note on Diversification of Financial Instruments for Infrastructure and SMEs, endorsed by the G20 during the Chinese presidency, provides a set of selected voluntary policy recommendations that seek to assist governments in tackling key challenges linked to mobilising private financing for infrastructure and SMEs, in particular from institutional investors and capital markets and diversifying financial instruments with special attention to equity financing. As challenges are country-specific, the recommendations are intended to serve as guidance to country authorities in their effort to cope with their specific circumstances, including targeting particular type of investors. They take into consideration existing international instruments and analysis. The recommendations are presented in a way to provide high-level recommendations to operationalise policies that foster investment in infrastructure and to help further develop infrastructure as an asset class.

The OECD is currently developing *Effective Approaches to Financial Instruments for Infrastructure Financing*, in support of the previously mentioned Guidance Note. Similar to effective approaches completed for the High-level Principles, this set of effective approaches is based on survey inputs from participating countries that have shared their experiences with developing financing instruments for infrastructure, which will include common effective approaches and innovative/emerging approaches.

Risk Mitigation and Allocation in Infrastructure in APEC Economies: Selected Good Practices describes the main types of risks in infrastructure and the tools available to policymakers and regulators to help effectively manage and allocate risks amongst the various stakeholders with the objective of facilitating the engagement of investors in infrastructure projects through the judicious use of risk mitigation instruments and techniques. This tool includes a table with detailed descriptions of risks that infrastructure projects may face over the project lifecycle, and based on survey results, presents potential solutions to mitigate risks that investors face.

Diversifying Financing Sources and Fostering Private Sector Involvement in Infrastructure Investment in APEC Economies: The analysis of diversified instruments is essential to provide the foundation for the identification of effective financing approaches, instruments, and vehicles that could broaden the financing options available for infrastructure projects and increase as well as diversify the investor base. This also has the potential to lower the cost of funding and increase the availability of financing in infrastructure sectors or regions where financing gaps might exist. The formation of local capital markets, including in local currency denominated debt and equity, is an important step in securing long- term financing for infrastructure projects and can increase the options available for governments. By using 'blended finance' - the strategic use of public finance and developing financing to mobilize further additional private investment - governments can de-risk and mobilize private investment in infrastructure

The report WBG/IMF/OECD Capital Market Instruments to Mobilise Institutional Investors to Infrastructure and SME Financing in Emerging Market Countries seeks to identify key capital markets instruments that can help mobilize institutional investors to infrastructure and small and medium enterprises (SME) financing in emerging market economies (EMEs). The focus of this report has been on fixed income instruments that could be help mobilize domestic institutional investors in EMEs. For many EMEs the role that capital markets can have in bridging the financing gap in strategic sectors is determined by their domestic institutional investor base, given its size and importance vis-à-vis other investors. In this context, fixed income instruments are likely to be a better fit for the appetite of a broader range of institutional investors in EMEs as they have the potential to deliver long cash flows with attractive yields but with less volatility than equity investments.

The IMF/WBG Note on Policies to integrate Islamic finance into Global Finance presents policy issues related to Islamic finance for consideration by the G20 members. It provides policy recommendations at the national and international levels to better integrate Islamic finance into global finance. Islamic finance emphasises financing real economic transactions through trade financing, leasing, and asset- backed and risk-sharing finance. This industry has grown rapidly over the past decade, outpacing conventional finance, fuelled by demographics and large savings accumulated by many oil-exporting countries that are seeking to invest in these instruments. It has also expanded in terms of its geographic coverage and diversity of services, encompassing banking, capital markets, insurance, trade finance, investment funds, equity markets and micro-finance.

The **WBG Note on Promoting the Use of Capital Markets for Infrastructure Financing - Lessons for Securities Markets Regulators in Emerging Market Economies** provides guidance to securities markets regulators in EMEs about key regulatory issues that could affect the issuance of debt instruments for infrastructure financing over which they have some control. The Note focuses on three areas (placement regime, disclosure obligations and control issues in financing structures) and whether and how their regulation could affect the use of two debt financing instruments in EMEs, project bonds and infrastructure debt funds. To this end, it has drawn from the experiences of a select number of countries in both advanced and emerging market economies to distill lessons that can be used by securities regulators in EMEs to tailor their regulatory frameworks so that they can support infrastructure financing. The choice of debt financing instruments stems from the fact that the most pressing need for EMEs is access to lower cost, longer term debt which the two instruments discussed herein are likely to deliver.

III. Governance

To help improve governance of infrastructure, the OECD developed a Framework for the Governance of Infrastructure, which was endorsed by the G20. The framework identifies key governance challenges and proposes policy options to address them. Strengthening public governance is an excellent means by which to encourage private investment. If the public sector is seen as a reliable partner and a competent manager of public policy, then investors are more likely to engage and make the long-term investment decisions that are required. Examples include promoting strategic planning across many divisions and layers of government, managing threats to integrity, ensuring good regulatory design, ensuring an integrative consultation process, and ensuring value-for-money and affordability.

The OECD Guidelines on Corporate Governance of State-Owned Enterprises give concrete advice to countries on how to manage more effectively their responsibilities as company owners, thus helping to make state-owned enterprises more competitive, efficient and transparent. The Principles provide an indispensable and globally recognised benchmark for assessing and improving corporate governance. The Principles have been adopted as one of the Financial Stability Board's key standards for sound financial systems, and have been used by the World Bank Group in more than 60 country reviews worldwide. They also serve as the basis for the guidelines on corporate governance of banks issued by the Basel Committee on Banking Supervision.

Many countries have sought the involvement of the private sector to upgrade and develop their water and sanitation infrastructure and improve the efficiency of water systems. However, high capital intensity, large initial outlays, long pay-back periods, immobility of assets and low rates of return generate high risks. These factors, when combined with poor initial information and a weak investment environment, constitute important constraints on private sector participation in water and sanitation infrastructure.

Recognising this, the OECD has developed practical guidance to help governments and other stakeholders to assess and manage the implications of involving private actors in the financing, development and management of water and sanitation infrastructure, in the Private Sector Participation in Water Infrastructure: OECD Checklist for Public Action. The International Transport Forum has developed guidance on the governance of ports and maritime infrastructure.

The OECD Anti-Bribery Convention establishes legally binding standards to criminalise bribery of foreign public officials in international business transactions and provides for a host of related measures that make this effective. It is the first and only international anti-corruption instrument focused on the 'supply side' of the bribery transaction.

