

The Solutions Lab

Scaling for Sustainable Infrastructure

Integrating Sustainability Considerations into Infrastructure Project Pipelines

Guidance Note

Contents

Introduction 1	
Limitations of the Guidance Note / Non-Covered Considerations)
Why Should Project Preparation Officials Focus on Sustainable Infrastructure?)
Avoid the negative impacts of unsustainable infrastructure)
Reap the benefits of sustainable infrastructure2)
What are the Common Features of Sustainable Infrastructure?	;
Multilateral Development Banks (MDBs) - "A Common Set of Aligned Sustainable Infrastructure Indicators"	ŀ
Towards greater consistency and alignment among sustainable infrastructure instruments5	;
How to Implement Sustainability in Daily Operations?6	;
I. Identifying sustainability gaps and goals7	,
II. Training, engagement and buy-in8	;
III. Making institutional processes fit for purpose9)
IV. Implementing sustainability tools smoothly and sustainably)
V. Streamlining your overall sustainable infrastructure strategy11	
References	;

Introduction

This note provides guidance for project preparation officials who strive to ensure sustainability in infrastructure development. While the guidance note offers useful information for professionals dealing with sustainability considerations along the whole infrastructure lifecycle, it targets in particular those in charge of the up- and midstream phases from project prioritization to procurement (see figure 1 below). The goal is to offer project preparation officials – especially those working in larger institutions – a "recipe" on how to successfully integrate sustainability in their daily operations and institutionalise a sustainable infrastructure strategy.

Strategic Planning	Prioritization	Project \ Planning	Concept Design	Procurement	Detailed \ Design	Finance	Construction	Operation & Maintenance	Decommissioning & Repurposing
Upstream					Downstream				

FIGURE 1. THE INFRASTRUCTURE LIFECYCLE – PROJECT PREPARATION PHASES¹

The Guidance Note outlines in three parts:

- Why project preparation officials should focus on sustainable infrastructure: a call to action;
- What sustainable infrastructure entails: an overview of the emerging consensus of sustainability indicators;
- **How** sustainability can become an integral part of daily business: a step-by-step implementation guidance for professionals.

The Guidance Note offers a comprehensive "recipe". But users will have to procure the ingredients (such as sustainability tools², support by third parties for ambitious change management processes, or additional technical advice) elsewhere.

The Guidance Note builds on key learnings from expert meetings and technical assistance projects, including from the Solutions Lab and ongoing work by the Mexican National Infrastructure Fund (FONADIN) to design a sustainable infrastructure strategy and to build a sustainable infrastructure unit.³

¹ Figure developed by The Solutions Lab. This is only intended as an example, many sectors define the steps in the process differently.

² The term "sustainability tools" refers to sustainability standards and frameworks, see section on "What are the Common Features of Sustainable Infrastructure" below for more details.

³ Launched in 2019 by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the Global Solutions Initiative (GSI), The Solutions Lab brought together 28 experts from more than 15 countries in a 10-months multi-stakeholder format to identify effective sustainable infrastructure solutions and to devise context-sensitive strategies for their scaling. From March 2020 to March 2021, ongoing work at FONADIN is accompanied by participants of The Solutions Lab, who formed a Critical Friends Group – in other words, an informal advisory board striving to support the development and increase the impact of FONADIN's sustainable infrastructure strategy. The Critical Friends Group was established at the request of the Mexican infrastructure development bank Banobras, as fiduciary of FONADIN.

Limitations of the Guidance Note / Non-Covered Considerations

It is important to note that sustainable infrastructure critically hinges on an enabling environment (including policies, laws, regulations and standards) and multi-stakeholder processes to integrate sustainability efforts across sectors, spatial scales and institutional boundaries.⁴ While these aspects are often beyond the mandate and direct influence of project preparation officials, the users of this guidance note will benefit from insights into questions around upstream considerations and the enabling environment for sustainable infrastructure development.

Definition of Sustainable Infrastructure – Set the Stage

For a common understanding and language on the term "sustainable infrastructure", this note draws upon **The Solutions Lab's official definition**:

Sustainable Infrastructures are built or natural systems that provide services in a manner that ensures economic and financial, social (including gender), environmental (including climate resilience), and institutional sustainability in line with the Global Goals and over the entire infrastructure lifecycle, from strategic planning all the way to decommissioning / repurposing.

