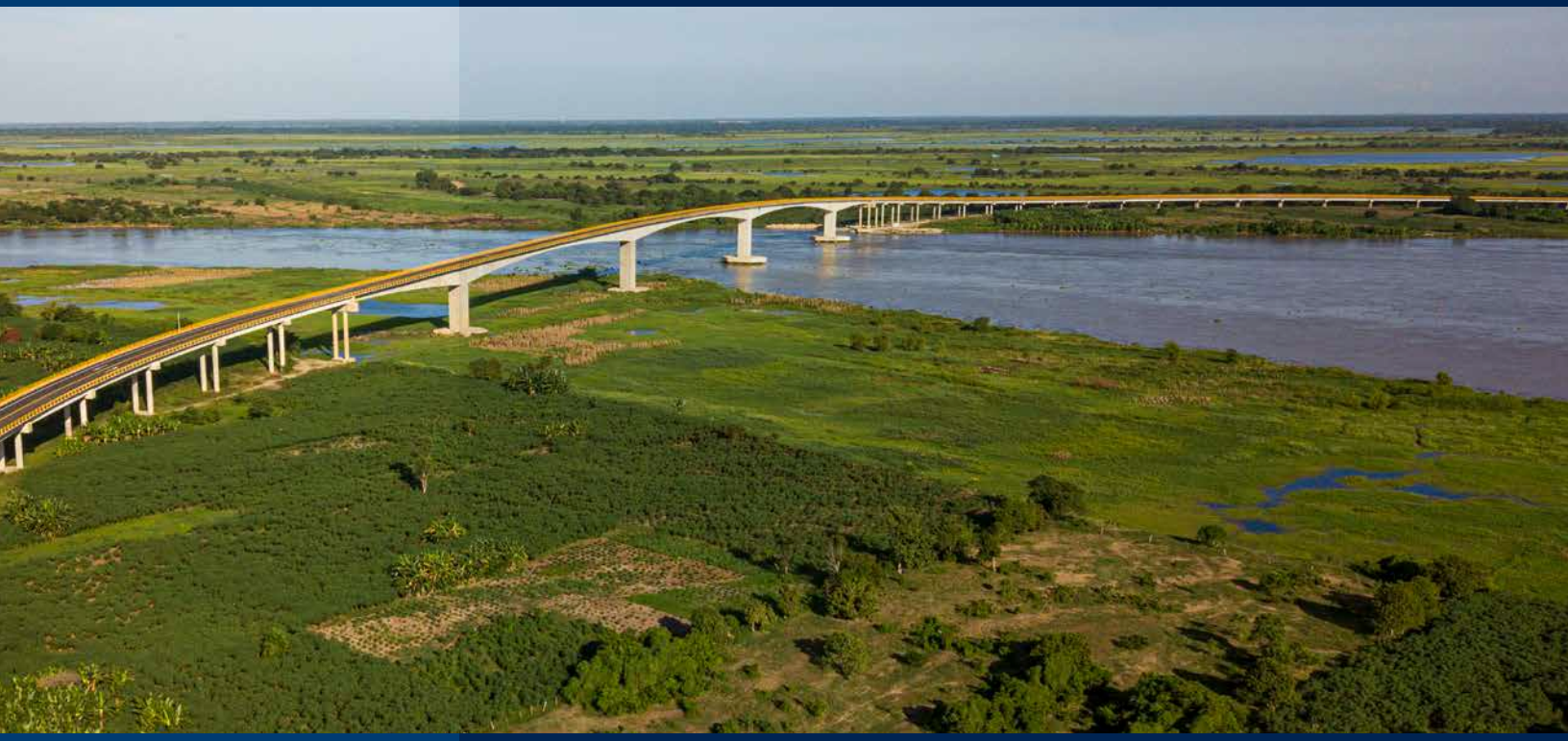
Executive Summary

Measuring Sustainability in Infrastructure Investment

A Case Study Assessment of Selected Standards and Tools

October 2020



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For nearly 60 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by more than one million members in the United States and close to five million globally. WWF's unique way of working combines global reach with a foundation in science, involves action at every level from local to global, and ensures the delivery of innovative solutions that meet the needs of both people and nature.

