Developing and Accelerating Procurement Practices to Enable Sustainable and Resilient Infrastructure
ABOUT ICSI

The International Coalition for Sustainable Infrastructure (ICSI) was founded in 2019 by The Resilience Shift, the American Society of Civil Engineers (ASCE) and its ASCE Foundation, the Institution of Civil Engineers (ICE), the Global Covenant of Mayors for Climate & Energy (GCoM), WSP and LA Metro, among others. It aims to bring together the entire value chain of infrastructure and unlock the opportunity of using engineers as a driving force for positive impact and climate action. It will give engineers a voice in ensuring that we pick the right infrastructure projects to fund and then design and build them with sustainability and resilience in mind from the outset.

ICSI delivers industry change by engaging individual members and their organisations through Action Tracks that seek to understand and address the gaps and barriers to the development of sustainable and resilient infrastructure. ICSI responds with specific actions to address these challenges, and engages stakeholders who are instrumental in delivering actions and adopting new resources, practices and behaviours.

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1. INTRODUCTION

The procurement phase presents perhaps the most critical opportunity to deploy sustainable infrastructure; procurement processes that consider social, economic and environmental factors are able to drive sustainability across the infrastructure lifecycle.

Procurement occurs in some shape or form at all stages of an infrastructure lifecycle (Figure 1), but there are several key entry points that have the greatest potential to improve the sustainability and resilience of a project. The planning phase is paramount, and the earlier in a project that sustainability and resilience are considered and addressed, the better. Once a project is planned and financing mechanisms have been defined, delivery of infrastructure should be undertaken in a cost-efficient way that locks in sustainability and resilience requirements.

ICSI’s Position Paper ‘A Review of the Landscape of Guidance, Tools and Standards for Sustainable and Resilient Infrastructure’ has identified that there is a lack of advice for implementing sustainable and resilient procurement practices across the whole infrastructure lifecycle. This short paper expands upon the identified gaps around procurement that were identified in this Position Paper to develop sustainable and resilient infrastructure (Section 2). Section 3 then provides the potential use cases that have been identified to help embed procurement guidance, tools and standards. Finally, Section 4 puts forward several actions for ICSI to implement in order to address the identified gaps.

Figure 1: ICSI’s infrastructure lifecycle
2. UNDERSTANDING THE GAPS

The following sections provide some more insight into the gaps that ICSI has identified within the procurement space.

There is a lack of awareness of existing procurement guidance

The landscape analysis of existing guidance, tools and standards presented in ICSI’s Position Paper has identified examples of resources available, or in development, that provide some support to ensuring a sustainable and resilient approach to procurement. These include:

- FHWA P3 Toolkit
- ASCE – Sustainability Standard (in development)
- ASCE – Sustainable Procurement for Infrastructure
- ISO 20400 – Sustainable Procurement: Guidance
- UN Environment – Global Review of Sustainable Public Procurement
- IISD – The Role of Public Procurement in Deploying Sustainable Infrastructure
- The World Bank – Sustainable Procurement: An introduction for practitioners to sustainable procurement in World Bank IPF projects
- GCA – Climate Resilient Infrastructure Officer: Handbook, Knowledge Module on Public Private Partnerships and Climate Resilient Infrastructure (in development)

It should be noted that most available resources focus on sustainable procurement and do not explicitly mention resilience requirements.

However, infrastructure practitioners have reported that they often have to start from scratch when trying to implement sustainable procurement in projects. Although some guidance exists, it is still not widely adopted and it needs to be made more visible to infrastructure practitioners across the lifecycle.

Sustainability and resilience must be embedded within procurement practices across the lifecycle

Procurement happens at several stages of the infrastructure lifecycle. However, entry points for sustainability and resilience should be identified from the early stages of development to ensure requirements are embedded as early as possible and followed through in the later stages. The ICSI White Paper ‘Green Recovery and Finance for Sustainable Infrastructure’ argues that consideration should be given to procurement and contracting approaches at feasibility stage to create capacity and requirements for pre-development activities.

Lack of communication and common understanding of sustainability and resilience goals among infrastructure stakeholders across the lifecycle has traditionally created barriers to implementation and this also applies to procurement practices.

For example, in the infrastructure delivery phase, even when intent is included in procurement documents, sustainability and resilience concepts are new and often inconsistent with established operating procedures. Therefore, they may not be fully considered during the bidding phase due to their divergence from standard specifications. Combined with a lack of incentives to achieve sustainability and resilience targets, this could result in implementation challenges during the project.
To accelerate the incorporation of sustainability and resilience into infrastructure, requirements for both need to be placed in contracts, and Requests for Proposal should address the expectation for their consideration and integration through the addition of specific requirements. Ensuring that these requirements are met should then constitute part of the award decision, in the same way that safety, cost, and schedule do – otherwise, there will be slow incorporation. There is an opportunity to incentivise organisations with sustainable practices and policies, and to adopt or develop evaluation criteria to assess sustainability and resilience within an organisation. In parallel, there is a need to build the capacity of practitioners involved in infrastructure procurement and improve their awareness of how sustainability and resilience can be integrated in procurement practices.

Furthermore, a shift in the overall approach to procurement is needed, away from a series of individual projects procured independently in the market. Adopting a systems-thinking approach to procurement can enable better sustainability and resilience outcomes, and realise the greatest benefits from infrastructure development by appropriately valuing the holistic benefits delivered.

