

Executive Summary

State of the Practice: Sustainability Standards for Infrastructure Investors

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October 2018



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Foreword by Scott Minerd



Infrastructure in the developed world is decaying, while much of the developing world is eager to build out its energy, transportation, communications, and housing infrastructure to drive economic growth. Addressing this need for investment requires a serious and concerted effort to establish standards that will guide the development of infrastructure to benefit everyone. Technological innovation, economic necessity, and environmental considerations all must be part of this conversation. At the same time, infrastructure is fast becoming an important asset class to the investment community, which is increasing its focus on environmental, social, and governance (ESG) criteria when making investment decisions.

With this as backdrop, WWF and Guggenheim Partners commissioned members of the Stanford Global Projects Center to identify and analyze the various metrics that have been established by multiple organizations to assess the sustainability of infrastructure investments. Such evaluations are not new, but there has been a recent proliferation of these metrics, each with its unique purposes and criteria. As measuring sustainability garners greater attention, understanding the range and application of these metrics will allow investors, companies, governments, and citizens to pursue infrastructure investments that can lead to economic growth that is balanced against the moral and ethical considerations shared by all stakeholders.

At its core, sustainable development means investing in safe and reliable infrastructure to power our world, feed our people, and foster growth in ways that preserve and protect our environment. It is becoming clear that before infrastructure investing can successfully transition to an institutional asset class, there must be consistent methodologies for determining its sustainability. The fruits of this project—this Executive Summary and the accompanying full report—will make a significant contribution toward achieving that objective. I want to thank Carter Roberts and his team at WWF for partnering with us on this project, and look forward to our organizations continuing to work together to foster dialogue on the development, construction, and financing of sustainable infrastructure.

A handwritten signature in black ink, appearing to read 'Scott Minerd', written in a cursive style.

Scott Minerd

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This Executive Summary accompanies the authors' full report – State of the Practice: Sustainability Standards for Infrastructure Investors, available at [GuggenheimInvestments.com/Sustainability](https://www.guggenheiminvestments.com/sustainability).

State of the Practice: Sustainability Standards for Infrastructure Investors

Sustainability or Environmental, Social and Governance (ESG) standards, reporting tools, ratings certifications and accounting systems are becoming a familiar part of the investment industry. Reporting standards, metric systems and ratings have been developed and continue to evolve across a myriad of public and private asset classes to give institutional or lay investors, and their fiduciaries, useful information about the sustainability performance and practices of the investment opportunities before them. These standards across different asset classes face some unique and very similar challenges, one of which involves finding a balance between providing utility for investors, by aggregating useful information, and demonstrating utility for the downstream managers of individual investments who will be responsible for collecting data and reporting. These ESG and other sustainability investment standards also share some common goals, notably to improve sustainability practices and outcomes for investments above and beyond those already required by regulation.

The purpose of this study is to assess the “state of the practice” for sustainability standards and rating or accounting systems within one relevant and very unique asset class – infrastructure investment. Sustainability assessment has been an important factor in infrastructure in many developed economies for some time, but this was largely limited to regulatory compliance and permitting. Recently, though, investor-oriented standards and project rating programs have been developed to support investors in the sector, and these are the focus of this study. This review was accomplished via detailed assessments of each of the metric systems included in the study supplemented by interviews with the developers of those standards and industry practitioners.

As the infrastructure asset class has grown and developed over the last fifteen years, institutional investors, asset managers, developers, designers and public sector sponsors have noted that infrastructure is profoundly impactful to our climate, natural environment, and societies, and that the asset class is a natural union between long-term investing and sustainability. Infrastructure assets have useful lives that often exceed 50 or 100 years, making sustainability and the accounting of environmental or social externalities particularly critical. Despite these facts, the field of infrastructure sustainability accounting and assessment tools is relatively underdeveloped compared to certain other, more mature asset classes.

More so than in many other sectors, infrastructure accounting or rating tools thus “pick up” to some extent, where public sector regulations let off, in that they also focus on the management practices and performance indicators of assets that are already in operation or that are approved to move forward with design and construction.