The OECD High-Level Principles for Integrity, Transparency and Effective Control of Major Events and related Infrastructures build upon lessons learned from the cooperation between the Italian Anti-Corruption Authority (ANAC) and the OECD in the development of infrastructure related to Expo Milano 2015. The principles provide a general control template for institutional cooperation on the supervision of public contracting procedures and of their subsequent performance, in accordance with the highest possible standards and leading international best practices. They develop a model that can be applied to many other large infrastructure projects that face the same challenges of balancing the need for integrity in processes and tight deadlines.

The OECD Guidelines for Multinational Enterprises are a comprehensive international instrument on responsible business conduct (RBC). They provide recommendations to businesses in the areas of disclosure; human rights; employment and industrial relations; environment; combatting bribery, bribe solicitation and extortion; consumer interests; science and technology; competition; and taxation. The Guidelines include an expectation that businesses will undertake risk-based due diligence – a process through which businesses identify, prevent and mitigate their actual and potential negative impacts and account for how those impacts are addressed, including in their supply chain and business relationships. The OECD has also developed further guidance on due diligence. The Guidelines help meaningfully integrate environmental and social issues across all steps of the infrastructure project life-cycle for both governments and businesses involved in the financing and delivery of infrastructure.

The G20/OECD Principles of Corporate Governance represent a shared understanding with respect to corporate governance standards and practices in areas such as transparency, disclosure, accountability, board oversight, shareholder rights and the role of key stakeholders. They also provide recommendations for national policymakers on executive remuneration, the behaviour of institutional investors and how stock markets should function. The Principles clearly identify the key building blocks for a sound corporate governance framework and offer practical guidance for implementation at a national level. Importantly, their implementation will help build an environment of trust, transparency and accountability so that the financial sector can serve the needs of the real economy in terms of access to long term capital and investment."

Public Private Partnerships for Transport Infrastructure: Renegotiation and Economic Outcomes: Public-private partnerships (PPPs) are an important vehicle for private participation in infrastructure investment, delivery and management. Renegotiations are an integral part of the PPP process but their prevalence varies markedly in different parts of the world. Renegotiations can be usefully employed to adjust the PPP contract to unforeseeable events, beyond the control of contractual parties. There is also a danger, however, that they will be used to change the initial balance of costs and benefits in the contract. The purpose of this report was to provide an overview of the nature of PPP renegotiations in different regions of the world and at different times to help understand when PPP contract renegotiations are desirable and when they are not. In general it is concluded that when contracts are set up well, renegotiations should be few and far between.

WBG Benchmarking PPP Procurement: This report benchmarks government capabilities in 82 economies across four key areas: PPP preparation, PPP procurement, unsolicited proposals, and PPP contract management. Many economies have yet to adopt broadly-recognised good practices to prepare, procure, and manage PPPs. This report compares countries against these criteria so that governments can take actions to provide better PPP procurement.

InfraCompass: The GI Hub's InfraCompass is an online interactive platform, which contains data for 49 major economies in regard to their systems for infrastructure planning and delivery. The tool uses 38 key metrics to provide information on each country's governance arrangements; regulatory frameworks; permits, approvals and land acquisition processes; planning processes; and procurement practices, giving countries and development agencies the ability to prioritise the reforms that have the greatest impacts on infrastructure markets. In 2018, InfraCompass will be updated to include data from the 2018 edition of the WBG report on Procuring Infrastructure Public Private-Partnerships, and to include data from countries in the Compact with Africa Program.

The IMF Public Investment Management Assessment (PIMA) is a tool for helping IMF member countries strengthen the efficiency and effectiveness of public investment, with more than 30 assessments conducted to date. PIMAs are an integral part of the IMF's Infrastructure Policy Support Initiative (IPSI) that promotes the implementation of the 2015 Addis Ababa Action Agenda for financing sustainable development and the infrastructure-related Sustainable Development Goals (SDG). A PIMA helps countries evaluate the strength of their public investment management practices. The PIMA evaluates the design and effectiveness of 15 institutions that shape decision-making at three key stages of the public investment cycle: i) planning investment; ii) allocating investment to the right sectors; and iii) implementing investment. The PIMA provides a comprehensive diagnostic of the strengths and weaknesses of a country's public investment management system, allowing comparisons with similar groupings, and country-tailored recommendations.

IV. Development

The United Nations Sustainable Development Goals: On September 25th 2015, countries adopted a set of goals to end poverty, protect the planet and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years.

The OECD DAC Blended Finance Principles for Unlocking Commercial Finance for the SDGs are targeting at the policy-level and aim to ensure that blended finance is deployed in the most effective way to address the financing needs for sustainable development as set out in the Addis Ababa Action Agenda (AAAA), by mobilising additional commercial capital and enhancing impact. Whereas both concessional and/or non-concessional development finance can be part of blended structures, the use of concessional resources requires particular care, given its scarcity. Moreover, potential competitive distortions need to be minimized and complementary objectives, such as structural reforms, pursued. The principles aim to distil and promote best practice and develop guidance that will assist the development co-operation community in delivering development impact from emerging blended finance principles, including the need for a measurable and verifiable demonstration on impact, particularly in poverty reduction. The report Making Blended Finance work for the SDGs supports the Principles and sharpens their focus on the deployment of development and commercial finance on the objectives of development.

Partnering to Build a Better World: MDBs' Common Approaches to Supporting Infrastructure Development is a paper that presents a brief description of how MDBs work with their BMCs to identify, select, prepare and implement infrastructure projects and in particular, engage with the private sector in order to finance them. It then describes how PPFs function while providing some concrete examples of MDB collaboration. Finally, the paper outlines several actions that MDBs can take to further enhance their coordination and complementarity at the country level, and the overall effectiveness of the PPFs, and identifies several potential challenges in advancing with these actions.

The G20 approved the MDB Action Plan on Balance Sheet Optimisation at the 2015 November Antalya meeting. This is part of the wider global agenda on resource mobilization for supporting SDGs and infrastructure in particular. The Action Plan asks the MDBs to work with their respective shareholders to consider a series of measures that could increase lending through balance sheet optimisation; more effective and efficient use of their existing risk bearing capital to maximize the impact of their activities. Balance sheet optimization takes into account increased risk sharing to enable more effective capital usage or increased amounts of third party, private sector financing or investment. The Action Plan states that the optimisation is to be done without jeopardising the MDBs' AAA credit ratings, nor adversely impacting their ability to lend in cyclical downturns.

