

Building expertise on sustainable and resilient infrastructure

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Contract perspective:

- Coherent treatment of cross-cutting criteria
- Focus on key procurement components:
 1. Project strategy
 2. Delivery model
 3. Tendering
 4. Contract preparation

Hello and welcome everybody. This is the second section of the sustainable infrastructure procurement module. We shall be talking about the pre-engagement stage of procurement up until the acquisition stage, essentially the procurement strategy, the life-cycle approach, feasibility studies and development of the all-important project strategy. The contract perspective discussed in the first section stressed a) the need for a coherent and integrated treatment throughout procurement of difficult-to-specify cross-cutting sustainability criteria. And b) to ensure coherency the need to focus on key components of the procurement system. These are: -the project procurement strategy, the project delivery model and the procurement management (mainly tendering) that are defined during acquisition; -contract preparation and the award of contract. The reason for the focus is fairly obvious. Public authorities such as the US Department of Energy for example say that the procurement as a whole “is compromised if sustainability requirements are not enforced contractually”.

Notes

Summary



0m 05s



General approach:

Beyond business-as-usual life-cycle best practice to align:

- Internal: project implementation by the main project participants
- External: project with the community's holistic strategic objectives
- Internal + external + project: sustainable performance & management requirements

Strategically, each component of procurement needs to ensure that sustainability considerations expressed as credible criteria are addressed using appropriate procedures and result in enforceable and legally binding contractual obligations. The first section also discussed the general approach for incorporating sustainability into project procurement. It is to extend the normal best practice, business-as-usual project management and procurement procedures. Consequently, the SuRe standard requires proactive engagement with sustainability by identifying objectives that go “beyond business-as-usual practice”. The procurement strategy should be based therefore on extending best practice through alignment of three types, namely: -internal alignment within a project of implementation of the main participants; -external alignment of the project with the holistic strategic objectives of the community in which the project is located; -alignment of the project and of the internal and external aspects with sustainable performance and management requirements.

Notes

Summary





Delivery models - project developer contracts with:

- - Single entity (contractor + project manager + suppliers + subcontractors,) or with
- Main project participants

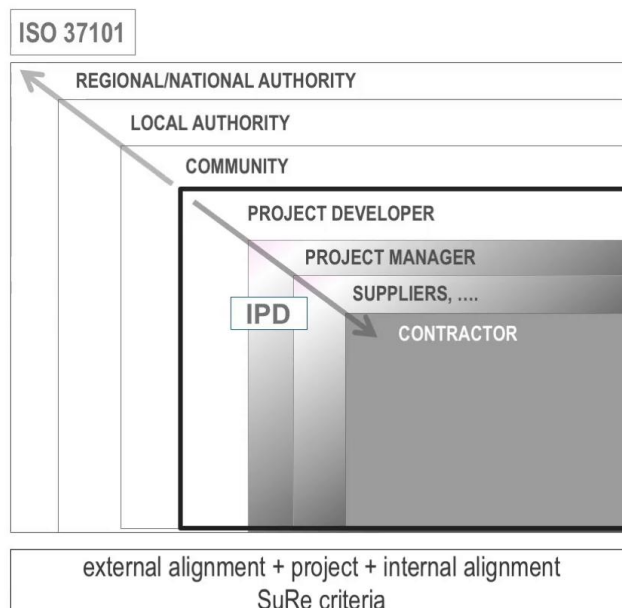
These alignments are based on: -integrated project delivery (or IPD) to align participants' objectives; -the ISO 37101 sustainable community management system standard to align the community's objectives in a multi-governance context; -the SuRe criteria. Please note that IPD implies an integrative high-performance manner of working with interaction and collaboration. This contrasts with alliancing and similar project delivery models that formalise interaction and collaboration using contractual incentives.

Notes

Summary



1m 58s



This overall approach for the procurement strategy is illustrated in the figure showing alignment of external multi-governance and internal project participants. The graduated shading is used to illustrate the internal organisation within the project of the main project participants. As will be discussed, the project developer can enter into a contract with a single entity comprising the contractor, the project manager, suppliers, and sub-contractors (and even facilities managers). At the other extreme, each of the main project participants contracts directly with the developer. As illustrated at the bottom of the figure, the overall success of sustainable procurement is judged in terms of the SuRe standard's criteria, supplemented possibly by additional criteria for the internal and external alignments.

