EPC CONTRACTS FOR DOMESTIC AND
INTERNATIONAL PROJECTS:

Contractor Risks and
Lender Concerns

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International Infrastructure Projects

- **Complex transactions**
  - High profile
  - Many parties
  - Multi-jurisdictional
  - Significant sums involved

- **Multiple risks for all participants**
“Bankability”

• Key question for success or failure of a project: *Can it be financed?*

• Infrastructure projects may be
  – direct financed by sponsors, or
  – project financed by lenders

• For project financing, allocation of risk is a fundamental issue for financiers
EPC Contracts for Domestic and International Projects

EPC Contracts and Project Risks

• EPC contract
  – primary tool to allocate project risks between sponsors/owners and contractors
  – also, some direct protections for lenders

• Understanding this function better
  – help parties structure more “bankable” EPC contracts
  – also protect their own important interests
Agenda

• A brief survey of major project risks
• A closer look at construction related risks borne by contractors
• How EPC contracts allocate and help manage these risks
• Some lender concerns under EPC contracts
Typical Project Structure

- **Sponsors** → **Concession Authority**
- **Shareholders Agreement** → **Concession Authority**
- **Financing Agreement** → **Concession Authority**
- **Lenders** → **Concession Authority**
- **Special Purpose Vehicle (SPV)** → **Operator**
- **Operation & Maintenance** → **Special Purpose Vehicle (SPV)**
- **Construction Agreement** → **Special Purpose Vehicle (SPV)**
- **Supply Agreement** → **Supplier**
- **Off-take Agreement** → **Purchaser**
- **Supplier** → **Special Purpose Vehicle (SPV)**
- **Purchaser** → **Special Purpose Vehicle (SPV)**

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Project Risks - Overview

• General Categories
  – Construction Risks
  – Operating Risks
  – Financial and Economic Risks
  – Legal Risks
  – Political Risks

• All of these risks are interrelated
  – Each one will affect different projects differently
  – Tradeoffs are common
Principal Construction Risks

• **Contractor:** *Does the contractor /subcontractor have necessary expertise/funds?*

• **Design/Engineering:** *Can the project be constructed and completed as designed?*

• **Technology:** *Will all key components of project technology perform?*

• **Force Majeure:** *What natural hazards may disrupt construction?*

• **Permit/License:** *Will all required permits be obtained or renewed?*
Delays and Cost Overruns

• Primary effects of construction risk
  – Can have different effects and causes

• If unexcused, EPC contractor in breach
  – Damages/liability could be significant
  – Important to know which are important in a project when structuring EPC contract

• Two examples illustrate:
  – LNG storage facility (hypothetical)
  – Petrochemical refinery project (actual)
Delays and Cost Overruns

- **Case Study: LNG Project (hypothetical)**
  - **Delay in completion:**
    - miss critical point in business cycle
    - unsatisfactory supply and/or offtake contracts
    - unable to operate economically in the long term
    - project cancellation?
  - **Cost overrun:**
    - might be possible to complete with additional investment
      → still catch business cycle?
Delays and Cost Overruns

• **Case Study: Petrochemical Refinery**
  – Project suspended for 5 years by Asian financial crisis
  – Sponsors far in debt to EPC contractor
  – Work restarted with financial support from EPC contractor, government and others
  – Amount of financing strictly limited by complex structure
Delays and Cost Overruns

- **Case Study: Petrochemical Refinery (cont’d.)**
  - Delay in Completion:
    - not fatal; still profitable for sponsors and useful to government to complete
    - EPC contractor potentially recovers investment and profit
  - Cost Overruns:
    - significant and continuing issue
    - hard ceiling on financing → pressure on contractors to absorb costs → limits ability to recover investment
    - project seeking additional funding
Contractor Risks in EPC Contracts

• Contractors must often accept a large amount of risk in an infrastructure project financing
  – Often the only creditworthy project party

• “Turnkey EPC” construction contract does this
  – Supports “bankability” of project
  – But expensive → contractors are paid for taking the large risks inherent in EPC contracts
# Balance of Risks - Construction Contracts

<table>
<thead>
<tr>
<th>Owner/Sponsors</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>---Construction Management---</td>
<td>---EPC---</td>
</tr>
<tr>
<td>---Management Contract------</td>
<td></td>
</tr>
</tbody>
</table>
EPC Contract: Risk Allocation to Contractors