The Principles of MD Bs' Strategy for Crowding-in Private Sector Finance for Growth and sustainable Development foster effective approaches to maximize the mobilisation and catalysation of private sector resources to support countries with the implementation of the 2030 Development Agenda – including through financial and management resources and innovation. These interventions must, at the same time, be economically viable; market-based while fiscally and commercially sustainable; balanced from a risk-reward perspective; transparent; cost effective and implementable, ensuring at all times that such interventions meet our standards for development effectiveness, our social and environmental safeguards and are aligned with our commitment to climate smart investment. The adoption of these Principles is expected to complement the MDBs' high standards of delivery with an enhanced focus on crowding-in commercial finance as part of the billion to trillions commitment

The Joint MDB Statement for Crowding-in Private Finance builds on the previously approved *Principles for MDBs' Strategy Crowding-in Private Sector Finance for Growth and Sustainable Development*, and the 2016 Joint Declaration *of Aspirations on Actions to Support Infrastructure Investment*. The ambitions focus on the operationalisation of the Principles. The MDBs jointly committed to: 1) Work with client countries to help them strengthen their governance of sustainable infrastructure, including around planning, prioritizing, budgeting and disclosure. Efforts to support countries by means of project preparation facilities and capacity building will be further enhanced; 2) Review the range of credit enhancement products and expand where feasible; 3) Review and strengthen internal incentives for mobilization of private sector financing. MDBs will also work to align incentives so as not to crowd-out private sector financing where it would be appropriate; 4) Identify additional opportunities to work together and provide complementary advisory and financing products where appropriate; and 5) Pursue opportunities for standardisation, harmonisation, and standard-setting, where appropriate.

The MDBs' Joint Declaration of Aspirations on Actions to Support Infrastructure Investment is a tool developed to ensure that MDBs work together to scale up infrastructure investment and attract private sector investment. Working with the private sector can bring additional technical expertise to improve the quality of infrastructure projects. Subject to client demand, as well as respective approval criteria and institutional governance, MDBs commit within their respective institutional mandates to respond to the infrastructure needs of client countries.

Multilateral Development Banks – led by the International Finance Corporation - published a new joint platform, Global Toolbox, in January 2018 to promote private business opportunities in emerging markets. Grouped by region (Africa, Asia, Europe and LAC), it describes the many instruments available to support private investment across the globe from the Multilateral Development Banks. Each regional toolbox provides an interactive inventory of instruments with their hyperlinks and comprehensive overviews. The Toolbox was originally developed at the G20's request in connection with Compact with Africa; it has now been expanded to all regions. Instruments listed in the toolbox include local currency lending and mobilisation platforms, such as the Managed Co-lending Portfolio Program.

Practical solutions and models for addressing obstacles to institutional investment in infrastructure in developing countries WBG – a note that considers the existing types of institutional investors and their potential for filling the infrastructure financing gap; and the challenges of adjusting their asset allocations towards EMDEs. It also discusses examples of projects that involved institutional investors. The final section considers options for institutional investor involvement in EMDEs, making initial proposals for how to determine best model for a given country context.

V. Environment

Overcoming Barriers to International Investment in Clean Energy: The perceived potential of clean energy to support employment in the post-crisis recovery context has led several OECD and emerging economies to design green industrial policies aimed at protecting domestic manufacturers, notably through local-content requirements (LCRs). These typically require solar or wind developers to source a specific share of jobs, components or costs locally. Such requirements have been designed, or implemented, in the solar- and wind-energy sectors in at least 21 countries, including 16 OECD countries and emerging economies, mostly since 2009. Empirical evidence gathered in this report shows however that LCRs have actually hindered international investment across the solar PV and wind-energy value chains, by increasing the cost of inputs for downstream activities. This report also takes stock of other measures that can restrict international investment in solar PV and wind energy, such as trade remedies and technical barriers. This report provides policy makers with evidence-based analysis to guide their decisions in designing clean-energy support policies.

OECD Policy Guidance for Investment in Clean Energy Infrastructure: This publication provides governments with guidance on the policy options that are available to make the most of private investment opportunities in clean energy infrastructure, drawing on the expertise of climate and investment communities among others. It identifies key issues for policy makers to consider, including in investment policy, investment promotion and facilitation, competition policy, financial markets, and public governance. It also addresses cross-cutting issues, including regional co-operation and international trade for investment in clean energy infrastructure.

The OECD report on The Role of Pension Funds in Financing Green Growth Initiatives examines some of the initiatives that are under way around the world to assist and encourage pension funds to help finance green growth projects. It provides information on OECD's current work on engaging the private sector in financing green growth. Different financing mechanisms are outlined, and suggestions made as to what role governments in general, and pension fund regulatory and supervisory authorities in particular, can play in supporting pension funds investment in this sector. The paper concludes with the following policy recommendations: provide supportive environmental policy backdrop; create right investment vehicles and foster liquid markets; support investment in green infrastructure; remove investment barriers; provide education and guidance to investors; improve pension fund governance.

The OECD report Mapping Channels to Mobilise Institutional Investment in Sustainable Energy develops a framework that classifies investments according to different types of financing instruments and investment funds, and highlights risk-mitigants and transaction-enablers that intermediaries (such as public green investment banks and other public financial institutions) can use to mobilise institutionally held capital. This framework can also be used to identify where investments are or are not flowing, and focus attention on how governments can support the development of potentially promising investment channels and consider policy interventions that can make institutional investment in sustainable energy infrastructure more likely.

The OECD report, Investing in Climate, Investing in Growth, provides an overview in Chapter 7 of financing tools and instruments that could be utilised for low-carbon infrastructure, including mitigation and adaptation, energy efficiency, and renewable energy, amongst others. The report offers policy recommendations on how to mobilise investment for low-carbon infrastructure, including economy- wide policies, investment, trade, and finance.

Adapting Transport to Climate Change and Extreme Weather Implications for Infrastructure Owners and Network Managers: This report addresses the fundamental challenges that climate change poses to infrastructure owners, who face two major challenges. First, they must ensure continued asset performance under sometimes significantly modified climate conditions that may decrease the present value of their networks or increase maintenance and refurbishment costs. Second, they must build new assets in the context of changing and uncertain climate variables. This creates a risk of over- or under-specification of infrastructure design standards, potentially resulting in non-productive investments or network service degradation. This report investigates strategies that can help transport authorities contain network performance risks inherent in changing patterns of extreme weather.

OECD Council Recommendation on Assessment of Projects with Significant Impact on the Environment [C(79)116]: It encourages governments to reflect in national legal frameworks requirements for the use of environmental impact assessment (EIA) which applies to individual projects (facilities and infrastructure). This Council Act it is now being proposed for an updated. The update will encourage also the use of Strategic Environmental Assessment (SEA) which extends environmental considerations beyond the project level, to long-term development plans and programmes in sectors such as land use, energy, industry and transport. The EU now requires SEAs in all relevant sector plans and programmes. In the UNECE region (which includes many BRI-relevant countries) the same is required under the Espoo Convention.