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Foreword by Scott Minerd and Carter Roberts

Scott Minerd

Carter Roberts

The estimates are staggeringly high for the level of investment in infrastructure that will be necessary to achieve the United Nations (UN) Sustainable Development Goals (SDGs), facilitate the growth of developing countries, and upgrade the existing stock of aging capital assets around the world. Not only is the need great but the need to do it right is even greater. If new and upgraded infrastructure stock is poorly planned or executed, the damage to the world's ecosystems and social development could outweigh the desired benefits.

The good news is that two important advancements are converging in the area of sustainable infrastructure finance. First, sustainable infrastructure is growing as an asset class among institutional investors and asset managers, particularly as they increasingly focus their capital allocations through the lens of environmental, social and governance (ESG) criteria. The past few years have witnessed an awakening in the finance sector around the roles and responsibilities of asset owners and managers in prioritizing investments to secure a healthy and stable planet and global economy. This has been most pronounced with respect to addressing the climate crisis and the "E" in ESG.

Now this trend must be placed in the context of responding to the COVID-19 crisis. While individual countries and the international community have struggled to meet their immediate health system needs, attention has now firmly turned to the "S" in ESG—to health security, to job preservation and creation, and to restarting global and local economies in a just and equitable manner. With low interest rates and huge commitments of public-private partnerships for funding economic stimulus, spending on infrastructure is likely to expand significantly. This creates an even more urgent case for developing clear and widely accepted sustainable infrastructure standards so these investments can support the transition toward climate-positive, safe and equitable economies and societies.

The second promising development in sustainable infrastructure finance is that we are moving closer to seeing the adoption of a set of consistent methodologies and metrics for sustainability measurement that will be necessary to attract significant institutional capital. We still have work to do, but this project, "Measuring Sustainability in Infrastructure Investment" is an important part of that process.

In this report, researchers from KPMG and Mott MacDonald applied a selection of ESG and sustainability standards to two different operating infrastructure assets: the Yatí-Bodega Road Interconnection in Bolivar, Colombia and the Carlsbad Desalination Plant in Carlsbad, California. The objective of the report is to assess the effectiveness and the practicalities of implementing these standards for investors. The research is the latest product of an ongoing collaboration between our two organizations on sustainable infrastructure investing, including a 2018 study we commissioned by Stanford University Global Projects Center (SGPC), "State of the Practice: Sustainability Standards for Infrastructure Investors." Three standards identified in the SGPC study were assessed in this project: The International Finance Corporation (IFC) Performance Standards (PS)

and Equator Principles (EP) (considered as one standard for the purpose of this research), Envision and the UN SDGs. In addition, the research assessed impact measurement and valuation (IMV) as an infrastructure investment decision-making tool. IMV measures the economic, environmental and social impacts of infrastructure assets using the single metric of monetary value.

The key insights, conclusions and recommendations in this paper move us closer to adopting commonly used standards and measurements that must be in place before sustainable infrastructure investing becomes an institutional asset class. We want to commend the team at KPMG, led by Mark McKenzie and Frits Klaver, and the team at Mott MacDonald, led by Niniane Tozzi, for their work on this important endeavor.

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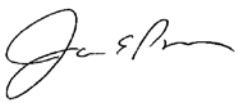
Acknowledgements

Sustainable infrastructure projects must play a foundational role in achieving the Sustainable Development Goals. Even with ramped up government spending in response to the COVID-19 crisis, private investment will still be needed to meet growing infrastructure demands. Fortunately, there is sufficient private capital available to help fund these projects, either through partnering with governments or as standalone investments. Moreover, the holders of this capital are increasingly seeking investments that can earn sufficient returns while also contributing solutions to climate, environmental and social challenges. One important key to unlocking this capital is for a set of sustainability standards and measurement tools to be commonly adopted by investors, developers, and regulators.

This study was commissioned with the intention of furthering progress toward such internationally recognized norms and standards to enable greater allocation of private capital by a diversified set of institutional investors to sustainability objectives. We believe the authors have moved us closer to this goal and unlocking that vital private capital.

Guggenheim Investments and World Wildlife Fund thank KPMG and Mott MacDonald for having led this project. In particular, we would like to recognize the contributions of Frits Klaver and Mark McKenzie of KPMG as well as Niniane Tozzi of Mott MacDonald, who served as the lead authors, with key contributions from team members Nikki van Dam and Vera Moll of KPMG, and Marielle Rowan and Kristy McConnel of Mott MacDonald. They were supported by Richard Threlfall, Global Head of Infrastructure at KPMG. We also appreciate the support of many others who contributed their expertise and perspectives, and without whose advice this product would not have come to fruition. At Guggenheim, this includes Michael Perkinson, Chief of Staff to the Global Chief Investment Officer, who has overseen these and related efforts, as well as the helpful inputs of Ning Liu and Jeremy Diamond. Kate Newman, who leads WWF's work on sustainable infrastructure, was involved with the study from the start with inputs and support from her colleagues Evan Freund, Helena Wright, Joanne Lee, and Collin Lawson. Finally, we should acknowledge the facilitating efforts of colleagues at Handshake, especially Robert Ludke, and the support of Alex Davis and Julia Cox.