- Single point of responsibility for facility construction
- Fixed completion date
- Fixed completion price
- Limited technology risks
- Performance guarantees
EPC Contract: Risk Allocation to Contractors

- Liquidated damages for both delay and performance
- Security from the contractor and/or its parent
- High limits on liability of contractors
- Limited grounds for the contractor to claim extensions of time and additional costs
EPC Contract Risk Management: Multiple Contractors

• Contractors often act in consortia
  – responsible for different parts of the works
  – no joint/several liability among members

• Members need to coordinate and integrate their separate works properly

• EPC contract must permit this while still preserving “single point of responsibility” concept
EPC Contract Risk Management: Multiple Contractors

- **Case Study: Petrochemical Refinery - Delay LD’s**
  - Single EPC contract among owner, one offshore major contractor and consortium of 3 local civil works contractors;
    - Local contractors: jointly and severally liable for civil works but not for refinery
    - Offshore contractor: responsible for refinery works but not civil works
  - Each contractor’s timely performance depended on timely performance by the other – who is responsible for delay?
  - The risks of late delivery were shared by the contractors
  - This created a strong incentive for the contractors to work together.
EPC Contract Risk Management: Multiple Contractors

• **Case Study: IPP Project – “Split EPC contracts”**
  - Two separate EPC contracts for one power project
    - Onshore – civil works, labor, etc.
    - Offshore – equipment supply and engineering
  - Driven by local tax issues
    - Commercially, offshore contractor responsible for completion
    - Legally, almost no ability to cross reference other EPC contract w/o losing tax benefits; “contamination”
  - Required detailed consideration of split responsibilities for management, completion certificates, testing and commissioning, warranty, insurance, etc.
EPC Contract Risk Management: Materials Supply

- EPC contract should specify responsibility for providing critical materials and supplies
  - Many large projects in a small region can squeeze supplies
  - Shortages and/or price increases can significantly affect project economics for responsible party

- Cost and time of construction are both affected by materials risk, regardless of the skill of the contractor

- Case Study: Petrochemical Refinery
  - Responsibility for absorbing post-closing steel price increases was a significant issue
EPC Contract Risk Management: Force Majeure

- Can significantly increase the cost and/or delay construction of a project
  - Contractor expected to operate in all but most extreme conditions
- EPC contract → Recognize special situations
  - For example, suspend operations if a hurricane approaches within a specified distance
- EPC contract → Permit termination for extended force majeure
- Obtain casualty insurance
EPC Contract Risk Management: Technology/Process Risk

- Delays in performance testing can prevent timely completion of construction.
  - Unforeseen problems can arise in scaling up models to production size
  - Even proven technologies can cause delays if very complex.

- EPC contract permit pass-through of technology/process risk to supplier/vendor
EPC Contract Risk Management: Title Risk

• Clear title to the project site is desirable, but not always possible to obtain
• Thus, concession, financing and construction contracts in such situations must account for the lack of clear title
  – indemnities
  – third-party consent requirements
EPC Contract Risk Management: Handover Risk

• Provide for good / frequent communication between the contractor and the operator during construction and handover
• Involve operator in review / comment on contractor’s punch list
• Define transition responsibilities clearly
EPC Contract Risk Management: Currency/Payment Risk

• Payment in currency of obligations
• Payment milestones in advance of costs incurred
• Change orders require evidence of owner’s ability to pay
• Offshore payment security and accounts
EPC Contract Risk Management: Coordination Issues

• All project contracts should fit together seamlessly
• Special issues to consider:
  – Are indemnity rights and obligations parallel?
  – Are insurance requirements consistent?
  – Are deadlines and grounds for extensions for related events similar in different documents?
• Inputs/Supply and Outputs/Offtake Agreements
  – adequate supply of fuel for testing and commissioning
  – force majeure provisions match those in the EPC
EPC Contracts for Domestic and International Projects

Typical Project Contracts

FUEL SUPPLIER
- Fuel Supply and Transportation Agmt

OFF-TAKER
- Power Purchase Agreement

GOVERNMENT OF HOST
- Concession Agreement
- Comfort letter or Guarantee
- Approvals

COMPANY 1

COMPANY 2

EPC CONTRACTOR
- EPC Contract

OPERATOR
- Operation and Maintenance Agmt

SECURITY AGENT
- Assignment/Pledge:
  - assets
  - land rights
  - all project contracts
  - accounts
  - insurance