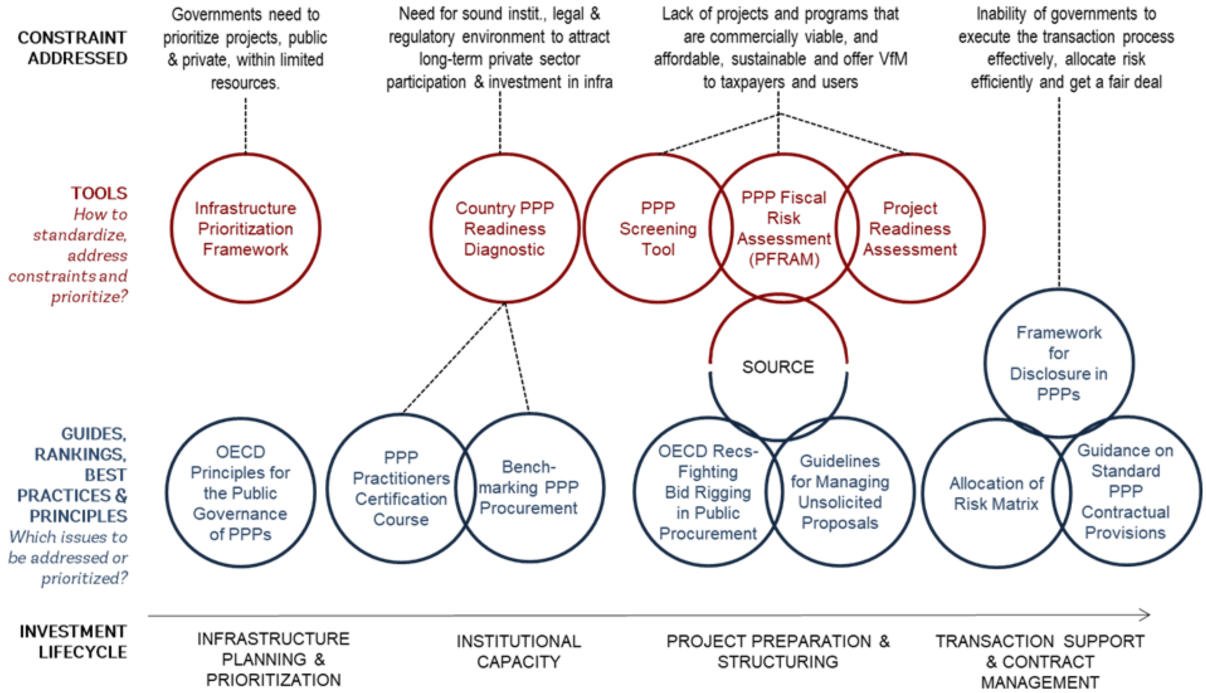
The WBG Publication on Incorporating Environmental, Social and Governance (ESG) Factors into Fixed Income Investment is the result of a partnership between the World Bank Group (WBG) and Government Pension Investment Fund (GPIF) of Japan. The aim is for the World Bank, IFC and GPIF to collaborate on initiatives that promote strategies for including environmental, social and governance (ESG) criteria in investment decisions across asset classes. Ultimately, the goal is to direct more capital towards sustainable investments and leverage the private sector to achieve the scale of investment needed to meet the Sustainable Development Goals. In fact, a growing body of research shows that Environmental, Social and Governance (ESG) factors are material credit risk for fixed income investors. The evidence suggests that incorporating ESG into fixed income investing should be part of the overall credit risk analysis and should contribute to more stable financial returns. It also dispels the myth that incorporating ESG means having to sacrifice financial returns. ESG investing is increasingly becoming part of the mainstream investment process for fixed income investors, as opposed to a specialist, segregated activity, often confined to green bonds.

Yet, the report argues that many investors find implementing ESG in practice a challenge, which can be exacerbated when it comes to their fixed income portfolios. There are still no standard definitions of ESG – with diverse views particularly in the 'social' area. Data – though improving and coming from increasingly varied sources – is still wanting particularly in emerging markets. In fixed income, there are additional issues such as how to pursue engagement with issuers (particularly sovereigns), the role ESG plays in credit ratings, the lack of choice of indices compared to the equity space, as well as a dearth of specific ESG-focused products. There are also challenges in the green bond markets with demand outstripping supply. Conceptual work on ESG and fixed income also needs to go beyond credit risk (such as the relationship of ESG issues with liquidity and other market risks).

B. Project-related tools and instruments (Table 3)

The tools, standards and best practices described below are organised following the traditional investment cycle that runs from infrastructure planning and prioritisation to transaction support and contract management (see figure 1). In addition to the tools, standards and guidelines listed below, a comprehensive compendium of all PPP matters from policy to implementation has been developed - the PPP Reference Guide (Third Edition).[2]

Figure 1: Tools, Guides, Rankings, Principles & Best Practices Mapped Along the Infrastructure Investment



I. Planning and prioritisation

WBG Infrastructure Prioritisation Framework (IPF): The World Bank Group developed this tool to help governments systematically prioritise infrastructure investments to achieve their development goals, taking into account capacity and public resource constraints.

The OECD Principles for the Public Governance of Public-Private Partnerships provide concrete guidance to policy makers on how to make sure that Public-Private Partnerships (PPP) represent value-for-money for the public sector. It consists of 12 core principles focused around three objectives: establish a clear, predictable and legitimate institutional framework supported by competent and well-resourced authorities; ground the selection of Public-Private Partnerships in value-for-money; and use the budgetary process transparently to minimise fiscal risks and ensure the integrity of the procurement process.

[2] The Guide is a collaboration of ADB, EBRD, GIH, IaDB, IsDB, OECD, PPIAF, UNECE, UN ESCAP and the World Bank Group.

II. Institutional capacity for project development

Multilateral Development Bank APMG PPP Certification Program: Sponsored by ADB, EBRD, IaDB, IsDB, Fomin, PPIAF and the World Bank Group, this certification program aims to enhance PPP performance globally. Individuals awarded the Certified PPP Professional (CP3P) credential demonstrate to peers that their abilities align with global PPP good practices.

WBG Country Readiness Diagnostic (CRD): This World Bank developed tool assesses whether a country is ready to implement PPPs by first looking at its PPP enabling environment and then determining areas that require change or improvement in view of global good practices.

