EPC and EPCM Procurement

Issues for Owners

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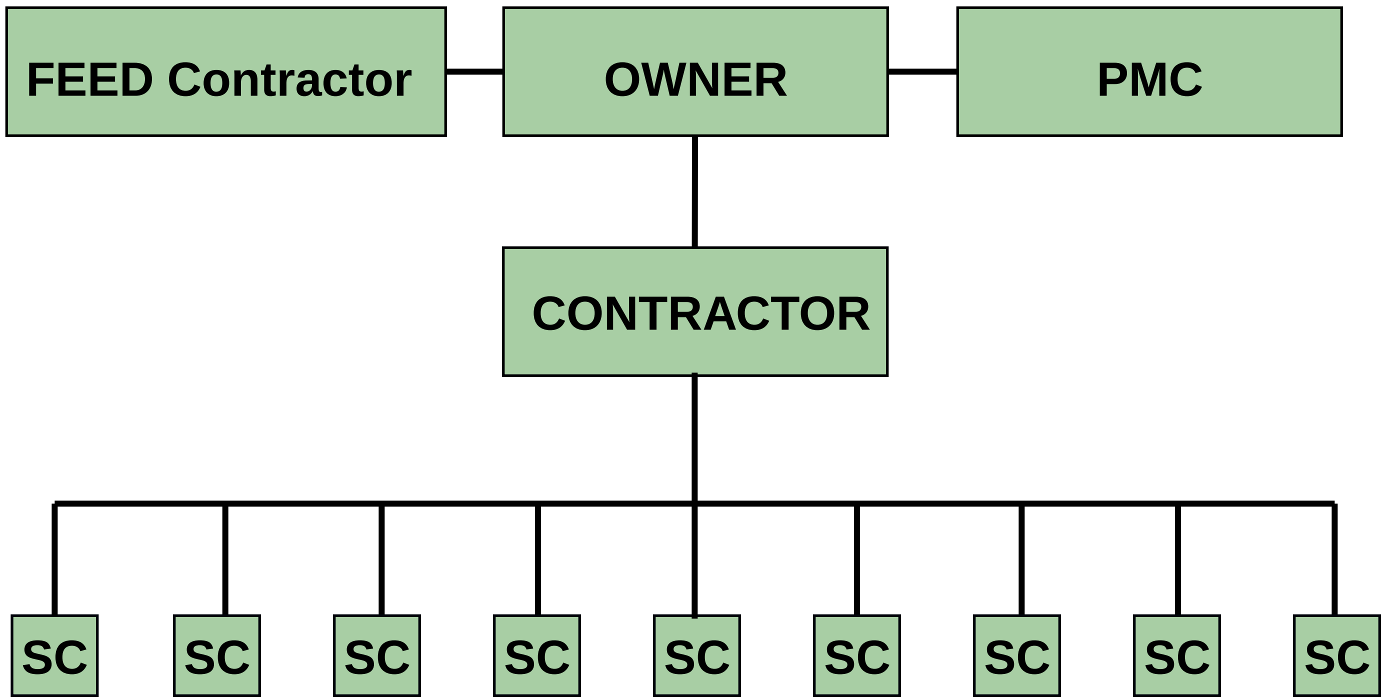
Overview

- EPCM and EPC general principles
- Key risks and benefits of each structure
- Risk mitigation in EPC and EPCM
- Other factors affecting choice of contracting strategy
- Other options
- Key issues in EPCM contracts

EPCM and EPC General Principles

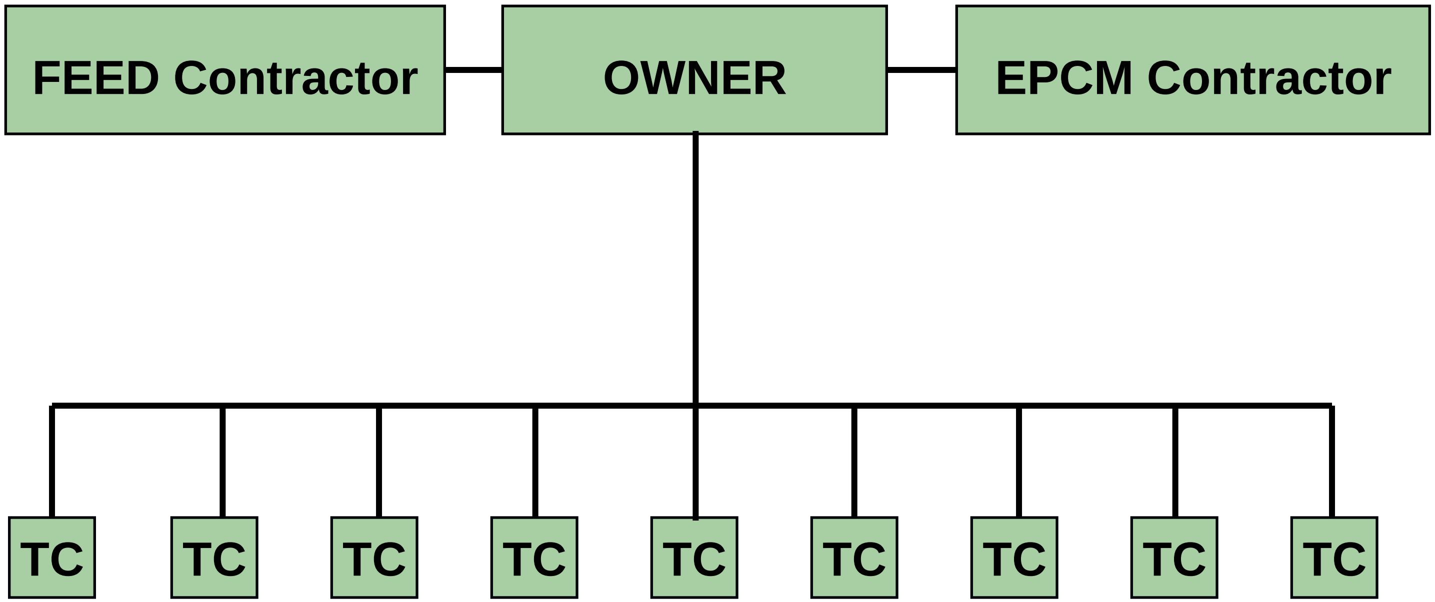
- EPC involves single point responsibility
- EPCM involves multi-point responsibility
- An EPC contractor gives a turnkey product guarantee
- An EPCM contractor does not – he provides services
- An EPC contractor is a principal
- An EPCM contractor is mainly an agent