Why Should Project Preparation Officials Focus on Sustainable Infrastructure?

Avoid the negative impacts of unsustainable infrastructure

The negative consequences of unsustainable infrastructure are clearly visible and show that governments and societies simply cannot afford this type of infrastructure. Cost overruns, abandoned projects, social protests and environmental degradation are only the most visible problems associated with infrastructure that is not planned and run sustainably. In the medium and long term, lock-in effects of unsustainable infrastructure will accentuate the negative impact, for example through carbon intensive energy and mobility infrastructure as drivers of climate change. The facts speak for themselves: today, the construction, development and operation of infrastructure in the energy, building and transport sector contributes to approximately 70% of global greenhouse gas emissions.⁵

Reap the benefits of sustainable infrastructure

Infrastructure services that contribute to sustainable development objectives

Sustainable infrastructure is globally recognized as key to realizing the Sustainable Development Goals (SDGs) and the Paris Climate Agreement. A recent study shows that infrastructure is linked either directly or indirectly to all SDGs, including 72% of all sub-targets.⁶ Concretely, this means: providing renewable energy to sustain economic growth and job creation; connecting cities and offering inclusive transport services, ensuring access to water and sanitation for everyone, actively restoring ecosystems and habitats to improve ecosystem services, and substituting grey infrastructure with green alternatives and nature-based solutions to name just a few.

⁴ The Solutions Lab, 2020b.

⁵ Bhattacharya, A., Gallagher, K.P., Muñoz Cabré, M., Jeong, M., & Ma, X., 2019.

⁶ Thacker et al., 2019.

Economic and business case for sustainable infrastructure services

The economic and business case for sustainable infrastructure is also increasingly recognised: Research shows that investing in resilient infrastructure for example has a net benefit of \$4.2 trillion with \$4 in benefit for each \$1 invested⁷, whereas "business-as-usual" infrastructure not optimized for resilience only returns \$1.5 for every \$1 spent.⁸ Private investors as well are increasingly recognizing the business case for sustainability and require assets to meet sustainability criteria to manage risks, respond to regulatory requirements and reveal opportunities such as untapped market potential.⁹

By integrating sustainability criteria into planning and preparation of new infrastructure assets, project preparation officials can achieve a dual objective: (i) infrastructure asset pipelines that provide essential services to societies and meet sustainable development objectives, and (ii) bankable projects that attract private capital because they fulfil investment criteria of forward-leaning private investors.

Leading Role for Project Preparation Officials

Project preparation officials are ideally positioned in the infrastructure lifecycle to play a leading role in translating laudable sustainability ambition into infrastructure assets. By taking up the challenge, they can reap the long-term benefits of sustainability and attract private capital to close the infrastructure service gap of \$18 trillion by 2040 - including investment needed to meet the SDGs¹⁰. With 70% of the infrastructure required by 2050 globally yet to be built, there is enormous potential for tangible impact.¹¹

What are the Common Features of Sustainable Infrastructure?

This Guidance Note already offered a definition of sustainable infrastructure – borrowing from The Solutions Lab – and described the benefits of sustainable infrastructure as well as the costs of unsustainable infrastructure. These descriptions, however, will not suffice for project preparation officials to actually develop and implement a strategy for ensuring sustainable infrastructure development in their daily operations. They will have to build on more specific instruments setting out the features and criteria of what sustainability actually means in practice.

Over the last years, the universe of instruments – hereafter referred to as sustainability tools - that seek to define and ultimately to govern sustainability considerations has been growing constantly. These tools can be organised in different categories, ranging from high-level frameworks and guidelines¹² to sustainability ratings and standards.¹³ GIZ's <u>Sustainable</u> <u>Infrastructure Tool Navigator</u> offers an overview of a broad range of tools, allowing users to navigate the tools by their relevance for different sectors, infrastructure lifecycle phases, etc.

⁷ Hallegate, S., Rentschler, J. & Rozenberg, J., 2019.

⁸ Global Center on Adaptation, African Adaptation Initiative, 2020.

⁹ The Solutions Lab, 2020a.

¹⁰ Global Infrastructure Hub, 2020.

¹¹ Bhattacharya, A., Gallagher, K.P., Muñoz Cabré, M., Jeong, M., & Ma, X., 2019.

¹² G20, 2019.