III. Project preparation

PPP Screening Tool: This spreadsheet-based tool assists PPP practitioners in preliminary screening of potential PPP projects using a combination of qualitative and quantitative inputs. The tool can be customised for country-specific requirements. It enables practitioners to identify deficiencies, roadblocks, and areas for improvement in the next stage of development of shortlisted projects. It can also be used as a decision-making tool or a checklist at any stage of project development prior to initiation of procurement to ensure that a project is sound.

PPP Fiscal Risk Assessment Model (PFRAM): PFRAM, developed by the World Bank and IMF, is an MS-Excel based tool that quantifies macro-fiscal implications and potential fiscal risks of PPP projects. The assessment entails gathering specific project information and determining a government's role at key stages in the project cycle. It is mostly designed to help PPP units make informed fiscal decisions on PPP projects based on impacts and risks.

WBG Project Readiness Assessment: This tool, developed by the World Bank, assesses the quality of project preparation, identifies weaknesses, and recommends actions for client governments to strengthen their projects. The tool is designed to help governments make informed decisions about projects and strengthen preparation prior to procurement. The assessment can be done in two stages: Stage 1, an early stage, pre-feasibility assessment; and Stage 2, a more detailed feasibility-stage assessment for projects close to procurement.

Policy Guidelines for Managing Unsolicited Proposals: The Guidelines, an initiative of PPIAF, provide dedicated recommendations on how to address the challenges related to unsolicited proposals in infrastructure projects.

In 2015, the OECD Council adopted a Recommendation on Public Procurement that is the overarching OECD guiding principle on public procurement that promotes the strategic and holistic use of public procurement. Since public procurement frameworks apply to most infrastructure projects it represents a crucial variable in their effective development. It is an international reference for modernising procurement systems and can be applied across all levels of government and state owned enterprises. It addresses the entire procurement cycle while integrating public procurement with other elements of strategic governance such as budgeting, financial management and additional forms of services delivery.

In 2012, the OECD Council adopted a Recommendation on Fighting Bid Rigging in Public Procurement that calls for governments to assess their public procurement laws and practices at all levels of government in order to promote more effective procurement and reduce the risk of bid rigging in public tenders. The

Recommendation is a step forward in the fight against collusion in public procurement that the OECD has been leading for a long time especially through the 2009 *Guidelines for Fighting bid rigging in Public Procurement* and the work related to its dissemination worldwide. In 2016, the OECD issued a report to show how competition and procurement authorities have been implementing the 2012 Recommendation, enhancing the usefulness of this tool.

Sustainable Infrastructure Foundation SOURCE***:*** SOURCE is a global online software platform designed and funded by MDBs, with contributions from a number of private sector infrastructure players. It was launched globally in 2016. It acts as: i) a project preparation platform that provides a standardized protocol for project definition, preparation, and development, up to the operation and management stage; ii) an engagement platform, that connects all project stakeholders (implementing agencies and other government agencies, MDBs, advisors, and at a later stage infrastructure investors, contractors and lenders) in one place; and iii) a global knowledge platform that provides and promotes project preparation and sustainability best practices. SOURCE uses sector-specific sets of questions that are categorized by stages (from project definition to operation and maintenance stage) and by field of expertise (governance, technical, economic, environmental and social and legal), to guide institutional and public project developers in the delivery of quality infrastructure. Templates are currently available for 38 types of infrastructure in nine languages, which were developed in liaison with experts from the public and private sectors.

UNECE International Specialist Centers: the United Nations Economic Commission for Europe (UNECE) PPP Specialist Centres identify excellence, prepare the best practice guides and help governments building their capabilities to develop a successful pipeline of projects. The purpose is to focus on some of the most important sectors: those that are key in addressing some of pressing problems, such as greening our economies, use of technologies to fight climate change, improving access to basic public services, alleviation of poverty; and those that do not benefits from previous toolkits or best practice guides. UNECE specialist centres may also focus on specific sectors that constitute the core challenges countries face in taking PPPs forward, such as the legislation, financing, and institutional requirements for undertaking PPP. The UNECE specialist centres will conduct research within the sector; develop and disseminate PPP best practice in the sector; develop sector specific capability development strategies for governments; provide specialised training in PPP.

UNECE Standard on Zero Tolerance to Corruption: The UNECE developed the standard on zero tolerance to corruption in Public-Private Partnerships to help to catalyze countries' efforts to strengthen transparency, accountability and effective governance of investment in public infrastructure and service delivery. The standard adopted at the intergovernmental session of UNECE's Working Party on PPPs on 22 November 2017 aims to improve governance, reduce risks and costs and strengthen trust and accountability in PPP procurement. The standard will help to save money and foster sustainable partnerships between governments and the private sector. The standard includes principles and recommendations on PPP procurement that can be incorporated within national legal and administrative systems. To facilitate compliance with the standard, governments may consider making its conditions binding and subject to judicial or administrative review for all public and private actors involved, imposing penalties in the case of infringement.

UNCITRAL Legislative Guide on Privately Financed Infrastructure Projects: The purpose of the UNCITRAL Guide on Privately Financed Infrastructure Projects is to assist in the establishment of a legal framework favourable to private investment in public infrastructure. The advice provided in the Guide aims at achieving a balance between the desire to facilitate and encourage private participation in infrastructure projects, on the one hand, and various public interest concerns of the host country, on the other.

IV. Transaction support and contract management

WBG Framework for Disclosure in PPP Projects: The Framework provides a systematic structure for proactively disclosing information pertaining to PPP Projects. The Framework is a collaboration of the World Bank Group, the Construction Sector Transparency Initiative, PPIAF, and OECD, and was endorsed by the G-20.

WBG Guidance on PPP Contractual Provisions: The Guidance, a collaboration of PPIAF and the World Bank Group, assists contracting authorities, particularly in emerging PPP markets, to obtain a better understanding of selected provisions typically included in a PPP agreement. It sets out several contractual provisions typically encountered in PPP agreements. At the same time, it details key considerations for public contracting authorities to bear in mind when developing contracts for specific PPP projects.

The Global Infrastructure Hub report Annotated Public-private Partnership Risk Allocation Matrices develops a set of 12 sample annotated risk allocation matrices for public-private partnership (PPP) transactions, in a variety of sectors including transport, energy, and water and sanitation. In each sample risk matrix, there is a detailed listing of project risks, along with a discussion of risk allocation, mitigation measures and government support arrangements. Each matrix is accompanied by annotations, explaining the rationale for allocations, mitigative measures, any government support arrangements, and describing alternative measures for countries with differing levels of PPP market maturity.