Notes

Summary





“**Business-as-usual**” initiation following identification:

- Developer - project outline based on need, purpose & life-cycle objectives
- Required - analyses of needs, solutions, cost-benefit, risk + procurement plan

For “business-as-usual” procurement, an infrastructure project often emerges following an extensive identification phase that considers master plans of various types. Pre-engagement then starts with the initiation stage when the developer outlines the project based on a need, a defined purpose and overall objectives. Initiation requires analyses for needs, solutions, cost-benefit, and risk together with a project procurement plan giving a preliminary overall programme. An assessment of social value opportunities may be necessary.

Notes

Summary





Sustainable procurement requires a life-cycle Perspective (full life-cycle analysis is inadequate):

- Adopt life-cycle 'approach' (LCA) especially for infrastructures as to include the supply chain
- Little standardisation (*"integrate programmes, activities, management & data"*)

Sustainable project procurement requires implementing a life-cycle perspective. A full life-cycle analysis which quantifies the environmental impacts of materials and energy use related to constructing and operating a project's design through its life-cycle, while helpful for providing acquisition criteria, is inadequate since many other sustainability aspects are not included. The solution is to adopt a life-cycle 'approach' (LCA for short). LCA is of special importance for infrastructure which is often implemented on a project-by-project basis where the focus is on inputs and the supply chain is not considered. While life-cycle approaches have not been standardised, they have been described comprehensively. They claim to provide "full account of the social and economic repercussions, the flow of resources and environmental impact through every phase of a project's life cycle". They do this by integrating programmes, activities, management systems, and data requirements.

Notes

Summary



4m 01s



Recommended:

- LCA report + business case for sustainability
- Summary of how SuRe requirements will be satisfied
- Assessment of scope & objectives: ESIA + interpretation in relation to impacts
- Demonstrations of life-cycle impacts (negatives minimised: positives identified)

Recommended therefore is a document describing the LCA that will be used consistently throughout the project and a report giving the business case for sustainability. SuRe's LCA requirements for example call for at least an assessment of the project scope and objectives, an Environmental and Social Impact Assessment (ESIA) and its interpretation in relation to life-cycle impacts, and demonstrations of how negative impacts are minimised and positive impacts are identified.

Notes

Summary



5m 02s



Verify:

- Overall economic & social viability: solutions; concept design; sites; time & cost; liabilities; financing & for managing O&M; environmental & social impacts
- Studies sufficient to outline LCA & ESIA & to determine the need for an ICP.

How these will be implemented needs to be summarised at the initiation stage. The normal “business-as-usual” tasks during the subsequent pre-feasibility or initial studies before full-scale feasibility studies will include verifying the overall economic and social viability of the project based on an overview of: optional solutions; the concept design; possible sites; time and cost constraints; pre-existing liabilities; responsibility for financing and managing future operation and maintenance; and environmental and social impacts. The work should be sufficient to plan and outline the LCA and the ESIA and to determine the need for an Informed Consultation and Participation (ICP) process for stakeholders.

Notes

Summary



5m 31s



Internal:

- Integrated project team for early involvement: flexible IPD implementation incorporated into business-as-usual procurement
- Single-entity IPD delivery model requiring: team selection before design starts
- Gateway reviews for public procurement

At this stage the developer has to decide the internal project arrangements as outlined in the figure shown previously. The key decision is whether or not to seek internal alignment of participants' objectives by procuring the works using single-entity IPD as opposed to using a more flexible arrangement. Both arrangements aim to appoint some form of IPD team at an early stage so that informed decisions have the greatest effect. The more flexible IPD schemes can be implemented by adjusting business-as-usual procurement processes and contractual arrangements. This is not the case for project delivery based on a single-entity IPD. This requires significant changes to procurement procedures, such as for example, a project brief or a call for proposals based on initial studies and before design starts in order to launch selection of an IPD team during pre-engagement instead of during acquisition. Most public agencies which use single-entity IPD also require gateway reviews at predefined points in procurement, because single-entity IPD that integrates design and construction throughout the pre-engagement, acquisition and implementation phases using a preselected project team could harm the objectivity of competitive acquisition.

