



White Paper 2019-12

How To Properly Manage the Transition from FEED¹ to Project Execution in combined FEED and Execution Contracts

An increasing number of EPC contracts combine both FEED¹ and project execution. In this context, we observe an increasing number of situations where Contractors move from FEED to execution in a continuous manner without checking the comprehensive maturity of the proposed solution. This then inevitably creates substantial issues during project execution. In this White Paper we explore the good practices that should be applied in this situation, and the reasons why.

¹FEED is a common acronym in Oil & Gas and stands for Front-End Engineering Definition, and is more or less equivalent to Detailed Feasibility at least for the technical part

Introduction

The trend to have EPC contracts combining both FEED and execution – generally with some contracting milestone between those two phases - is a strong trend in particular in the Oil & Gas industry, following the recent horizontal integration within the industry transforming Contractors into solution providers. This contractual strategy also often responds to expectations regarding execution acceleration, as there is only one contracting cycle for the Contractor instead of a separate bid-to-award process for execution.

Risks and opportunities associated with the combined FEED and execution approach

In general, this approach can only be used in industries where the process and the solutions are proven. It is far more difficult to implement in innovative projects with unproven solutions, or where the regulatory approval cycle may be on the critical path.

This approach presents a number of opportunities related to:

- the continuity of the Contractor team throughout the design cycle up to execution,
- the fact that the design is adapted to the Contractor's capabilities, products and equipment,
- the possibility to anticipate the procurement of long lead items,
- the removal of a bid-to-award cycle that uses resources and delays schedules by a number of months.

Obviously, this contractual approach also carries some risks:

- It considers that unless there are substantial surprises during the FEED stage the project will move forward,
- It supposes that the Contractor has very good capabilities both in front-end engineering and in detailed design, procurement and construction, which implies a very large and mature Contractor and therefore removes opportunities to optimise the

contractual strategy and use local Contractors or Contractors specialised in some areas of the process

- The contract may include some clauses for adjustment of price and schedule at the end of FEED although increasingly Owners consider that the final price should remain within the bounds of the initial quote (with limited adjustment) before the start of the FEED stage, in particular in industries using mature solutions. This is based on the assumptions that layout and facility optimisations during FEED should compensate inaccuracies in the preliminary design,
- If there is a clause for adjustment of price and schedule, the Contractor may use this to include additional margin on time and cost that can benefit it later
- The Contractor may underestimate the cost of the EPC phase at the time of committing to the price of the FEED + EPC leading to a desire to cut corners and squeeze subcontractors to secure its margin to the detriment of project success

for the Owner

Seamless transition from FEED to EPC can lead to Contractor and Owner accepting to move past the Final Investment Decision (FEL3) gate with insufficient maturity of the project (“we-can-always - catch -up-later” syndrome). Thereby, the desire for acceleration combined with an already awarded contract and mobilised team tends to remove the effectiveness of the usual governance control point and decision gate at the end of FEED. In the extreme, the project schedule can even be optimised in such a way that execution can be actually thought to start at the beginning of FEED.

In this White Paper we will particularly focus on this last item related to governance and loss of an effective split between FEED and execution..

The desire to combine contractually FEED and Project execution may lead to an Owner's less effective governance and create substantial risks for the project

Why it is essential to protect a real FEED phase with a consistency check gate

The push for acceleration tends to blur the limit between FEED and project execution and this creates substantial risks for the project which are often under-estimated.

In keeping with the good practices of project development governance for Owners, there should be an effective decision gate at the end of a Detailed Feasibility Study which not only covers aspects related to design but also checks the overall condition of the project including its execution plan, contractual strategy, and considers how well it interfaces with its environment including other parties or facilities. While it is true that it is rare that a project be stopped at that stage, having such a governance gate allows to take a cold-eye view on the preparation status of the project before authorising the substantial commitments and expenditure linked to execution. More importantly, it forces the organisation to reflect and to present a fully consistent plan of the project covering design, execution planning and interfaces with the project environment. When there is an effective governance point, it quite often happens that projects are sent back to the drawing board for an optimisation phase before being fully authorised. This gate check also allows to verify the adequacy of the project with possible changes in the project context or environment.

Consequences of not properly reviewing the consistency of the FEED output

By removing this consistency-focused checkpoint, the risk is to have different parts of the project progress at a different maturity development pace and later create substantial rework and/or interface issues because of an inconsistent design. This may also result in a poorly optimised final solution. It also creates the risk of not considering possible changes in the project's environment or interfaces that may need to be accounted for. This covers not only technical issues, but also regulatory, economic or any other issue that may impact the project. All in all, it creates a situation where the project baseline at the start of project execution is not robust and overlooks issues that could have been identified early and thus resolved without substantial expenditures and delays.

How to properly govern a combined FEED and execution contract

We consider that even if the contract is combining FEED and execution, the good practices of governance should be

imposed with a full review of the project and its consistency and maturity at the end of the FEED stage. Any early works or commitments prior to that milestone should be subject to a specific authorisation process and should be properly justified by their criticality for project success. These could include critical path, unique windows of opportunity for purchase of critical equipment or services or result from regulatory obligations.

The situation we currently observe with inadequate governance at the end of FEED, may be due to the fact that Owners have somewhat relinquished this task assuming the risk is diminished with continuity of the Contractor from Feed to execute. However, Contractors

have not traditionally included this in their governance framework and may not yet have implemented adequate controls at this governance point.

Therefore, we strongly recommend that the Contractors

should now learn to manage pre-execute governance process and organise the review of the comprehensiveness of the design and associated execution plan. Contractors should introduce in their project framework a strong gate review at the end of FEED focused on the overall consistency of the project plans and on the review of any changes to the project environment and risk profile. The content of this gate should be inspired by the traditional Owner gate system.

Success in passing the gate should be the condition for committing most of the expenditure.

Such a governance system may add a few weeks in the schedule, but the benefits in ensuring that the project is sufficiently mature and that the project baseline is sound for execution far outweigh the additional effort and time.

Conclusion

Combining FEED and project execution in a single contract is an attractive concept for acceleration of development projects. However, it should not mean that execution actually starts with the FEED. It remains essential to check that the design and project execution plan are fully consistent and mature at the end of FEED. Contractors need to learn to introduce in their project management framework a strong review gate at that stage inspired by Owner project governance frameworks. Any anticipation of execution or early commitments prior to that gate should be justified, limited and subject to authorisation.

A Gate review should be introduced at the end of the FEED to assess the Project maturity to execute the project



We Empower Organizations to be Reliably Successful in
Executing Large, Complex projects.

Discover more on

www.ProjectValueDelivery.com