The GI Hub PPP Contract Management Tool will identify and disseminate guidance on leading practices in the relatively neglected area of the administration of PPP contracts after financial close, i.e. during the construction and operational phases. The tool is based on an analysis of a representative sample of more than 200 infrastructure projects that reached financial close during the last 10 years globally, so as to understand major issues arising post procurement and how they were handled. The initial findings of this research have been discussed in a number of regional workshops, and the tool will become available in June 2018.

C. Infrastructure related data (Table 4)

For private investors in infrastructure the lack of good risk and asset performance data has emerged as a barrier to further investment in the asset class.[32] Potential private investors in infrastructure have underscored the need for better data so they can properly prepare and run their asset allocation models and assess potential investments. Likewise, better data can help governments assess costs and benefits of potential infrastructure investments.

This section provides an overview of the data initiatives developed or initiated since 2014, while Annex I, provides a table of all ongoing databases for infrastructure financing.

1. Recently a new project, the **Infrastructure Data Initiative**, was launched to address the issue of establishing infrastructure as an asset class through data collection and improving the availability of infrastructure investment data. This joint initiative by the European Investment Bank, Global Infrastructure Hub, Long-term Infrastructure Investors Association, OECD and the Club of Long Term Investors aims to create a centralised repository on historical long-term data on infrastructure at an asset level, with the eventual goal of creating performance benchmarks across financial, economic impact and ESG dimensions.

[3] See: Lauridsen, Morten and Wang, Ben. Infrastructure & Public Private Partnerships Blog “The Art of Laying the Bricks” May 3, 2017

2. Together, the OECD reports Addressing Data Gaps in Long-term Investment: An Agenda for Research and Breaking Silos: Actions to Develop Infrastructure as an Asset Class and Address the Information Gap present actions that can be taken by governments in order to facilitate investment in infrastructure by promoting the sharing and availability of data on infrastructure investment. The reports provide recommendations to countries to help identify a research agenda for addressing the main gaps in information for understanding the drivers and impediments of long-term investment and related financing. Recommendations include promoting standardisation of some infrastructure investment and procurement activities, mapping infrastructure investment risks and financing patterns, and promoting international infrastructure data collection, including the adoption of a preferred template for the collection of data. This work accords with some of the recommendations made in the context of the *G20 Data Gaps Initiative and follows up on G20 work on long-term investment finance carried out by the OECD together with other international organizations (BIS, FSB, IMF and World Bank) and countries (e.g., Canada and Italy)*.[4]

3. **EDHEC Infra database**: The EDHECinfra database is a collection of cash flow, investment and balance sheet data collected from infrastructure investors and creditors. To date, the database covers more than 500 individual infrastructure assets over 10 different countries and a period of 15-20 years, making it the most comprehensive database of infrastructure cash flows available for research. In June 2017, EDHEC Risk Institute launched 192 "EDHECinfra Private Equity" and "EDHECinfra Private Debt" indices.

4. Infrastructure Outlook: The GI Hub's Infrastructure Outlook is an online interactive tool showing infrastructure investment needs in 50 countries, with granular data on the size of the 'infrastructure gap', on a country-by-country, sector-by-sector basis. It also provides data on the spending necessary to achieve the infrastructure-related aspects of the Sustainable Development Goals. Infrastructure Outlook is designed to assist governments and the private sector in prioritising and planning future spending. In 2018, Infrastructure Outlook will be updated to include data from countries in the Compact with Africa Program.

5. Global Infrastructure Project Pipeline: The GI Hub's Global Infrastructure Project Pipeline is a free and open global digital platform, connecting infrastructure projects and private investors. In 2014, when the G20 Leaders established the GI Hub, it was directed to create "a comprehensive, open source project pipeline database, connected to national and multilateral development bank databases, to help match potential investors with projects." In response, the GI Hub launched the Global Infrastructure Project Pipeline in late 2015, following extensive consultations with private sector investors as to the information that the database should contain. The resulting product presents information directly provided by national and local procuring authorities, updated as projects progress through eight designated stages of the procurement process. The Global Infrastructure Project Pipeline gives procuring authorities the ability to 'showcase' proposed projects to a global audience of prospective investors. It is designed to integrate with national, sub-national and Multilateral Development Bank project databases, and it can accommodate both domestic and multi-jurisdictional 'connectivity' projects.[5]

[4] See: FSB, IMF, OECD, WBG (September 2014), "Development of quantitative indicators of long-term investment finance, Report to the G20". For an example of country-level analysis of data gaps at the macro level, see Giordano C., M. Marinucci, A. Silvestrini (2016), "Investment and investment financing in Italy: some evidence at the macro level", Banca d'Italia Occasional Paper, No. 307.

[5] Two examples of national project pipelines are Mexico's Proyectos Mexico Platform and the UK's National Infrastructure and Construction Pipeline

6. GI Hub and EDHEC survey of Investor Perceptions of Infrastructure, 2017: The GI Hub and EDHEC Infrastructure Institute-Singapore (EDHECinfra) are jointly responsible for the Investor Perceptions of Infrastructure, 2017 survey, which reveals investor preferences and trends in infrastructure markets. More than 185 infrastructure investors and advisors took part in the survey, representing USD 7 trillion in assets, which accounts for 10% of global assets under management. The study is the largest of its kind involving senior executives, investment directors and advisers in the infrastructure sector.

7. **Moody's risk performance studies**: Moody's is undertaking a project reporting on the historical performance of rated infrastructure project debts, covering 5,308 transactions from the periods 1983 to 2015. The goal is to report on default and recovery experience in such debts compared to straight non-financial corporate bond issuance, providing a better basis to analyse the unique risk profiles of infrastructure project finance debt.

8. **MSCI-IPD**: MSCI's launched several initiatives with the aim to create a well-diversified global private equity infrastructure index. Two indexes have been launched:

    - **The MSCI Australia Unlisted Infrastructure Index:**[6] a fund index that intends to track the return performance of unlisted infrastructure investment funds domiciled within Australia - the index includes 23 funds. Transport represents 59 percent of the index's sector exposure followed by Power transmission and generation (~20 percent), Water (10 percent) and Renewable Energy, Public Facilities, and Communication (<3 percent).

    - **IPD Global Infrastructure Direct Asset Index:**[7] an index that measures the equity performance of infrastructure assets globally. The index includes 123 investments for a total equity valuation of around USD 31 billion. As of December 2016, the index's investments are located in Australia (47%), Europe (41%), North America (9%), and New Zealand (3%). The sector exposure of the index includes Transport excluding airports (27%), Airports (21%), Water (19%), Power Transmission (1%), Renewable Energy, and Power Generation, Public Facilities and Communication at respectively less than 1% %.

