



Managing risks in LNG engineering, procurement and construction management projects

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First line of defense in LNG projects

Fundamental and somewhat obvious contracting and delivery risks often compromise the successful execution of liquefied natural gas (LNG) projects. Informed by learning from major LNG project experience across the globe in Asia, the Middle East and the Americas, we have summarized the proactive contracting risk management approach needed to successfully combat and convert the poor experience into a positive experience. Approaches to bringing greater certainty to project out-turns through better addressing these contract risks are outlined below.

Managing risks in a complex and multifaceted stakeholder environment

A recurring theme in the LNG experience is each LNG project creates unique stresses on the contracting approach and associated risk management exacerbated by scale and complexity. The solution, and ways to navigate both the broad risk and particular risk management dimensions depend on the experience and expertise of sponsors, works contractors and suppliers and, most importantly, how that experience and expertise is applied. More specifically, the contracting approach and how contracting risks are best managed is influenced by the often conflicting objectives of participating shareholders, consortia and joint ventures, combined with bespoke contracting and risk-carrying arrangements, site-specific requirements, leadership and management team capabilities, unknown local supply chain participants, and local labor availability, quality and work pattern challenges.

Oversight and proactive contracting risk management are key in LNG projects

Based on our experience in helping de-risk project execution and in the turnaround of projects that have

suffered delays and cost overruns, we have identified the following four principal areas to focus on oversight and proactive contracting risk management for organizations undertaking LNG development projects.

- 1. Ensuring contracting clarity:** Organizations need to recognize the potential risk of failing to obtain complete, consistent, and compatible contracts and ensure these interfaces are explicitly considered. These include the EPC or EPCM contract; shareholder, joint ventures and consortia agreements; the prime works delivery contracts and project site and support contracts; and sub-contracts. The interface consideration also needs to address inconsistencies among contract conditions, specifications, and drawings to resolve upfront any potential uncertainty about what is actually specified by the prime contract. Most importantly, there is a need to secure a common understanding among all stakeholders of what the various contracts require in delivery. This common and clear understanding can avoid inevitable delays to resolve issues, accompanied by significant commercial tensions.
- 2. Understanding risk retention, transfer and management:** Risks cannot be effectively managed unless they are clearly understood by everyone involved in the project delivery. More specifically, this requires clear understanding of which risks are carried by whom in terms of the sponsor, the prime contractor or management contractor, the works contractors and the supply chain; whether there is a common understanding among the sponsor, the works contractors and the supply chain of the risks carried by each of them; and what capacity and capability those carrying the risks have to effectively

do so. Overall, the importance of open workshops cannot be stressed enough to fully address these issues. All too often there is a significant disconnect between participants' understanding of the nature of the risks, who carries particular risks and what needs to be done to manage them. Unless this fundamental matter is resolved early, any risk, governance or oversight management is doomed to fail in delivering to expectations.

3. Provision of quality information from the contracting structure:

Substantial risk can result if the supply chain is limited in its ability to provide specific information in a timely and effective manner to support optimum decision making. Recognition and more positive channeling is needed of default behaviors in providing information to protect contractual entitlement or to avoid liability, rather than for the optimum benefit to the project. As well, open access and mitigating protocols are needed. To the extent that protocols require project information

to be obtained directly and timely from its originating source and confirmed with the provider also helps with necessary transparency. Additionally, sponsors need contracting commitments and supporting mechanisms to be fully informed by the works contractors and supply chain in a time horizon, which allows effects on progress or completion of the project to be minimized.

4. Progress reporting and forecasting/progress and completion achievement:

In most LNG projects (and indeed in many other market sectors), the conventional focus is on retrospective progress reporting and the targeting of completion milestones. Much greater attention needs to be paid to short-medium- and long-term forecasting to provide proactive, accurate, forward-looking reporting and building skills in project professionals for delivering quality forecasts.



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