**Sustainable supply chain procurement presents a substantial opportunity to focus and control spend**

ICSI members have identified that, typically, the purchase of materials far exceeds the cost of labour, both in design and construction, and is often the most significant cost to an infrastructure project. Therefore, there is a substantial opportunity to ensure that supply chains use sustainable technologies and green materials to enhance resource efficiency and promote circular economy principles. This can also generate cost reductions and broader benefits realised in the O&M phase while making a positive contribution to the sustainability of the overall system. Control of those procurement costs, and ensuring that spending is focused on sustainability and resilience, is therefore critical, and should occur early in the infrastructure lifecycle.
3. DEVELOPMENT OF USE CASES

Creating a common understanding of key entry points for sustainability and resilience, and how they can be incorporated into the procurement of infrastructure projects, will require the development of use cases and supporting documentation, such as contract templates.

These tangible and practical examples will enable practitioners to embed sustainable and resilient procurement in their decision-making and processes. Additionally, use cases can provide an understanding of the potential challenges and how to overcome them.

ICSI has defined a template for the development of use cases (Figure 2). An initial set of use cases has been crowdsourced from the Guidance, Tools and Standards Action Track members with relevant industry knowledge and experience (Table 1).

This set of use cases is not exhaustive, and ICSI will seek to expand it through continued contributions from its members.

Figure 2: Use case development elements
Table 1: Initial set of use cases for embedding sustainability and resilience into procurement across all stages of the infrastructure lifecycle

<table>
<thead>
<tr>
<th>ACTOR (WHO)</th>
<th>NEED (WHAT)</th>
<th>BENEFITS (WHY)</th>
<th>SOLUTIONS (HOW)</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner, Design team, Contractor</td>
<td>Need to identify appropriate procurement mechanisms that drive the delivery of sustainability and resilience objectives.</td>
<td>Ensures the delivery of sustainability and resilience objectives by incentivising, enforcing, and encouraging through the project structure and payment mechanisms.</td>
<td>Public-Private-Partnerships (PPPs) are increasingly used as one solution to deliver infrastructure. PPPs are important to sustainability and resilience because they incorporate incentive frameworks, are output-focused, have longer contract duration, can promote an efficient recovery after disasters, and risk is transferred through a well-established approach that can attract investment in innovative resilience measures.</td>
<td>PPPs offer one mechanism to deliver these benefits. However, other approaches which incorporate similar elements might also be considered.</td>
</tr>
<tr>
<td>Owner, Design team, Contractor</td>
<td>A common understanding of sustainability and development goals, intent and project requirements through procurement agreements to implementation.</td>
<td>Ensures that sustainability and resilience embedded in procurement documents are carried forward in implementation.</td>
<td>Develop a framework to review and monitor the implementation of procurement requirements.</td>
<td>Such a framework does not appear to exist at present.</td>
</tr>
<tr>
<td>Design team, Contractor</td>
<td>Need to ensure sustainability and resilience requirements locked into scope at the feasibility, structuring and preparation phase are well understood by all that need to follow them.</td>
<td>Supports the implementation of sustainable and resilient measures and ensures they do not become deprioritised.</td>
<td>Develop and promote clear and concise guidance and criteria to help create a common understanding of requirements.</td>
<td>Guidance on how to embed sustainability and resilience within scoping documents, institutional and procurement arrangements is limited, and there is little awareness of what does exist.</td>
</tr>
<tr>
<td>Owner, Design team</td>
<td>Need to lock in sustainability and resilience requirement into project scope.</td>
<td>Ensures sustainable and resilient measures are planned for, assessed, and included within financial arrangements and contracts.</td>
<td>Develop and promote clear and concise guidance and criteria to help create a common understanding of requirements.</td>
<td>The IDB Framework to Guide Sustainability Across the Project Cycle offers criteria that could be used by project stakeholders to evaluate whether they are taking appropriate sustainability measures at this phase. There is a lack of metrics to quantify these criteria.</td>
</tr>
<tr>
<td>Contractor</td>
<td>Establish a supply chain that is sustainable.</td>
<td>Reduce carbon footprint. Best if addressed during procurement as a contractual requirement between owner and contractor, however, during construction, there is another opportunity to identify sustainable vendors.</td>
<td>Guidance for contractors to reference when establishing sustainable supply chain.</td>
<td>Owners may choose to publish a pre-approved vendors list to encourage engagement with companies that align with sustainable practices.</td>
</tr>
</tbody>
</table>
4. PROPOSED ACTIONS

I. Leverage, complement and promote existing guidance on embedding sustainability and resilience in infrastructure procurement across all stages of the lifecycle – ICSI will endorse and promote existing or emerging guidance in this area and complement it with supporting guidance and templates as appropriate. The publication of the ICSI catalogue of Guidance, Tools and Standards\(^{15}\) will increase awareness of existing guidance, tools and standards relating to sustainable and resilient infrastructure procurement.

II. Collate and disseminate examples of sustainable and resilient procurement ‘in action’ – ICSI will collate, develop and disseminate case studies, based on the use cases identified and others that will be added, to help embed sustainability and resilience into infrastructure procurement. For example, the Construction Industry Institute has performed research on sustainability during construction and Together for Sustainability\(^{16}\), which deals with the chemical industry supply chain. ICSI will also seek to support a pilot with an infrastructure organisation aiming to develop a template for inclusion of sustainability and resilience principles into procurement documents.

III. Convene roundtables with infrastructure practitioners – ICSI will convene roundtables with infrastructure practitioners to share available resources and discuss barriers to sustainable and resilient procurement. It will leverage, for example, the work of the Sustainable Infrastructure Community of Learners\(^{17}\) to share knowledge and guidance around sustainable and resilient procurement approaches.
References