9. **PPI Database Project level data on SOE or Public Investments in Infrastructure for 2017 (under development):** The PPI Database is collecting project level data for projects sponsored by SOEs/public in 2017 in low and middle income countries, which will then be collated with private investment data from the core PPI Database to derive an estimate of the full infrastructure spend in 2017 and what proportion is contributed by private/SOE/public.

10. **OECD reports and data on Official Development Finance (ODF) for Infrastructure in Developing Countries:**

    - Annual reports such as Official Development Finance for Infrastructure: With a Special Focus on Multilateral Development Banks, Official Development Finance for Infrastructure: Support by Multilateral and Bilateral Development Partners, Official Support for Private Sector Participation in Developing Country Infrastructure take stock of ODF for infrastructure by bilateral and multilateral development partners, describing total amounts and distribution of sectors, regions, income-levels, recipient countries and so on. Focus is also given to

[6] https://support.msci.com/documents/1296102/8ec13e3e-5db3-4bb5-852f-39502974c6eb

[7] https://support.msci.com/documents/1296102/0e192d3c-bbfb-4e3a-958f-8ba934d2d848

mobilisation of private finance for infrastructure using private sector instruments that are mostly provided by Development Finance Institutions. Furthermore, some estimates are included for development partners such as China and India.

- Database on ODF for infrastructure provides two types of statistics on financing by 60 bilateral and multilateral development partners towards infrastructure of developing countries. Official Development Finance (ODF) for infrastructure at a glance shows graphs for donors, sectors, recipient countries, etc. for infrastructure ODF; and http://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/infrastructure-finance.htm allows access to on-line database for: ODF for infrastructure by sector; ODF for water supply & sanitation by sub-sector; ODF for transport & storage by sub-sector; ODF for communication by sub-sector; and ODF for energy by subsector.

11. **World Bank, AsDB, IDB and EIB database on public spending infrastructure (under development)**: database on public spending on infrastructure expected to be launched at the 2018 Global Infrastructure Forum – with a call to help donors improve it.

12. **Morningstar Emerging Markets Bond Infrastructure Index** is designed to provide global, multicurrency, diversified exposure to corporate and quasi-sovereign debt issuers identified as infrastructure-related companies and security issuers domiciled in Emerging Market countries. This index is a sub-index of the Morningstar Global Bond Infrastructure Index.

13. GEMs**:** The Global Emerging Markets ("GEMs") Risk Database Consortium is the world's largest default and loss database for the emerging markets business of International Financial Institutions ("IFIs"). Its primary purpose is to provide pooled data on credit default rates from customers funded by the contributing IFIs, their rating migration and the recovery rates of defaulted projects.

14. Sustainable Infrastructure Foundation SOURCE**:** SOURCE also acts as an infrastructure data collector and database, by aggregating and analysing the structured data published on its platform by project developers (infrastructure data, financial data, environmental and social data, etc.), in order to create statistics and financial benchmarks. SOURCE is also designed as a data provider for financial institutions willing to invest through equity or loans in infrastructure projects and thus contribute to G20 goal of developing infrastructure as an asset class.

Potential areas for further work to help develop infrastructure as an asset class[8]

Further work and deeper analysis of the various instruments and tools included in this stocktake are required to accurately identify all the "gaps" which would need to be addressed in future work by G20 and other fora. The Roadmap to infrastructure as an asset class of the G20 Argentina Presidency already identifies some of the priority issues that should be considered by the G20. More generally, a high- level preliminary overview of the stocktake allows a (non-exhaustive) identification of potential areas, centered on asset class and bankable projects, for further consideration:

a) Implementation/review/improvement of existing instruments

Regarding types of instruments, a lot of areas are already covered by numerous instruments (especially on policy environment) but there is still significant work to be considered, for the category "**international** instruments" (as recognised by governments at international level), including on the following issues: regulation, financing, procurement, ESG , tax, development, new technologies, competition, employment, anticorruption, governance,

- develop practical tools (effective approaches, good practices, checklist etc.) to facilitate implementation of these international instruments (including on financing, governance, blended finance, etc.)
- review current relevance of previous instruments
- assess their implementation
- provide technical assistance and promote capacity building
- promote the endorsement of all G20 members to relevant non G20 instruments
- consolidate instruments which have similar features in a global strategic framework

A major policy development for **institutional** tools (developed by institutions without (yet) official country recognition) would include:

- consideration by governments for endorsement/recognition, with possible modifications, for transformation into international instruments
- implementation by a wide range of countries with technical assistance support

b) Development in new specific areas

At this stage, and without being exhaustive, the following areas call for further work (some of them have already been identified in previous G20 instruments):

- ***Standardisation*** of and ***benchmarks*** for (with relevant flexibility):
  - contracts (while some work has been developed already) , documentation, processes (including on PPP procurement)
  - approaches to business case development; business models
  - environmental, social and governance practices for projects and capital market instruments
  - infrastructure investment subject to asset-based financing principles (for relevant economies)

[8] This section includes a non-exhaustive background list of possible areas for further work as identified by some IOs and and some member countries.

- consultation processes with civil society and impacted communities
- contract management and oversight
- cash flow reporting and best practice for infrastructure investment to promote transparency and the development of adequate databases allowing a better understanding of the behaviour of financial instruments used to finance infrastructure projects
- the use of new technologies
- financial elements (e.g. minimum issue sizes, structures, maturities on debt instruments for mainstream index inclusion, standardised refinancing instruments)
- evaluation of credit risks in infrastructure, including the use of credit ratings on infrastructure debt instruments
- securitisation (including simple, transparent and standardized (STS) securitisation)
- credit enhancement mechanisms and institutions
- performance measures and metrics
- methodologies for infrastructure investment projects ratings across markets

- ***Guidance on:***
  - checklist on bankable projects factors
  - investment regulation of institutional investors
  - integration of new technologies (e.g. blockchain, crowdfunding platforms)
  - anti-corruption and responsible business conduct
  - connectivity infrastructure
  - risk mitigation and allocation
  - developing gender inclusive/empowering infrastructure
  - pro-poor pricing, contracts and regulatory frameworks
  - innovative financing (land capture, asset recycling)
  - project preparation and monitoring
  - renegotiation and dispute resolution processes
  - resilient infrastructure
  - technical assistance in infrastructure (including toward building capacities and standards)
  - instruments and institutions to mitigate currency risk, including over longer-term periods (insurance, guarantees, hedging)
  - blended finance mechanisms