Quantifying criteria to help determine and certify the sustainability contributions of an infrastructure project is no small task. In the face of the need for stimulus investments across the globe to support the COVID-19 recovery, we can expect a surge in demand for infrastructure spending. We hope this study will help remind all involved that both public and private capital can and should be directed toward those investments which will simultaneously address COVID-19 recovery needs and support progress toward sustainability goals. While we have not yet reached convergence around a specific set of tools and standards, the report shows that there are already plenty of good options available.



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Background to This Study

This analysis was commissioned by Guggenheim Investments (Guggenheim) and the World Wildlife Fund US (WWF) as part of an ongoing collaboration between the two organizations to better understand parameters of and promote investment in sustainable infrastructure.

It was estimated in 2015 that annual global infrastructure investment needed to double between 2015 and 2030[1] to deliver the United Nations (UN) Sustainable Development Goals (SDGs) and support the demands of an expanding human population. This now needs to happen in the context of a rapidly changing climate and the COVID-19 pandemic, creating accelerating demand for infrastructure investment to support both infrastructure resilience and economic recovery. Such investments could help to move the global economy into a net zero carbon and nature positive future, but if this new infrastructure stock is planned, sited and designed poorly, the resulting damage to ecosystems and higher pollution will compromise economic and social development goals and weaken the resilience of communities and supply chains.

It is therefore imperative that investors be enabled to direct capital to sustainable and resilient infrastructure projects that will deliver outcomes both for people and ecosystems on which our societies depend but also to understand what impact environmental and social phenomena such as climate change might have on the performance and value of the asset. However, many investors lack tools and processes to assess the sustainability performance of infrastructure project assets and factor these into their project screening and selection processes. A diverse array of sustainability assessment frameworks, standards and tools is available, but few, if any, have been developed specifically for investor needs. This has perpetuated a lack of international consensus on the basis for characterizing infrastructure investments as meeting sustainability criteria and has led some investors to develop their own tools. There is a clear and urgent need for greater consistency and convergence around how infrastructure investors factor sustainability and ESG into their investment decisions.

This research, conducted by KPMG and Mott MacDonald, builds on an earlier review by Guggenheim, WWF and the Stanford Global Projects Center (SGPC) of the many tools available to investors and others to measure the sustainability performance of infrastructure projects and assets.[2] It applies a selection of four sustainability standards and tools to real-life case studies of operating infrastructure assets with two key objectives:

- To understand the process and outcomes of applying the selected standards and tools; and
- To assess how effective each standard or tool could be in providing infrastructure investors with decision-useful ESG and sustainability information.

1 The Sustainable Infrastructure Imperative: financing for better growth and development, http://newclimateeconomy.report//2016
2 Guggenheim, WWF and SGPC, State of the Practice Sustainability Standards for Infrastructure Investors, 2019

Standards and Tools Tested

The four standards and tools selected for testing were:

- **The International Finance Corporation Performance Standards (IFC PS) and the Equator Principles (EP).** The IFC Performance Standards are generally acknowledged as the most widely used international framework of environmental, social and health and safety (ESHS) safeguards, providing financial institutions, private companies and governments around the world with a comprehensive set of policies, standards and guidance to use in the design and implementation of projects across all sectors. The EP are ten key principles adopted by many financial institutions to ensure that the projects they finance and advise upon are developed in a manner that is socially responsible and reflect sound environmental management practices. (Due to interlinkages between the IFC PS and EP, they have been considered as a single standard or tool for the purposes of this research).
- **Envision:** Envision is a rating system developed by the US-based Institute of Sustainable Infrastructure (ISI) to inform the design of infrastructure projects and evaluate their sustainability and resilience.
- **The UN Sustainable Development Goals:** The UN SDGs are an internationally recognized framework for delivering sustainable development for all countries by 2030.
- **Impact measurement and valuation (IMV):** IMV is the expression of economic, environmental and social impacts using the single metric of monetary value. The approach has its roots in cost benefit analysis widely used in the public sector to value the impacts of policy options.