In some ways, infrastructure as an asset class is an odd area to “lag” in the adoption of widely accepted accounting or reporting tools for sustainability. It is arguably the area most familiar with environmental reporting and requirements, at least in terms of public sector regulation. For at least 50 years in many developed economies (and in some developing countries, for at least the past 20 years), governments have been regulating infrastructure projects and measuring impacts and practices to ensure compliance with environmental or social standards. These have carried over to accepted project-level “safeguard” policies of international financial institutions supporting infrastructure investments across the developing world. These regulatory reviews have generally focused on the preservationist analysis of whether or not to build, what to build and where. Accounting tools and project rating systems have generally focused more exclusively on the question of how to develop, design, build and operate the asset in the most sustainable manner. More so than in many other sectors, infrastructure accounting or rating tools thus “pick up” to some extent, where public sector regulations let off, in that they also focus on the management practices and performance indicators of assets that are already in operation or that are approved to move forward with design and construction. We term this latter approach as conservationist, in that the question of whether a project should be built – or at least the goal, such as an amount of power to be produced – has already been set, and the focus is on how to manage sustainability moving forward, from preparation and design to managing an operating asset.

It is worth noting here that this delineation between investor and regulatory assessments is not a distinct transition, but rather reflects the general focus of each type of assessment. Just as many regulatory processes involve monitoring and confirmation of impacts as designed, many of the investor assessment tools in this study also include pre-development criteria designed to help with project selection and early-stage design – to not only develop projects more sustainably but also to select the most sustainable investments.





Accounting and Rating Tools Available

Infrastructure investors have a variety of tools available to them in measuring and reporting sustainability for their investments, and many of those included in this study are used by both investors and other members of the infrastructure value chain, such as design or engineering firms, construction companies, consultants, public sector sponsors or environmental champions and stakeholders.

The reporting systems included in this study are listed below, and are grouped imperfectly into two different categories – either project screening tools or accounting tools. The accounting tools, generally, are broad standards for reporting performance against specific indicators or sustainable development goals. The screening tools are more focused on the review or verification of information at the project level, culminating in a project rating or total score against a series of sustainability standards. Several of these screening tools look far upstream into early-stage planning, design and engineering, thus supporting a new approach to project development. The two categories are not meant to be comprehensive for classification, but instead provide a way of distinguishing the different standards included in this study.

Investor Sustainability Assessment Tools in this Study

Project Screening Systems	Accounting Tools
CEEQUAL	CDC Sustainability Protocol
Envision	Greenhouse Gas (GHG) Protocol for Lifecycle Assessment
GRESB	Sustainability Accounting Standards Board (SASB) - Infrastructure
International Finance Corporation (IFC) Performance Standards	Task Force on Climate Related Financial Disclosures
Infrastructure Sustainability Council of Australia (ISCA)	United Nations (UN) Principles of Responsible Investment
SuRe	UN Sustainable Development Goal Indicators

Challenges and Compromises in Sustainability Measurement in Infrastructure

The developers of the sustainability accounting tools and project screening or rating systems listed above have made significant inroads towards better sustainability metrics for the infrastructure industry, and have built a menu of options for investors eager to measure and report on the sustainability of their portfolios. It is still apparent, however, that the development and adoption of sustainability metrics for infrastructure investors lags certain other asset classes. If sustainability measurement is more important in infrastructure investment (due to the scale of potential impacts), it is also significantly more difficult to apply standardized measurement tools within the sector.

Some of this has been attributed to the relative youth of infrastructure as an investment asset class or component of institutional portfolios. Other, similar but more mature asset classes such as real estate investment, have experienced significantly higher rates of adoption of standardized reporting system or project screening tools. This logic certainly has merit, and it is indeed the hope of many infrastructure investors and reporting tool developers that the asset class is simply evolving to catch up with more mature asset classes in sustainability reporting just as it is in many other areas.