LENDER 1

LENDER 2

LENDER 3

LENDER 4

INSURER
- Insurance policies and insurance proceeds

PROJECT COMPANY
- Payment (Key Revenue Stream)

SPONSORS
- Equity Funding
- Shares in Project Company
- Dividend
- Designs and builds project
- Payment

POWER
- Operation and maintenance project
- Insurance premium

LENDERS
- Loans
- Repayment

INSURER
- Insurance policies and insurance proceeds

SECURITY AGENT
- Assignment/Pledge:
  - assets
  - land rights
  - all project contracts
  - accounts
  - insurance

GUARANTEE
- Guarantee
- PPA payment obligations

FINANCE
- Equity Funding
- Shares in Project Company
- Loans
- Repayment
- Insurance premium
- Dividend
- Designs and builds project

PAYMENT
- Fuel
- Power
- Payment (Key Revenue Stream)
- Payment
- Payment
- Payment
- Payment
- Payment
Typical Project Contracts

- Basic Sponsor Agreements
- Licenses, Permits, Franchises
- Construction contracts
- Financing contracts
- O&M agreement
- Input/supply agreements
- Output/offtake agreement
EPC Contract Risk Management: Completion Issues

• Clearly define what “completion” is at each stage of the project
  – constructed?
  – performance tested?
  – commissioned?
  – handover completed?

• Series of interim completion dates to monitor progress

• Allow sufficient “float” in schedule to avoid frequent requests for extensions
EPC Contract Risk Management: Liquidated Damages

- Imposed on Contractor for
  - construction delay
  - facility performance shortfall
- Understand process specifications of vendors and offtakers
- Obtain warranty pass-throughs and hold-harmless clauses for technology/process and major equipment supply
EPC Contract Risk Management: Owner Obligations

• Typically Owner must provide access to:
  – fuels, utilities, ports, roads, site title and other infrastructure and supplies
  – facility itself, for testing and commissioning
• May also be provided by another contractor
• EPC contract should specify
  – how, when and by whom these will be provided
  – remedies for nondelivery
EPC Contract Risk Management: Dispute Resolution

- Disputes inevitably arise - need to provide a smooth / fair / quick process to resolve issues
- Process should be “user friendly”
  - consistent with dispute resolution provisions of other project documents
  - provide for consolidation of similar disputes
- Arbitration
  - international institution/rules: e.g. ICC, UNCITRAL
  - regional institution/rules: e.g. SIAC, HKIAC
EPC Contracts: Some Lender Concerns

• Repayment Risk
  – Little or no recourse to the sponsors, only to the project assets
  – Lenders focus on risk allocation, project cashflows, size of initial equity investment, creditworthiness of contractors and offtakers
  – EPC and other project contract terms also important → permit effective exercise of remedies
EPC Contracts: Some Lender Concerns

• Privity of contract and direct agreements
  – Lenders have few direct contracts with major project parties, such as contractors, suppliers and offtakers.
  – Direct agreements with such other project participants spell out their rights.

• Termination clauses, compensation and step-in rights
  – Provide contractual terms of rights and remedies
EPC Contracts: Some Lender Concerns

Lender’s Collateral Assignment of Contract Rights

“Direct Agreement” with Lenders providing for:
1. Consent to collateral assignment by Project Company
2. Receive notice of default; opportunity for Lenders to cure
3. Foreclose on loan — right of Lenders (or their designee) to take the place of Project Company
4. Payment to be made directly to Lenders

GOVERNMENT OF HOST COUNTRY
  • Concession Agreement

OFFTAKER
  • Power Purchaser Agreement

FUEL SUPPLIER
  • Fuel Supply and Transportation Agreement

EPC CONTRACTOR
  • Engineering Procurement Contract

OPERATOR
  • Operation & Maintenance Agreement

SECURITY AGENT (for and on behalf of Lenders)

PROJECT COMPANY
EPC Contracts: Some Lender Concerns

• Bank vs. Bond Debt
  – Bank debt formerly predominated
  – Capital markets are now more familiar with project finance
  – Nevertheless, complex financing documentation still required for bond debt
    • difference is more in terms than structure
Summary

- Large international infrastructure projects are complex and high in risk, so are often project financed
- Contractors accept a large amount of project risk under an EPC contract
- Lenders will require certain contractual rights directly against EPC contractors
- Careful risk analysis and attention to lender concerns can help contractors manage their EPC contract risks and preserve project “bankability”
Thank you.

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