¹³ For an alternative categorisation of instruments see Bhattacharya, A., Gallagher, K.P., Muñoz Cabré, M., Jeong, M., & Ma, X., 2019, p. 21 with a categorisation of instruments organised by approach as well as Sustainable Infrastructure Alliance (SIA), 2020.

Against the background of the proliferation of sometimes competing frameworks and standards, sustainable infrastructure experts have started identifying criteria that different leading instruments have in common. An overview of the common denominators shall at this point suffice for project preparation officials to get a more tangible idea of what sustainable infrastructure means.

Multilateral Development Banks (MDBs) - "A Common Set of Aligned Sustainable Infrastructure Indicators"

In September 2020, the MDB Infrastructure Cooperation Platform published a report on "A Common Set of Aligned Sustainable Infrastructure Indicators".¹⁴ Taking stock of the sustainability criteria of frameworks and initiatives of three MDBs, the International Finance Corporation (IFC) as well as work by Public-Private Infrastructure Advisory Facility (PPIAF) with several standard setters, these efforts give a very solid overview of what sustainability entails for infrastructure development.

Figure 2 summarizes the 16 indicators organised along four dimensions of sustainability:



Figure 2. "A Common Set of Aligned Sustainable Infrastructure Indicators" - as defined by several MDBs under the Infrastructure Cooperation Platform in September 2020^{15}

In the final report, each of the 16 indicators is accompanied by a description of what they mean for infrastructure projects. See for example, the following two indicators on biodiversity and gender integration:

Indicator 3 - Biodiversity

Infrastructure projects should avoid negative impacts on biodiversity as a whole, while promoting conservation strategies. The environmental risks and impacts derived from an infrastructure project must be assessed, managed, and monitored during the entire life cycle in accordance with international standards.

¹⁴ Inter-American Development Bank, 2020.

¹⁵ Retrieved from: Inter-American Development Bank, 2020, p. 13.

Indicator 11 - Gender integration

Infrastructure projects should prevent and mitigate adverse impacts related to gender, providing equal opportunities to both women and men. Infrastructure projects should promote initiatives to enhance women's empowerment, advance gender equality, and stimulate women's access to resources, economic activities, and education.

So, what can project preparation officials take away from the Common Set of Aligned Sustainable Infrastructure Indicators?

If they ensure sustainability along the four dimensions of...

- Environmental sustainability and resilience
- Social sustainability
- Institutional sustainability and
- Economic and financial sustainability

...they are on track to successfully preparing sustainable infrastructure projects.

The Common Set of Aligned Sustainable Infrastructure Indicators is a valuable source for project preparation officials as it presents an emerging consensus of what sustainability entails in infrastructure development. It provides guidance on different sustainability dimensions that project preparation should consider. For project preparation officials who want to get an overview of "best practice" sustainable infrastructure projects on the ground, the UNEP Good Practice Guidance Framework¹⁶ is a valuable resource.

Towards greater consistency and alignment among sustainable infrastructure instruments

The trend towards identifying common denominators and alignment among various sustainability instruments is good news for project preparation officials who seek to mainstream sustainability considerations within their operations: the reduced complexity will make their task of navigating the universe of instruments easier, and it will lower transaction costs and help mobilise private capital.¹⁷

The momentum for further alignment is also apparent in the financial industry. Efforts to increase the visibility, transparency and ultimately the alignment of instruments include work by WWF,¹⁸ efforts by investors and benchmarking service providers¹⁹ as well as initiatives by private and public stakeholders. FAST Infra, for example, a joint initiative by public and private stakeholders, is working towards a Sustainable Infrastructure Label building on a curation of existing market-facing standards.²⁰

While these are encouraging developments, project preparation officials will for now have to deal with the abundance of instruments on the market. Ongoing alignment efforts may offer some guidance. It should be noted, however, that different stakeholder groups – such as construction firms or financial investors – are still working with often varying instruments to ensure sustainability.

¹⁶ [Editorial Note: reference will be added once it is published].

¹⁷ Inter-American Development Bank, 2020.

¹⁸ Sloan, W., Wright, K., Crowe, J., Daudon, J., Hanson, L., 2019.

¹⁹ B Capital Partners, GRESB, 2020.

²⁰ Deseglise, C., 2020.