This is not the only way in which the infrastructure asset class is unique, however, and there are clear challenges to sustainability assessment and reporting in the sector, including the importance of materiality in assessing sustainability in infrastructure, the scope of environmental and social impacts from infrastructure projects, and variation between regulatory regimes in the sector. These challenges remain even though public sector sponsors and regulatory agencies have a long history of environmental analysis of potential projects within their jurisdictions.

Materiality

That infrastructure projects are idiosyncratic is a truism of the asset class. No two projects are the same, regardless of whether they share the same sector or regulatory regime, let alone numerous other contextual factors that could differentiate them. A single assessment tool or accounting standard that could aggregate information between different sectors, under different regulations, and in different geographies is an attractive goal, but perhaps impossible to design. This makes the inclusion of materiality an important consideration in any metric system for the infrastructure asset class. The term materiality here refers to the relative importance of different environmental criteria for the project in question, and also potentially what constitutes good performance under that criteria. Should assessments address similar factors irrespective of project economic, regulatory, and other context or should they be tailored to the relevant metrics for the project in question, and how much so? In practice, materiality assessments are used by some of the tools in this study to either remove specific criteria from a project's score or weight the scores of particular criteria deemed more important for the project in question.

The importance of materiality in measuring sustainability in the infrastructure sector addresses one of the key trade-offs for ESG reporting and assessment tools in general, and this is the balance between providing reporting that is useful when aggregated (to institutional investors or other upstream stakeholders) but also relevant to the individual projects they are used to assess. Materiality is clearly more important in infrastructure relative to other sectors, but its inclusion in metrics may make it more difficult to standardize reporting for portfolios of investments. Many of the metrics included in this study have tried to find a balance in whether or the degree to which materiality should be incorporated in their measurement of projects to balance these competing priorities.

Management Practices and Performance Indicators

Project screening or rating tools and other sustainability reporting tools for infrastructure are designed with the goal of promoting best practices in sustainable infrastructure design and development, not merely improved reporting of those impacts. As in other sectors, reporting and assessment tools in infrastructure face trade-offs in measuring environmental performance indicators and management practices. Here the term environmental performance indicators refers to quantitative metrics of the environmental costs and benefits or other impacts of a project, such as energy consumption or carbon emissions. The term management practice refers to specific actions or studies which projects can undertake, which are naturally more objective or verifiable than some environmental performance indicators but entail secondary impacts on environmental performance. Actions such as the completion of a lifecycle energy assessment or the appointment of a lead sustainability officer do not directly improve a project's environmental performance, but certainly these practices will likely improve project outcomes over time.

This consideration also relates to the balance between metrics that are useful at the project level and those that are useful when aggregated. While having a deep focus on environmental performance indicators at the project level is what sponsors should be optimizing for, local context may make individual performance indicators less relevant or perhaps even misleading when applied across different projects. Here, many of the tools included in this study again sought a balance, with the project rating tools erring on the side of metrics focused on management practices by the companies involved in projects and the portfolio-oriented accounting tools primarily focusing on performance indicators.

It should be further noted here that while environmental performance indicators may, at first consideration, be "optimal" metrics for assessing sustainability, this is not necessarily the case. In fact, many of the project assessment tools included in this study were originally intended to focus primarily on performance indicators, but over time gravitated towards the more objective management practices in their scoring metrics. This is not only due to their relative ease of verification. Management practices may, assuming an overarching objective of more sustainable project performance, be a more accurate measure of a project's performance relative to benchmarks than performance indicators alone.

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Regulatory Context

As the tools included in this study were created to promote sustainable management and performance above and beyond that required by regulation for the projects they are used to assess, many of them are naturally referenced to some form of regulatory baseline, and thus are limited geographically in their potential applications. More recently, several international-oriented assessment tools have been developed, and others have been designed based on the standards of international multilateral institutions like the World Bank, but there is no easy solution to designing metrics that are relevant regardless of regulatory regime. In designing metrics for global applications, they naturally become less relevant in regions with more stringent regulatory requirements. Here again, the assessment tools included in this study have balanced tradeoffs between tailoring to a single jurisdiction and being as widely applicable as possible.