EPC Structure



SC = SUB-CONTRACTOR

EPCM Structure



TC = TRADE CONTRACTOR

Benefits of EPC

- The contractor bears the risk of integrating the performance of all package contractors, including designers
- The contractor bears supply chain solvency risk
- The transfer of other construction risks is maximised relative to other procurement methods
- A high degree of certainty (on paper) can therefore be attained as to cost, time and quality

Benefits of EPC (cont.)

- Remedies (such as LDs), liability caps and bond amounts are all sized relative to the total cost of the works and thus likely to cover a significant proportion of the owner's losses
- Administrative burdens on the owner are minimised
- The documentation is relatively simple and standardised
- EPC procurement is widely used and understood and is the most "bankable" procurement method

Disadvantages of EPC

- Cost – contractors will add a substantial risk premium to the price
- Control – the contractor controls the detailed design and construction process
- Quality – the contractor will aim for the minimum compliant standard
- Bidder resistance – EPC has been unpopular among some contractors (though market conditions are rapidly changing)

Disadvantages of EPC (cont.)

- Duration – total construction time may be prolonged by required FEED → EPC sequence
- Capacity/competition – few contractors have the balance sheet capacity to accept (and bond) the risk of large projects on an EPC basis
- Claims – contractors are motivated to make claims to alleviate risk transfer
- Caps – EPC risk transfer is in reality limited by express liability limits and by balance sheet and bonding limitations of contractors

Benefits of EPCM

- Cost – if EPCM works well it is the lowest cost method, because the risk contingency may not need to be utilised
- Time – if EPCM works well it is also the fastest procurement method (because of fast tracking)
- Market access – the smaller size of individual packages diversifies the pool of bidders
- Control/flexibility – design changes can be accommodated with potentially less cost and delay
- Insolvency and performance failure risks are spread

Disadvantages of EPCM

- More risks retained by the owner:
  - Risk of interface claims from contractors
  - Burden of proving fault
- Owner's legal remedies are diluted:
  - By need to allocate fault
  - By reduced value of remedies
  - By limited rights against the EPCM contractor

Disadvantages of EPCM (cont.)

- Owner's later package choices may be limited by earlier decisions
- Significant demands are placed on the owner's skills and resources (the EPCM contractor may have conflicts of interest which require management)
- Complex documentation
- Financing options are limited
- EPCM works best within established relationships between experienced parties

Risk mitigation in EPC

- Risk allocation can be selective/graduated
  - Ground conditions
  - Permitting
  - Change of law
  - Currency
  - Commissioning and testing
  - Variable pricing
- There can be gainsharing
  - Early completion and excess performance bonuses
  - Value engineering
- Two-stage contracting and long-lead procurement

Risk mitigation in EPCM

- Good project planning and management
  - Package sizes/content/number
  - Sequence
  - Site layout
- Agreements among/with package contractors
  - Full umbrella agreement not feasible in practice
  - At least impose consolidated dispute resolution
  - Common practical arrangements, eg access protocols
  - Shared bonus pool based on total outcome
  - Obligations to cooperate and mitigate (remedies?)

Risk mitigation in EPCM (cont.)

- An external EPCM contract
  - Think of it as an enhanced consultancy agreement
  - Reasonable skill and care in providing services, not fitness for purpose of the works
  - Limited remedies – re-performance and perhaps some liquidated damages for deficient services
  - Possible gainshare/painshare on project outcomes
  - But all financial remedies are scaled to the EPCM fee, not the cost of the works
  - The owner is buying skills and resources, not legal remedies
- Insurance – DE/LEG and LDI

Other factors affecting choice of method

- Financing method
- Ownership
- Commercial priorities (speed, cost, certainty etc)
- Market conditions
- Procurement rules/norms
- Past practice/philosophy
- Nature of works (eg whether new build or refurb)

Other options

- Cost reimbursable/GMP/target cost contracts
- Two-stage contracting

Key issues in EPCM contracts

- **Scope**
  - Design (FEED and detailed)
  - Process integration
  - Procurement
  - Construction supervision
  - Commissioning and testing
  - Direct works provision
  - Cost estimation
- **Price**
  - Cost reimbursement plus fixed fee has been common practice
  - "Fee" in this context means a payment for risk, profit and overhead
  - Should be possible to fix at least some cost elements in this market
- **Liability and incentives**

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