Beyond "do no harm"-ESG considerations

Sustainability considerations as part of **risk management frameworks** – in particular through the ESG lens – have become a central feature among public and private infrastructure players and financing institutions. An ESG risk management approach is for example reflected in the IFC Performance Standards (including the financial institutions adaptation, the Equator Principles) and various MDB safeguards policies: individual projects are screened for risks before an investment / financing decision is taken. In the case of a positive investment / financing decision, identified risks are addressed through risk management and monitoring mechanisms.²¹ While implicit opportunities, such as improved financial and operational performance, are alluded to²², the focus is on risk or "screening out negative behaviours".²³

But looking at infrastructure through a sustainability lens may not only help avoid or better manage risks. It may also **reveal opportunities**, such as higher staff retention rates ("reputational opportunities") or preferential tax treatments ("legal / regulatory opportunities").²⁴

The emphasis on proactively seeking opportunities rather than merely managing risks is more prominently featured in recent sustainable infrastructure frameworks, such as the **Inter-American Development Bank's Sustainable Infrastructure Framework**²⁵ released in 2019.

How to Implement Sustainability in Daily Operations?

There are various market and institutional factors which can hinder the uptake of sustainability in daily operations. Market factors include a considerable supply of sustainability tools which may not match the demand or confuse stakeholders. Institutional factors include a lack of awareness and buy-in at different levels of the hierarchy, insufficient resources and knowledge management systems as well as institutional siloes.

The following section provides project preparation officials with concrete advise on how to identify, tackle and overcome these challenges. It outlines 5 steps as key ingredients of any **institutionalised sustainable infrastructure strategy**, irrespective of the tools that will provide the basis for implementation efforts. External support, e.g. consultation with MDBs or Project Preparation Facilities, may be helpful at different stages of the process, for instance, to support the decision / selection process of adequate sustainability standards and frameworks – referred to collectively as "**sustainability tools**" hereafter – and to kick-start a collaboration for the next steps. The right partner for longer term collaboration depends on the selected sustainability tools as well as geographic location and sector-specific requirements.

²¹ International Finance Corporation, 2012.

²² International Finance Corporation, n.d.

²³ Inter-American Development Bank, 2020, p. 17.

²⁴ Weber, B., Rendlen, B., 2020.

²⁵ Bhattacharya, A., Contreras Casado, C., Jeong, M., Amin, A., Graham, W., Silva Zuniga, M., 2019.



FIGURE 3. THE FIVE STEPS OF SUSTAINABILITY INTEGRATION²⁶

I. Identifying sustainability gaps and goals

Key activities:

- 1. **Develop a sound understanding of what sustainable infrastructure means.** The section "What are the Common Features of Sustainable Infrastructure?" of this Guidance Note can serve as a starting point. It is not necessary to digest every single framework or publication on this topic.
- 2. **Identify good and bad practice examples** from your pipeline and compare / benchmark them with your understanding of sustainable infrastructure. This will give you a rough idea of sustainability gaps and opportunities in your pipeline.
- 3. **Define the overall goals for your sustainable infrastructure strategy** based on the gaps identified. Map your "must haves" and "nice to haves" in terms of sustainability performance.
- 4. **Map internal approval policies and procedures** and identify reporting lines and decision-making processes.
- 5. **Decide on suitable sustainability tools** to achieve your goals.
 - a. Consider your geographic location and sector focus of your operations in the selection of an adequate tool.
 - b. Talk to different tool developers to gain a deeper understanding of their tool, the process, the expected outcomes, the timeline etc.
 - c. Scope and content of the tool may depend on the infrastructure lifecycle phase: Various tools are suitable both to plan and assess infrastructure projects depending on the lifecycle phase in which they are applied.
 - d. While it is preferable to start planning with the right tools as early as possible, sometimes you may be confronted with pre-defined projects. In these cases, SI tools can help assess the sustainability of early project plans before engaging in further preparation or financing of the proposed assets.

²⁶ Figure developed by The Solutions Lab.

e. Make a proper due diligence of the legal aspects linked to the adoption of different tools, e.g. ensure compliance with the data sovereignty and security.

[Editorial Note: A table illustrating different sustainability tools, outcomes and developers will be provided to guide project preparation officials in the selection process.]

Expected Outcome(s)

The institution has developed a sound understanding of sustainable infrastructure. Institutional structures have been mapped, sustainability gaps pinpointed, and the most suitable sustainability tools have been identified based on gaps, objectives and priorities.