Notes

Summary



6m 07s



Basis for project strategy development to justify:

For external alignment, according to the ISO 37101 standard, initial studies should include a relevance analysis to establish that the need, defined purpose and overall objectives of the project are aligned internally with the participants’ objectives and externally with the community’s context and objectives. For overall alignment with sustainability criteria, the analysis should include approximate performance levels for SuRe criteria selected on the basis of a preliminary materiality assessment in order to establish that critical aspects such as energy use can probably meet targeted performance levels. Performance with respect to criteria that measure internal and external alignment should also be included. SuRe criteria may be adequate for this purpose. For example, for internal alignment, criterion G1.1 requires a project organogram and documentation demonstrating a clear separation of roles; for external alignment, criterion G1.6 requires an analysis of possible synergies and negative cumulative impacts with other actual or planned projects. Subsequent pre-engagement stages following initial studies with or without the selection of an IPD team end with a conceptual design and a feasibility studies report which is the basis for the all-important project strategy.

Notes

Summary





Basis for project strategy development to justify:

- Implementation
- Most appropriate delivery model

Report accurate to +/- 20%

Feasibility studies therefore aim to: a) justify implementing a project by verifying its overall economic, social and environmental viability; and b) become the basis for the development of the project strategy by providing information to justify the most appropriate project delivery model. The feasibility studies report would be expected to cover business-as-usual aspects similar to those for the initial studies but aiming for a significantly greater detail (an accuracy of +/- 20%) and including the roles of the key project participants.

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External:

The report should also detail the alignment contributions. For internal alignment, the IPD's digital virtual construction model (better known as BIM for building information management) which allows design solutions to be refined continuously is a key consideration. Independent of the type of IPD that has been decided, an important benefit is that the model that can be used or handed over at the end of construction for use during operation. The model's capabilities and its integration with product declaration databases are important not only during construction but also during operation (because they support the monitoring of complex aspects such as construction-site waste and the resources used for off-site pre-fabrication and on-site operation). The feasibility studies should therefore establish a BIM protocol detailing the requirements placed on the model, for example its availability and updating. Regarding external alignment of a project with community objectives, a common understanding is needed of project objectives, the project's context, its relevance in meeting perceived needs, its scope in terms of impact on the community, and its impact on a larger regional scale.

Notes

Summary



9m 30s



Overall:

- Include information for each relevant SuRe criterion
- Time-bound practice commitments
- Proof of compliance

Achieving this understanding requires competent and informed community organisations which are responsible for procurement, for managing projects and for implementing management systems. The feasibility studies should therefore review the various organisations, possibly by extending the Informed Consultation and Participation process that usually only responds to funding agency performance standards to mitigate impacts on local communities. With regard to overall alignment with sustainability criteria, SuRe certification can be sought at the pre-engagement, as-built and operation phases. For pre-engagement certification, since detailed designs will not be available, information is needed to document time-bound commitments to intended practice. A similar requirement, namely demonstration of retrospective or retroactive compliance with criteria relating to any earlier stage of development, applies for certification starting at a later stage. To allow for the various certification timetables, but more importantly to ensure that sustainability considerations have been examined comprehensively independently of any envisaged certification the feasibility studies report should include the information needed to prepare time-bound statements of future practice and demonstrations of proof of compliance for each of the relevant SuRe criteria..

Notes

Summary



10m 52s



Overall:

- Include information for each relevant SuRe criterion
- Time-bound practice commitments
- Proof of compliance

This information will include the output from special tools covering aspects for which little hard law exists. SuRe aims to fill the gap using tools that are mainly developed in the private sector. For example, assessments of business continuity risk and of financial sustainability are required. Public procurement on the other hand tends to focus on debt sustainability so a broad range of tools may be required.

Notes

Summary



12m 22s



Materiality assessment to determine relevant criteria:

- Pre-feasibility information sufficient
- If certification is envisaged, information to be adjusted to enable stakeholder judgement

SuRe certification requires a stakeholder-driven materiality assessment of likely issues to identify relevant criteria. The preliminary materiality assessment undertaken during pre-feasibility will be sufficient. If certification is envisaged, it is necessary to adjust the SuRe information so that the impacts of all likely issues can be presented in a form that allows a wide variety of stakeholders to pass judgement as to the importance of each issue.

Notes

Summary



12m 47s



For a strategy manual - a key step:

- Basis for the delivery model & contracting
- Brings together decisions for procurement aspects
- Must be holistic - should not treat each procurement aspect in isolation
- Difficult to reverse decisions at a later stage

Sustainable procurement: does a key decision for a sustainability requirement create additional risk?