Infrastructure Assets on Which the Standards and Tools Were Tested

Two infrastructure assets were selected, one in a developing economy and one in a developed economy:

- **Yatí-Bodega Road Interconnection, Bolivar, Colombia**: a 12km toll road crossing a major river and including Colombia's longest bridge. The project connected two rural municipalities, significantly reducing travel times between the two.
- **Carlsbad Desalination Plant, California, USA**: the largest seawater desalination plant in the Western hemisphere at the time of its opening in 2015. The project included a 10-mile (16-kilometer) pipeline and helped to address significant water scarcity challenges in the local area.

Research Methodology

The selected sustainability assessment standards and tools were retroactively applied to the two infrastructure assets using the best available operating data provided by the asset owners. The outputs of the assessments were then reviewed through the lens of investor ESG needs (see Table 1). None of the standards and tools assessed in this report had previously been applied by the asset owners or developers. The majority of the selected standards and tools were tested on one but not both of the case study assets due to reasons including data availability and geographic applicability.

Table 1: Summary of the effectiveness of the outcomes for investors of the four tools and standards

Insights assessed	Type of Insights	IFC PS/EP	Envision	SDGs	Impact measurement & valuation
Did the tool generate ESG risk insights?	Reputational risk	+	+	+	~
	Regulatory/legal risk	+	−	−	~
	Operational risk	+	~	~	−
	Market risk	+	−	−	−
	Physical/Climate risk	~	~	~	~
	Social risk	+	~	~	−
Did the tool generate ESG opportunity insights?	Opportunity insights	~	~	~	−
Did the tool enable assessment of a comprehensive set of ESG indicators?	Basic ESG indicators	~	~	~	~
	Broader ESG indicators	~	+	+	+
Did the tool generate insights on the asset's societal impact and/or contribution to sustainable development?	Societal impact	+	+	~	+
Did the tool generate insights with potential for integration into financial analysis?	Financial integration	−	−	−	~
Which investment strategies was the tool applicable for? Did the standard or tool generate insights that could support the following project screening/investment strategies?	Negative/exclusionary screening	+	−	−	~
	Norms-based screening	~	~	+	~
	Impact investing	~	~	~	+
	Positive/best-in-class screening	+	+	~	+
	Sustainability-themed investing	~	+	~	+
Did the standard or tool generate credible and robust insights that might enable the investor to protect or enhance their own reputation in the sustainable investment market?	Reputation enhancement	+	+	+	+

Legend	
Score	Description
+	**High effectiveness** The standard or tool generated insights that could be of significant relevance to investor needs.
~	**Moderate effectiveness** The standard or tool generated insights that could be of some relevance to investor needs. However, its effectiveness was limited by factors such as lack of quantitative insights, indirect rather than direct relevance or limited application to a broad range of ESG indicators.
–	**Low effectiveness** The standard or tool did not generate insights relevant to investor needs.

Key Findings

- The research found that each of the standards and tools tested provides a valid but different perspective for investors; each may be considered as an alternative lens on the sustainability performance of an infrastructure asset, with its own strengths and weaknesses.
- The effectiveness of each standard or tool depends to a large extent on the specific needs of the individual investor in terms of purpose, ambition and investment belief or strategy.
- No single standard or tool was found to satisfy all of the sustainability assessment needs of the infrastructure investor as defined in this research.
- Investors are likely to find that a combination of different standards and tools is necessary to provide the breadth of perspective and full range of insights they seek.
- All of the four standards and tools tested were found to be weak in addressing certain rather crucial aspects, such as the financial quantification of physical risks from climate change.

IFC Performance Standards and Equator Principles

- The IFC PS and EP are relatively mature when compared with many of the other standards and tools on the market and are now widely known and used worldwide.
- They are essentially a risk management tool providing investors with an understanding of the environmental and social risks related to projects they are considering for investment.
- Environmental and/or social impact assessments that are IFC PS/EP-compliant may be more comprehensive than required by local regulations.
- Understanding and interpreting IFC PS/EP risk and impact assessments requires technical expertise that investors may not have in-house.

- Despite the relative maturity of the performance standards, many infrastructure project developers still lack experience with them, on-the-ground understanding can be low, and there can be variations in how well they are applied.
- Compliance with the IFC PS/EP could be considered by infrastructure investors as a minimum project screening requirement, but more ambitious and proactive investors may wish to go beyond their compliance-focused and do-no-harm orientation.