- ***Quality infrastructure:***
  - definition of quality, resilient and sustainable infrastructure[9]
  - set of indicators and data to measure quality infrastructure
  - guidance on cost/benefit models and related national practices
  - development of a global database of public investment in infrastructure that provides baseline information on volumes of investment, access, quality and pricing of infrastructure so that quality standards can be established and monitored for new investments
  - assessment of the current ESG ratings systems and determination of a common template for rating and ranking ESG / quality during design, construction and operation of infrastructure projects
  - development of best practices for inclusion of standards related to safety, technology

[9] E.g. The unified EU classification system ('taxonomy') on sustainable finance: http://europa.eu/rapid/press-release_IP-18-3729_en.htm

flexibility, gender inclusion and empowerment, resilience to disaster and lifecycle costing
- development of governance standards for infrastructure, including disclosure of contracts, prices, and service standards, and best practices for consultations with consumers, communities and civil society
- development of quality criteria for procurement rules
- development and generalisation of using SOURCE as a multilateral tool to raise project quality through enhanced project preparation process and standards

▪ ***Further research*** *(see the Breaking Silos paper[10] for a more elaborated list) on*
  - new econometric analyses to identify demand and supply factors
  - increasing the efficiency of ESG standards
  - infrastructure macroeconomic issues and relation with structural reforms
  - exploring new technologies
  - return on equity investment at different phases of project life cycle
  - assessment of project preparation

▪ ***Data collection and analysis:*** see the data section and the G20 Infrastructure Data Initiative. The Steering Group of the data initiative will provide further related inputs for possible future work at the June meeting of the IWG.

▪ ***Sectoral (e.g.*** transport, energy, environment and low carbon, digital (wireless and wired communications), housing, infrastructure services, social infrastructure)***, geopolitical (e.g.*** developing and emerging economies, regions***) and institutional (e.g.*** *MDBs, banks,* institutional investors, utilities, local governments, SOE, SME ***) issues***
▪ ***Development of case studies and specific examples***
▪ ***Organisation of the work through dedicated sub-groups***

[10] Breaking Silos: Actions to Develop Infrastructure as an Asset Class and Address the Information Gap

Annex 1

Table of Main Databases for Infrastructure Financing (updated from the OECD report Breaking Silos)

Type of Data Source	Public/Private	PROVIDER	DESCRIPTION
Corporate	Commercial database	Bloomberg	Extensive equity and debt capital markets data for listed corporates, municipals and sovereigns. This includes equity, bond markets, foreign exchange markets, credit markets, as well as an important set of pricing and data analytics tools.
	Commercial database	Thomson Reuters - Worldscope	Listed Companies Data – both equity and debt capital markets.
	Commercial database	Orbis	Over 99% of the companies on *Orbis* are private. Private company information is more difficult to obtain, as the legal obligation to file accounts varies widely from country to country.
	Commercial database	Osiris (Bureau van Dijk)	Osiris has information on listed, and major unlisted/delisted, companies around the world. The information is very detailed and includes a lot more than financial reports. Different templates are used to show accounts in the correct formats for their company type and location.
Projects/Transactions	Commercial database	Dealogic Project Finance	Project Finance Transactions database. The database covers all infrastructure sectors and geographies. It provides both aggregate data on transactions as well as on specific tranches, including pricing details when available.
	Commercial database	Dealogic M&A	Database global capital markets information - global equity and fixed income transactions
	Commercial database	Thomson Reuters - Project Finance International	Project Finance Transactions database. The database covers all infrastructure sectors for all geographies. Limited details on the transactions and difficult to access and use.
	Commercial database	IJ Global	Infrastructure project and transaction database. The database covers all infrastructure sectors (social and defense, mining, oil and gas, renewable energy, water, and transport), for all geographies and both project finance and corporate balance sheet financing transactions. The database provides extensive details on the transaction, including pricing details when available. However, public financing transactions, as well as China, are not covered.
	Public database	World Bank Group's PPI Database	This database reports project-level information in energy, transport, telecommunications, and water and sewerage sectors for 139 low and middle- income countries. The database includes projects with at least 20% private participation. Details are also available on type of project—whether a project is a management and lease contract, a brownfield project, a greenfield project, or a divestiture

Type of Data Source	Public/Private	PROVIDER	DESCRIPTION
	Public database	SIF SOURCE	This database covers all infrastructure sectors for all geographies. Exhaustive data on project preparation, financing and implementation
Investment Funds	Commercial database	*Preqin*	Private Equity and Venture Capital modules of alternative asset funds and deals. Infrastructure investments and fund module
	Commercial Database	CEM Benchmarking	Pension fund analysis and benchmarking services including defined benefit, defined contribution, benefit administration with best practices and health care. Also provides benchmarking information for endowments/foundations and sovereign wealth funds.
	Commercial Database	State Street	Financial data analytics for institutional investors. Amongst its offering, State Streets provides benchmarks, indices and indicators.
	Commercial database	BNEF	BNEF database of clean energy and carbon investments (equities, corporate and asset-backed bonds, syndicated debt, VC, PE and M&A). BNEF database that includes information on financial transactions associated with "new energy" (defined as renewable energy generation, energy storage, carbon capture and storage, etc.). According to the metadata, the database covers all relevant projects worldwide above a certain threshold capacity. For example, projects with at least 1 MW of installed capacity in geothermal, solar and wind energy generation, 1-50 MW for hydropower, and all marine energy projects are included (BNEF 2012).
	Public database	UNEP Risø Centre	Clean Development Mechanism project pipeline.
Other	Commercial database	Thomson Reuters ESG research data	ESG database.
	Commercial database	Thomson Reuters Global Syndicated Loans	industry-leading syndicated loan transaction information
	Commercial database	Thomson Reuters ONE	ThomsonOne database of project finance transactions, PE and VC, as well as M&A data
	Commercial database	Financial Times	fDi Markets database of cross-border greenfield investments

	Commercial database	FactSet	FactSet’s databases on private equity transactions, M&A, and private company ownership
Type of Data Source	**Public/Private**	**PROVIDER**	**DESCRIPTION**
	Commercial database	Clean Energy Pipeline	Clean energy and low-carbon investment database (equities, corporate and asset-backed bonds, syndicated debt, VC, PE and M&A). Good transactions type and geographic coverage.
	Public database	OECD	Directorate for Financial and Enterprise Affairs’ aggregate FDI statistics
	Public database	United Nations Conference on Trade and Development	FDI statistics including a one-time attempt (in 2010) to measure low-carbon FDI