- Use risk profiles for each SuRe criterion

Project strategy development (in the form of a comprehensive project strategy manual) is the most important pre-engagement stage because: - First, as noted earlier it provides the basis for deciding the delivery model, contracting principles and the accompanying updating of the project programme and the procurement plan; - Second, it brings together the key decisions for each of the sustainable procurement aspects to arrive at an overall strategy; -Third, it uses an holistic approach to avoid treating each procurement aspect in isolation since, for example a good design can be negated by the inadequate treatment of other aspects such as stakeholder engagement; -Finally, it recognises that it is very difficult to reverse at a later stage a decision for most if not all aspects so great care is needed in deciding a strategy. A straightforward process to identify the key strategic decisions that need to be taken for each aspect of procurement is to use the risk profiles of SuRe criteria. The risk profiles are described in terms of the procurement aspect, the type of construction risk, the contention that gives rise to the risk, and the party or parties to whom the risk is allocated.

Notes

Summary





SuRe criterion	Criterion type	Sustainability risk	Procurement aspect	Risk type	Risk allocation
G1.4	MC	Conformance to design KPIs [Contention: KPIs do not reflect defined goals & objectives]	Design	Behaviour	Developer or Contractor / IPD team

An extract from the table of risk profiles is shown. First, a risk is allocated to the party that is best able to manage the risk effectively. Second, risk allocation does not include the risk of non-performance of criteria where performance requirements are specified in contract documents (this will also be discussed in the next section).

Notes

Summary



14m 26s



- For 50% of SuRe criteria
- Risks of all types & for most aspects
- Mainly developer risks
- Business-as-usual risks not sustainability risk determines the delivery model & contracting

To manage sustainability aspects:

- Treat normal & beyond best practice aspects separately

The complete risk table that includes risks arising from the internal and external alignment which is available in the module's resources demonstrates that: - about one-half of SuRe's criteria give rise to risks which would not normally arise in business-as-usual procurement. - these risks are of all types arise and cover most aspects, highlighting the challenging nature of sustainable procurement. - it is mainly developers who are required to assume additional sustainability risks. - the strategy for an infrastructure project is largely determined by business-as-usual aspects. In other words, sustainability risk considerations rarely lead to changing the delivery model and contracting (the next section makes the same conclusion regarding sustainability criteria). What therefore does one do to manage sustainability risks? Some authorities argue that it is unnecessary to handle beyond industry best-practice risks using separate sustainability provisions and specifications in project acquisition criteria and in contracts. This is because business-as-usual methods and procedures can keep in step with the evolution of sustainability concepts and requirements.

Notes

Summary





- For 50% of SuRe criteria
- Risks of all types & for most aspects
- Mainly developer risks
- Business-as-usual risks not sustainability risk determines the delivery model & contracting

To manage sustainability aspects:

- Treat normal & beyond best practice aspects separately

However, the approach taken here is that sustainability considerations for both business-as-usual practice and beyond best practice should be treated separately from business-as-usual considerations. This is because sustainability requirements, design solutions, materials, and construction methods vary considerably and are often project specific. Sustainability requirements must therefore be specified precisely and handled rigorously within somewhat inadequate 'hard law' legal frameworks, as will discussed in the next section.

Notes

Summary



16m 04s



- A coherent strategy for sustainable infrastructure procurement builds upon business-as-usual
- In addition to alignment with SuRe criteria, the internal alignment between project participants & the external alignment of a project with community objectives must be considered

We have seen that a coherent strategy for the procurement of sustainable infrastructure is to build upon business-as-usual procedures.

Notes

Summary



16m 30s



- This approach allows identification of key outputs for project initiation & the subsequent pre-feasibility studies
- Pre-engagement ends with development of the all-important project strategy, notably a risk analysis
- Sustainability risks are best managed by specifying separately the requirements

We have done this by considering, in addition to alignment with the SuRe sustainability criteria, the internal alignment between project participants and the external alignment of the project with community objectives. This approach allowed us to identify the outputs that need to be generated during the initial stage and the subsequent pre-feasibility studies stage. Pre-engagement ends with development of the all-important project strategy that builds upon earlier studies to generate key outputs, notably an analysis the types of risks that arise upon introducing sustainability considerations. The next section will discuss how these risks are addressed during project acquisition when the delivery model, tender procedures and contract provisions are defined.

Notes

Summary



16m 38s