Assessment Scope

Finally, measuring and reporting infrastructure sustainability and environmental impacts is difficult due to the scope of analysis required to do so. This goes beyond the fact that environmental impacts of infrastructure projects are simply large, which they are, but they also predominantly occur outside the footprint of the project in question, and as a matter of analysis scope are extremely difficult to measure accurately in a standardized way. For some metrics, this may add a layer of subjectivity to environmental assessments based on performance indicators.

These challenges share a few common threads. Due to the size and complexity of individual investments, and their unique operational, regulatory, economic and environmental context, it is extremely difficult to design standards that can aggregate and compare information across projects without sacrificing the relevance of those standards at the project level. This is further aggravated when assessing a program of investments rather than an individual project, and is a challenge that infrastructure investors and the developers of reporting tools for the industry face today.

State of the Standards

The sustainability measurement tools included in this study have addressed this challenge by positioning along that spectrum of being relevant in aggregation and at the project level in various ways, and applying additional solutions to alleviate those tradeoffs. Some of the accounting tools included in this study are fairly narrow in their criteria or the aspects of the environment or society that they measure. Others, such as the UN SDG performance indicators, provide a broad framework for investors to target the sustainable development goals. The table below includes the accounting and project screening tools included in this study, and some of their general attributes.

In the table below, the standards studied are categorized as Project Screening methods or Accounting Tools. As outlined above, the Project Screening category is used for standards focused on the detailed review and scoring of individual infrastructure projects. The accounting tool category describes general or tailored standards to report sustainability information. We have omitted the UN SDGs from the table as the SDGs can be classified as a framework as opposed to a specific screening or accounting tool. We do note however that there are standards that have been developed since 2015 to measure the impact of the SDGs for various investments. While GRESB is classified here as an accounting tool, we recognize that it is more commonly used as a Portfolio Aggregation tool as it is oriented towards developing portfolio level insights from project data. The CDC toolkit is classified as a 'project screening' methodology because it is used to screen investment managers for investments, albeit at the fund level as opposed to the individual project level.

Sustainability Standard Summary Information

Standard	Category	Year Developed	Criteria	Geographical Applicability	Materiality	Aggregation	3rd Party Verification	Traction
SuRe	Project Screening	2015	61 Criteria (15 PC / 46 MC)	Global	By Project	No	Assessments Completed by 3rd Party	New. None.
Envision	Project Screening	2015	60 Criteria (mixed PC / MC)	Currently US / Canada. Potentially International	None	No	3rd Party Verification	New. 275 Corporate Members
CEEQUAL	Project Screening	2002	9 Sections (mixed PC / MC)	Current UK / Ireland. Small International	By Project	No	3rd Party Verification	Very high in UK and Ireland
IFC Standards	Project Screening	2006	8 Broad Categorical Assessments	Global	None	No	IFC Review	High
GRESB	Project Screening	2016	~40 Criteria (25 PCs)	Global	Currently Incorporating	Yes	Low. Spot Check Verification	New. 160 Projects
SASB	Accounting Tool	2012	Determined by Sector	US Focused Currently	By Sector	Yes	None	Low
TCFD	Accounting Tool	2015	Determined by Sector	Global	By Company	Yes	None	New. Low.
ISCA	Project Screening	2012	16 Categories	Australia / New Zealand	By Project	No	3rd Party Verification	High but Local
GHG Protocol	Accounting Tool	1998	Limited to GHG Emissions	Global	By Sector	Yes	Low - Some Verification Guidelines	High
CDC Toolkit	Project Screening	2007	6 Reporting Schedules	UK Focus, but Global Applicability	By Sector	Potential	None	Medium
UN PRI	Accounting Tool	2006	6 Principles	Global	By Sector	Yes	Weak (Peer Validation)	Medium-High

Many of the tools included in this study are ratings guidelines that involve considerable inspection and certification for the projects they rate, and when these are based on management practices (which many of them predominantly are) they act almost as guidelines for project participants in managing projects sustainably and reporting performance.