Envision

- Envision could help investors to assess and compare the overall sustainability performance of different infrastructure projects or alternative designs as part of the project screening process.
- It has potential to support exclusionary or best-in-class investment strategies.
- It generates simple, easily understood project ratings that can be factored into the investment project screening process without deep technical knowledge and applied to any infrastructure class.
- Envision can help to form a holistic view of an asset's sustainability performance and capture key sustainability achievements, but the assessment also revealed gaps.
- While Envision was created to be geography agnostic, the framework has been most widely applied to North American infrastructure assets. Efforts are currently underway to spread its influence globally and drive wider implementation.

UN Sustainable Development Goals

- The UN SDGs were intended as goals for national governments, not to provide investor-relevant data for infrastructure project screening. Therefore, there is no widely accepted methodology to apply the SDGs in an investment context.
- For the purposes of this research, an infrastructure assessment methodology based on the SDG framework was created.
- Insights generated showed this could give an indication of a project's contribution to sustainable development and support a range of investment strategies.
- This is important given the increasing inclination of investors to channel capital to projects that support the SDGs.
- However, insights generated were largely subjective and qualitative, whereas the other tools and standards were more successful in providing clear, objective and quantitative measures.
- The potential of the SDGs as a sustainability assessment framework for infrastructure may be strongest as a thematic overlay for other standards or tools, or as a compass to guide investors to assets with the potential to make significant contributions to the SDGs.

Impact Measurement and Valuation (IMV)

- IMV can provide investors with a holistic, quantified view of the ESG impacts of potential infrastructure investments that can be directly compared with each other because of the use of a single monetary metric.
- IMV may have particularly strong potential to support impact investing strategies.
- IMV's roots in cost-benefit analysis and industry efforts to drive convergence and consistency in valuation approaches may further enhance the attractiveness of IMV as a sustainability assessment tool.

Key Insights and Recommendations

Investors need to be clear about their own requirements in choosing sustainability assessment standards and tools: for example, they need to carefully consider their ambition levels and investment approaches. The framework of investor needs developed for this research may provide a useful starting point.

Current standards and tools have gaps in relation to "black swan" events: none of the standards and tools tested in this research explicitly takes arising risks such as COVID-19 into account, even though these can have significant impacts on infrastructure investments.

Early application of ESG assessment standards and tools in project screening and design is important to optimal sustainability outcomes: the retroactive application of standards and tools in this research highlighted a number of shortcomings that could likely have been overcome had the standards or tools been adopted at the project onset.

None of the standards and tools tested for this research fully satisfied the identified investor needs: it may be beneficial to refine existing tools, develop a new standard or tool specifically tailored toward the needs of investors, or to combine existing standards and tools so that they better fulfill investors' needs. Options include:

1. **Establish a task force to develop a standard sustainability assessment approach for infrastructure investors.** Such a task force could bring together investors (data users) with infrastructure project sponsors, developers and operators (data preparers) to agree on the ideal form of sustainability considerations and disclosures to fulfil the needs of investors while being pragmatic and workable for data providers. A successful example of such an effort applied to establishing clear guidelines for disclosing risks companies face from climate change and how they are addressing them to inform investors and other stakeholders is the Task Force on Climate-related Financial Disclosures (TCFD)[3].

3 https://www.fsb-tcfd.org/

2. **Establish a collaborative platform to build on and converge existing standards and tools.** This has the potential to help the infrastructure community and investors reach a more coherent approach towards assessing the sustainability of infrastructure projects in a way that fulfils investors' needs. An example of such an initiative is the Corporate Reporting Dialogue, which was established to bring together leading corporate sustainability reporting frameworks to promote greater coherence, consistency and comparability among them[4].

It is critical that investors – in collaboration with partner organizations such as WWF – continue to take the lead and drive progress. Investors need to work with each other and experts to establish common science-based sustainability expectations for infrastructure projects and to develop and agree upon minimum standards for what constitutes sustainable infrastructure investment – moving towards internationally recognized norms.

The COVID-19 crisis, which emerged during the research for this report, highlighted the urgency of this work – given the likely acceleration of infrastructure investment to boost economic recovery – and underscored the need for further investigation into how standards and tools can better assess the adaptability and resilience of infrastructure assets in times of disaster or crisis.

4 https://corporatereportingdialogue.com/

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