



Effective contractual mechanisms in Engineering, Procurement and Construction (EPC) projects

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Engineering, procurement and construction (“EPC”) projects can typically be found in large-scale infrastructure projects, for example in renewable energy projects. The success of EPC projects often hinges on robust contractual mechanisms designed to [mitigate risks](#) and ensure performance.

This blog provides an overview of the characteristics of EPC projects and highlights the following key contractual elements critical to the effective management of EPC projects:

1. Scope of work and performance metrics;
2. Performance guarantees;
3. Liquidated damages;
4. Security mechanisms;
5. Tripartite agreements;
6. Dispute resolution mechanisms; and
7. Force majeure clauses.

What are engineering, procurement and construction (EPC) projects?

EPC projects are turnkey projects where a single contractor is responsible for all activities from design, procurement, construction, commissioning and handover of the project to the end-user or owner. This approach is favoured for its efficiency and the single point of responsibility it provides.

Some of the key characteristics of the EPC contracting model are:

- Fixed price;
- Turnkey delivery;
- Guarantees; and
- Defined risk allocation.

Fixed-price contract

Often, EPC contracts are fixed-price or lump-sum contracts, which requires the contractor to deliver the project for a predetermined price. This type of contract transfers the financial risk to the contractor.

The contractor must be able to implement strategies for efficient risk management and cost control. The fixed-priced model provides cost certainty for the owner and is a strategy to reduce the risk of cost overruns.

Turnkey delivery

The EPC contractor is responsible for delivering a fully operational facility. This turnkey approach means that the risk of the management of day-to-day aspects of the project are allocated to the EPC contractor. This also means that the owner has a single point of contact for all aspects of the project.

Guarantees

EPC contracts often include performance guarantees where the EPC contractor is responsible for ensuring that the project meets specified performance criteria. If the project fails to meet these criteria, the EPC contractor may face penalties or be required to take corrective actions.

The EPC contracting model therefore has the advantage of incentivising timely delivery and quality assurance as the contractor is accountable for the entire project lifecycle. The challenge is that even though there are performance guarantees, poor performance by the EPC contractor can lead to project delays, cost overruns, and quality issues.

Defined risk allocation

EPC contracts clearly define the allocation of risks between the owner and the contractor.

Typically, the contractor assumes most of the project risks, including design, procurement, construction, and performance risks. EPC contracts will therefore involve detailed and complex negotiations to clearly define all terms, responsibilities, and risk allocations. This process can be time-consuming and requires careful attention to detail.

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Contract clauses to consider for effective management of EPC projects

The following discussion highlights some of the typical mechanisms within an EPC contract that we believe will help with the effective management of EPC projects.

Scope of work and performance metrics

A clearly defined scope of work is foundational to any EPC contract. The scope must outline the minimum technical requirements and overall performance metrics to avoid ambiguities that can lead to disputes and project delays.

The scope will typically include specific performance benchmarks, and the responsibilities for each of the phases of the project.

Performance guarantees

As discussed, performance guarantees are contractual commitments from the EPC contractor. In our experience, such guarantees are particularly prevalent in most construction projects.

As a contractual mechanism, performance guarantees can play a critical role in both securing project financing and mitigating operational risks in several ways, including:

- demonstrating the EPC contractor's commitment to lenders and reducing perceived risk, which makes it easier to attract financing from banks and other lenders;
- incentivising the performance of the EPC contractor to adhere to high standards of quality and efficiency;
- providing remedies for non-performance, such as liquidated damages which compensate the project owner for lost revenue or additional costs incurred due to underperformance. This financial compensation can help mitigate the impact of operational costs for the owner;
- enhancing thorough planning for operational requirements, including ensuring long-term sustainability of the facility.

Liquidated damages

Liquidated damages (LDs) are pre-determined sums payable by the contractor in the event of specific breaches of the contract, such as delays or performance shortfalls. LDs serve as a financial incentive for contractors to meet their obligations and provide a straightforward mechanism for compensating the principal.

There are two primary types of liquidated damages commonly used in EPC contracts:

Performance LDs

These are payable if the project fails to meet the performance guarantees. For example, if a solar farm does not achieve its target energy output.

Delay LDs

These are designed to compensate the project owner for losses incurred due to project delays. Typically, the delay LDs are calculated based on the estimated financial impact of each day the project is delayed beyond the scheduled completion date.

Security mechanisms

Security mechanisms provide the project owner with financial recourse in case the contractor fails to fulfill their contractual obligations. Common forms of security in EPC contracts include:

Bank guarantees

Typically, a bank guarantee is around 10% of the contract price. However, in high-risk projects, this percentage may be higher to account for any complex technological and operational uncertainties.

Retention

This involves withholding a percentage of each payment milestone, usually around 10%, until the project reaches substantial completion. This retention serves as leverage to ensure the contractor addresses any defects or incomplete work.

Advance payment guarantees

These guarantees protect the project owner in case the EPC contractor does not deliver after receiving advance payments. They are particularly important in projects where substantial upfront investment is required.

Parent company guarantees

These guarantees ensure that the ultimate parent company of the EPC contractor is liable for the contractor's obligations, providing an additional layer of security for the owner.

Tripartite agreements

In debt-funded projects, a tripartite agreement between the contractor, the principal and the finance lender is often required. These agreements set out the lender's rights and the contractor's obligations, ensuring that the lender can step in to manage the project if the contractor defaults.

This arrangement provides financial stability and protects the interests of all parties involved. This arrangement is typically found in large-scale projects in Australia, such as those funded by major international banks.

Dispute resolution mechanisms in EPC projects

EPC projects are susceptible to disputes due to their complexity and the involvement of multiple stakeholders. Effective dispute resolution mechanisms are therefore essential to address conflicts promptly and minimise project disruptions. Common dispute resolution mechanisms include:

Arbitration

This is a preferred method in some contracts due to its binding nature and the confidentiality it offers. Arbitration clauses specify the rules, venue, and governing law for resolving disputes.

Mediation

Mediation involves a neutral third party helping the disputing parties reach a mutually acceptable solution. It is less formal and can be faster and less costly than arbitration or litigation.

Adjudication

In Australia, adjudication is a statutory right in construction contracts, providing a quick, interim solution to payment disputes.

Force majeure clauses

Force majeure clauses are critical in EPC contracts to protect parties from liabilities due to unforeseen events beyond their control, such as natural disasters, pandemics, or political upheaval. These clauses typically outline the events considered as force majeure and the

procedures for notifying and handling such events.

During the COVID-19 pandemic for example, many EPC projects in Australia and around the globe invoked force majeure clauses to manage delays and disruptions caused by lockdowns and supply chain interruptions. These clauses provided a legal framework for contractors and project owners to negotiate extensions of time and other remedies.

Get help from a construction lawyer with EPC experience

The successful execution of EPC projects hinges on well-structured contracts that address the myriad risks and complexities inherent in such projects.

Wambeti Legal works with clients who are involved in EPC projects with a specific focus on businesses that contract under the Tier 1 project owner. We can assist with the detailed and often complex negotiations required in EPC contracting.

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