Virtually all of the tools in this study were designed to align with a single regulatory regime or the regulatory standards of an international finance institution like the World Bank or International Finance Corporation. Though several of these systems have more recently developed international versions to be applied outside of their original regulatory regime, they all have limited traction in those applications. Only one of the standards (SuRe) was designed around becoming a truly international, non-institution-based project standard, but the standard is more oriented towards a system to rate developing economy projects without stringent regulatory requirements. Even the Equator Principles, which are also oriented towards developing economy projects, are based on the performance standards of the IFC.

Many of the project screening or rating tools have weighted their assessments towards management practices, as opposed to environmental performance indicators, in that points or levels of achievement for many criteria were based on management practices. For criteria or levels of achievement based on performance indicators, the majority were scored based on the project's improvement on the indicator relative to a baseline, as opposed to the performance indicator directly. Many of the assessment systems included in the study counterbalanced this with a rigorous assessment and verification process, through internal or 3rd party independent reviews and robust documentation of each evaluation criteria. In other words, where performance on individual assessment metrics is not objectively aggregable or weighted towards management practices, a robust assessment process can alleviate any concerns of subjectivity in project ratings.

The figure below is a subjective assessment of some of the metric systems included in this study along two axis. The first axis illustrates the degree to which verification is required in the rating process for individual projects. Here the systems included in this study range from objective 3rd party assessments, to 3rd party verification for each project, to spot or peer verification, to no verification requirements. The second axis is illustrative of the degree to which the metric system enables the aggregation of results.

Assessment Verification Requirements and Result Aggregation



In a sector as idiosyncratic and complex as infrastructure investment, it is no wonder that a diverse range of tools has been developed to help investors measure impacts and report on their sustainability practices.

This illustrates another area in which the developers of metric systems or accounting tools must find a balance. The measure of aggregation illustrates the degree to which individual performance indicators or metrics can be aggregated at the portfolio level. Many of the project screening or rating tools included in this study require rigorous verification processes, but do not enable the aggregation of reporting for a portfolio of projects outside of the rating achieved by each project assessed. Many of the accounting tools have lower verification requirements but focus on environmental performance indicators that can be aggregated for reporting purposes. GRESB in this analysis enables the partial aggregation of reporting data because it enables the aggregation of environmental performance indicators (a small component of its project assessment) and also has a relatively less-rigorous verification requirement in comparison to some of the other project screening tools, which is mostly through document verification in addition to spot checks by its verification team.

Materiality has likewise been incorporated in many of the assessment tools for project-level ratings. This takes various forms, including the development of weighting scales to score certain environmental considerations as relatively high in comparison to others, or opportunities for project sponsors to request to opt out of individual metrics as irrelevant to their study. One of the project screening tools (Envision) was designed to be used to assess projects without incorporating a materiality assessment at the beginning of a review in part because it was designed to be an objective, practice-oriented system that could compare sustainability practices across infrastructure sectors.

In a sector as idiosyncratic and complex as infrastructure investment, it is no wonder that a diverse range of tools has been developed to help investors measure impacts and report on their sustainability practices. This study, it is worth noting, is focused on assessment tools at

the portfolio level of an infrastructure investor — our sample set of tools would be significantly expanded if sector-based tools or software programs to measure impacts were included. As the industry continues to experiment with new ways to measure and incentivize sustainable investment practices and performance, it is likely that the tools and systems available will likely continue to diversify in the near future, rather than coalesce. This diverse set of tools would evolve to mirror the heterogeneity of the asset classes, regulatory regimes, and parties involved in the infrastructure development sector that they are designed to support.

State of the Practice

That may not be welcome news to investors eager to adopt more sustainable accounting and metric programs or sustainability measurement advocates. Indeed, a common sentiment within the infrastructure industry and other sectors exploring common standards for sustainability reporting is the desire for the “one standard” to emerge as the dominant, widely adopted standard so investors and asset managers are more comfortable adopting it. Within the infrastructure investment industry today, there is concern that the wide array of tools and standards available will incentivize more institutional investors and large allocators of capital to take a “wait and see” approach for the industry to coalesce.