Information Box – SOURCE:

SOURCE is the **multilateral platform for sustainable infrastructure** led and funded by Multilateral Development Banks (MDBs) and implemented by Sustainable Infrastructure Foundation (SIF). SOURCE aims to help governments to **better define**, **develop and manage their infrastructure project pipelines** for both traditional procurement and Public Private Partnerships (PPPs). The online software provides a **project preparation tool** and **data intelligence solutions**, including a map of governance, technical, economic, legal, financial, environmental and social sustainability issues. SOURCE uses sector-specific sets of questions covering all the stages of the project cycle, spanning from project definition to operation and maintenance as well as allowing the definition of specific targets to fulfil the SDGs and Paris Agreement. SOURCE **standardised project preparation templates** have been developed in close collaboration with the private sector and in line with all the key international standards (G20 Principles for Quality Infrastructure Investment, UK's Five Case Model, IADB Sustainable Infrastructure Criteria, OECD PPP Principles, APMG PPP Guide's gateway approach, PPP Risk Allocation Tool, IFC Performance Standards, etc.).

Information Box – the SuRe® Standard for Sustainable and Resilient Infrastructure:

SuRe® is a third-party-verified, global voluntary standard, developed through a multi-stakeholder approach incorporating inputs from developed and emerging nations to drive the integration of sustainability and resilience aspects into infrastructure development and upgrade by providing guidance and serving as a globally applicable common language tool for infrastructure project developers, financiers and public sector institutions. The standard integrates key criteria of sustainability and resilience into infrastructure development and upgrade, through 14 themes covering 61 criteria across governance, social and environmental factors.

II. Training, engagement and buy-in



Key activities:

1. **Develop an inclusive long-term training strategy** that addresses staff at all levels and in all departments. Finding the right trainers can be difficult. You can ask development banks, tool developers and technical assistance providers for help.

- 2. **Identify idiosyncrasies of your institution** that can influence the reception of institutional changes and capacity building efforts. Adapt your training strategy accordingly.
- 3. Ensure buy-in and ownership from executive levels as well as supervisory boards / steering committees. Clear and convincing top-down messaging is critical for successful change management.
- 4. **Be transparent** and communicate openly and clearly.
- 5. **Avoid romanticism.** Instead, adopt a pragmatic approach based on risks and opportunities to highlight the business case for sustainable infrastructure.
 - a. Showcase unproportionally high costs of unsustainable projects compared with financial returns of sustainable projects (in your region). The good / bad practice examples identified under Step I can serve as a basis for this.
 - b. Consider using a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis to demonstrate the benefits of sustainability.
 - c. Explain how and why peer institutions are integrating sustainability considerations.
- 6. **Engage the Human Resources department** to hire people and train your staff to care / be knowledgeable about the topic of sustainable infrastructure.
- 7. **Keep track of the general reception of training activities**, identify strategies that work and scale them up.

Expected Outcome(s)

The institution has developed a comprehensive and inclusive capacity building strategy to support mainstreaming of sustainability considerations. The business case for sustainable infrastructure is communicated clearly and transparently. Buy-in and ownership from the top management is secured and trickles down to all levels. Bottom-up ownership is ensured.

III. Making institutional processes fit for purpose

Key activities:



- 1. **Define smart and actionable milestones and timelines and plan your budget accordingly** to bridge the gaps you have identified during Steps I and II. Be aware that successfully integrating sustainability is a marathon, not a sprint.
- 2. **Identify the different roles and related capacities** of your institution, the tool provider or external advisors / consultants.
 - a. Dedicate specialized staff within your institution to minimise risk and maximise opportunities related to sustainability e.g. through ESG / sustainable infrastructure units.
 - b. Define the main point of contact in your organization to oversee this process with external participants. Consider engaging a certified consultant from the

sustainability tool developer organizations or an accredited professional to help in preparing the projects for assessment.

- c. Put the necessary agreements in place with all external actors (for example the sustainability tool developers, the auditors, the assessors, the consultants, translators, financiers and any other relevant stakeholder).
- 3. **Build on existing processes** and strategies before starting to create entirely new structures, especially at the early stages of sustainability mainstreaming.
- 4. **Be aware of creating silos**. While specialization is important, sustainability must be mainstreamed at all levels of the organization. Thus, communicate your goals clearly and effectively to scale up your sustainability strategy.
- 5. **Revise existing IT systems** to avoid duplication and to improve sustainability mainstreaming across all departments / agencies, e.g. consider implementing a collaborative project information management system that builds on existing IT processes.
- 6. Focus on user-friendliness to facilitate uptake of new processes.

