



General

29 Briefing Paper: FEED contracts and the consequences for bankability

Investing in Energy Transition Projects
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1. Introduction and purpose

The focus of this Briefing Paper is the role of front-end engineering and design (**FEED**) packages in the development of large scale projects or works packages, in particular, the interfaces and interdependencies that such FEED packages will have within such projects.

This Briefing Paper considers FEED to be the development of designs and engineering for a project or works package to 30% before the tendering or award of that project or works package. The scope of such FEED activities will typically include a range of critical deliverables, including deliverables that may ultimately be provided to works package Contractors as Principal supplied information that may be used to determine final design, pricing or commercial terms or may be relied upon by the relevant Contractor.

In this context, the purpose of this Briefing Paper is to:

- explain the potentially detrimental consequences of errors in the FEED deliverables
- propose strategies that manage and/or mitigate against the risks posed by the potential for errors in FEED deliverables.

2. Nature of the FEED

2.1 The purposes and outcomes of FEED

FEED has three primary purposes:

- to provide a design framework within which detailed designs can be developed and equipment procured in a coordinated manner
- to permit the design process to start so that approvals, early works and land procurement can commence ahead of detailed design
- to firm up costing.

FEED deliverables generally fall into the following categories:

- those that are predominately objective data with no professional interpretation, such as a topographical study
- those that are a mixture of objective data and professional interpretation
- those that are predominately a professional interpretation or service, such as geotech, designs and specifications.

In some cases, FEED deliverables will also embed design decisions that are then carried through tender processes, and ultimately may be incorporated into the detailed designs for works packages.

2.2 Considerations for the Principal

While FEED will typically play an important role in the development of a project or works package, the Principal must be mindful of various project-specific characteristics when determining its FEED approach and use of FEED deliverables, including:

- undertaking FEED requires significant development funding, often before a final investment decision has been made
- the capital cost of the project will often be high in comparison with the low liability caps and professional indemnity insurance limits achievable under the FEED contracts
- the same FEED deliverables may be used/relied upon by numerous Contractors.

In these circumstances, the Principal must consider how the risk of FEED errors that cause material performance failures, cost increases and delays can be managed and/or mitigated.

3. Managing and/or mitigating the risks posed by the potential for errors in FEED deliverables

3.1 Understanding the potential for error and the consequences

The best way to manage and/or mitigate a risk is to understand it. Therefore, an important part of scoping each FEED contract should be an analysis of:

- which decisions to be made, actions recommended, or deliverables submitted, by the Contractor under the relevant FEED contract are critical to the project or works package
- the consequences of potential errors made in connection with these critical FEED decisions, recommendations or deliverables
- the processes required to be implemented by the project to monitor and review these critical FEED decisions, recommendations and deliverables, as detailed designs continue to be developed under the FEED contract
- the risk mitigation strategies to be implemented in relation to each critical FEED decision, recommendation and deliverable. For example, among the first deliverables to be obtained from the ultimate works Contractors might be a verification study in which the critical FEED decisions, recommendations and deliverables are evaluated and either confirmed or amended.

Above all, the management and/or mitigation of the potential for errors in FEED deliverables should be addressed in a specific and traceable manner, guided by a clear overarching strategy, so that the Principal has confidence that FEED errors can be addressed without the project incurring significant delays and additional costs.

This is particularly important because, as noted below, it may not be practicable, either from schedule or budgetary perspectives, to have the FEED fully verified by future works Contractors. This means that it will be necessary for works Contractors to place some degree of reliance on certain FEED decisions/deliverables that have been undertaken or procured by the project delivery team, increasing the potential significance of any errors in those FEED decisions/deliverables.

If works Contractors were precluded from placing reliance on those FEED decisions/deliverables which have not been verified, it is likely that works Contractors will:

- refuse to assume any risk associated with those FEED decisions/deliverables
- add a significant premium to assume risk associated with those FEED decisions/deliverables
- require additional time and cost to reperform or verify those FEED activities (for example, duplication).

3.2 Peer review

The first risk mitigation step is to implement processes that minimise the possibility of errors. This is best done through a peer review of the critical FEED decisions/deliverables by the works Contractor, or if applicable, a lenders' technical advisor.

3.3 Contractual allocation

It may not be practicable, either from schedule or budgetary perspectives, to have the FEED fully verified by future works Contractors. Therefore, a mixture of different contractual strategies that transfer risk and responsibility away from the Principal should be adopted, including no reliance by works Contractors. Some of these are discussed below, while the challenges of others are noted.

Novation of FEED contracts

Novating the FEED contracts to future works Contractors may not be possible or appropriate due to:

- the number of works Contractors relying on the same FEED deliverables
- the number and identity of works Contractors not being known until formal procurement processes have been completed
- the indivisibility of the FEED deliverables, in that many are likely to be interwoven and not capable of neat dissection for the purposes of novation
- the low liability caps and professional indemnity insurance limits provided under the FEED contracts.

Verification of FEED deliverables during the tender period

Verification of the FEED deliverables might be possible to some extent during tender processes, but only where elements can be verified without undermining the ability of the Principal to compare and evaluate tenders (for example, requests for verification might lead to tenders being subject to numerous assumptions, qualifications, caveats and differing interpretations).

If this is feasible then it should be expressly addressed in the tender materials and the relevant works contracts with an associated risk transfer. The tender period will need to be long enough to allow Contractors time to allocate resources and carry out verification.

Verification of FEED deliverables at defined milestones

Verification of the FEED deliverables should be possible during the development of detailed designs. If this is feasible, then it should be expressly addressed in the tender materials and the relevant works contracts with an associated risk transfer.

The goal of the Principal should be that the majority of FEED deliverables will have been verified by defined hold points in the design development process and before the relevant works are constructed or equipment procured.

As part of the scope of each FEED contract, the analysis of critical FEED decisions/deliverables could also include the development of a verification Programme that identifies the point at which each FEED decision will be capable of verification by a works Contractor.

3.4 Insurance

It is important that early, proactive discussions take place with the Principal's risk management and insurance advisors so as to evaluate how the above risks can be managed by the proposed captive insurance arrangements.

How to contact us



If you have any questions about this paper, please contact the editor, Damian McNair, Partner, Energy Transition.

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