This phenomenon is somewhat validated by those investors, developers and service providers actively using and implementing the sustainability standards included in this study. Those pioneering members of the industry have not coalesced around an industry standard as they try different tools and models. Rather, they are mirroring the decisions of standard designers, and adapting their approach to the local context of the decision at hand. Many of the industry participants and investors that are most active in sustainability reporting or certification are actively using multiple tools included in this study, sometimes even for the same projects. Like the materiality assessments included in some of these rating standards, they are evaluating the conditions “on the ground” and choosing among these many tools available to implement a reporting program that is relevant at the project level and also useful at the portfolio level. Today that may vary from project to project, and this will likely continue to be the case for the industry, at least in the near future.

This begs the question that is perhaps at the heart of this review — will a unifying industry standard for sustainability rating and reporting ever emerge for the infrastructure asset class? This question is commonly debated in terms of market share — once one tool or rating scheme is adopted en masse by some large institutional investors it will simply become the de facto industry standard. This may eventually occur, but this review indicates that infrastructure will likely remain a difficult asset class to commoditize, for sustainability reporting and otherwise.

There are promising efforts underway to find common ground between the standards to incentivize adoption. One such proposed initiative will develop high-level, common performance indicators across many of the nationally-focused project rating schemes to glean a few international performance indicators or metrics that can be used to compare projects across rating schema. Other “toolkit” initiatives to compile sustainability metrics

Many of the industry participants and investors that are most active in sustainability reporting or certification are actively using multiple tools included in this study, sometimes even for the same projects.



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and tools in other asset classes may also be adapted to the infrastructure sector, making it easier for investors to adapt and select reporting or rating tools that meet their needs for a given investment. Similarly, an overarching single and agreed framework, that rating tools need to be consistent with for infrastructure, might enable more robust comparability or drive the evolution towards a more unified approach. This study attempts to make an impact along this journey.

Beyond the development of more common performance standards and tools, better sustainability measurement and reporting can be promoted by demonstrating the connection between sustainability and the economic performance of projects and portfolios. Here there is considerable reason for optimism. The tools in this study are all relatively young, and the growing set of projects and investors using them will be useful for future research on and development of approaches to make sustainability a priority in the economic and financial performance of infrastructure investments. Infrastructure sustainability and resilience are not just the concerns of future generations; they can have a material impact on the economic performance and risk profile of individual projects. This will be an important opportunity for future research in this field, which could include comparative studies between various standards to identify linkages between their specific metrics and sustainability or resilience outcomes.

In sum, there have been significant steps made towards aligning the infrastructure investment community around a common language of reporting and set of international performance metrics. As the metric and reporting industry continues to develop in the sector, those specific indicators and metrics that emerge as international standards will enable wider adoption by more diversified investors. In the meantime, rating and accounting tool developers for the industry will likely continue to evolve their offerings, and pioneering investors in the industry will likely continue to experiment with different tools available towards a goal of more comprehensive, standardized reporting of sustainable investment metrics. For any asset class, and especially infrastructure, this will be a vitally important endeavour, but not easy.



Glossary of Terms

CDC – Commonwealth Development Corporation

ESG – Environmental, Social and Governance

GHG – Greenhouse Gas

GRESB – Global ESG Benchmark for Real Assets

IFC – International Finance Corporation

ISCA – Infrastructure Sustainability Council of Australia

MC – Management Criteria

PC – Performance Criteria

SASB – Sustainability Accounting Standards Board

SuRE – The standard for Sustainable and Resilient Infrastructure

TCFD – Taskforce on Climate-related Financial Disclosures

UN PRI – United Nations Principles of Responsible Investment

UN SDG – United Nations Sustainable Development Goals

WWF – World Wildlife Fund

CEEQUAL – The Civil Engineering Environmental Quality assessment

Envision – Institute for Sustainable Infrastructure sustainability rating system

ISCA – Infrastructure Sustainability Council of Australia

SASB – Sustainability Accounting Standards

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