Expected Outcome(s)

The institution has defined smart and actionable milestones to bridge operational gaps. Changes in internal processes and protocols – including specialized staff, updated IT systems and revised budget allocation – ensure that milestones are reached effectively and efficiently.

IV. Implementing sustainability tools smoothly and sustainably

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Key activities:

- 1. **Define practical steps to "operationalise" the tool** in order to ensure and maintain sustainability going forward. For example, this can include a list of concepts and questions that each project will have to complete to comply with your sustainability tool as well as rewards and penalties.
 - a. Typically, you will not have to develop these methods from scratch, as tool developers often provide and customize them to help clients "operationalise" their tools.
 - b. Where needed, tool developers or technical assistance providers often offer support in the integration process.
- 2. **Start with a piloting phase** to test the practicality of the sustainability tool or tools you have selected.
 - a. You might want to start with the low-hanging fruits and test the application on smaller projects that can be more easily managed.
 - b. Ultimately, the application on bigger, more complex infrastructure assets must be possible.
- 3. Oversee and coordinate the tool application process beyond the pilot:

- a. Define the scope and unit of sustainability integration, i.e. whether the implementation (beyond the pilot) will cover only one project, a selection of projects or projects in one sector / subsector. Be aware that the tool application process to individual projects may last from a couple of days to several months.
- b. Collect relevant information / documents (e.g. environmental impact assessments, policies and other evidence) according to the criteria and requirements of your selected tool.
- c. Invite different stakeholders on board to engage in the application of the tool, including line ministries and agencies involved in project preparation, project preparation facilities staff from MDBs as well as experts from international organisations.
- 4. **Evaluate the outcomes** of the tool application process.
 - a. Review the results to get a better understanding of your sustainability performance and most important shortcomings.
 - b. Challenge results whenever you suspect mistakes or gaps in the tool application process.
 - c. Make your results public and easily accessible to all stakeholders.
- 5. **Translate outcomes into practice** depending on the respective phase within the infrastructure lifecycle and the nature of your tool,
 - a. On the one hand, you may be able to deploy mitigation measures and optimise proposed projects (e.g. during planning, concept design and procurement).
 - b. On the other hand, you may face "*no-go*" decision moments that will lead to cancelling or halting entire projects that are already more advanced or in the construction or even operation phase.
 - c. Finally, you may build and extend a list of *"Best practice examples"* for finished projects.
- 6. Use post-evaluation feedback loops and take your results back to the drawing board to scale up successful projects, methodologies and techniques in the medium / long-term.

Expected Outcome(s)

The institution translates sustainable infrastructure tool(s) into practice, starting with smaller pilots on selected projects before targeting the entire pipeline / a specific part of it. Key takeaways are fed back into upstream phases to increase sustainability of future projects by taking successful approaches to scale.

V. Streamlining your overall sustainable infrastructure strategy



Key activities:

1. **Continuously identify "lessons learned"** after going through the phases described in steps I – IV. Set aside enough time and resources for this process.

- 2. Create a committee of key users to gather their feedback and evaluate if all their needs in terms of reporting, functionalities, and deliverables were considered.
- 3. **Assess your overall sustainable infrastructure strategy** along categories such as partnerships, design of the piloting phase, data collection and management as well as improvement of future project preparation efforts:
 - a. Overall, how helpful was / were the chosen tool(s) in delivering on sustainability aspects?
 - b. What are persisting challenges or context-specific barriers to implementation and how can you overcome them?
 - c. How was the process received within your institution?
 - d. How can you increase efficiency and efficacy of the process?
 - e. Did you manage to attract private investors?
 - f. What partnerships could help scale your sustainable infrastructure strategy?
- 4. **Consider engaging in peer-to-peer-exchanges** to receive feedback and share your lessons learned.

Expected Outcome(s)

The institution has set aside time and resources to reflect on its institutional sustainable infrastructure strategy and to evaluate the process with a view to efficiency and efficacy. This includes but is not limited to the reception of the sustainable infrastructure strategy within the organization, opportunities for new partnerships and monitoring of the pros and cons regarding the selected sustainability tool(s).

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