



# PROJECT INSURANCE

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# Agenda

- What is Project Finance?
- Project Risk Transfer
- Project Insurance – Broker's Perspective
- Project Risk Engineering



# **WHAT IS PROJECT FINANCE?**

# What is Project Finance?

## Project

“Planning, Execution & Commissioning of Large Engineering Works”

## Project Finance

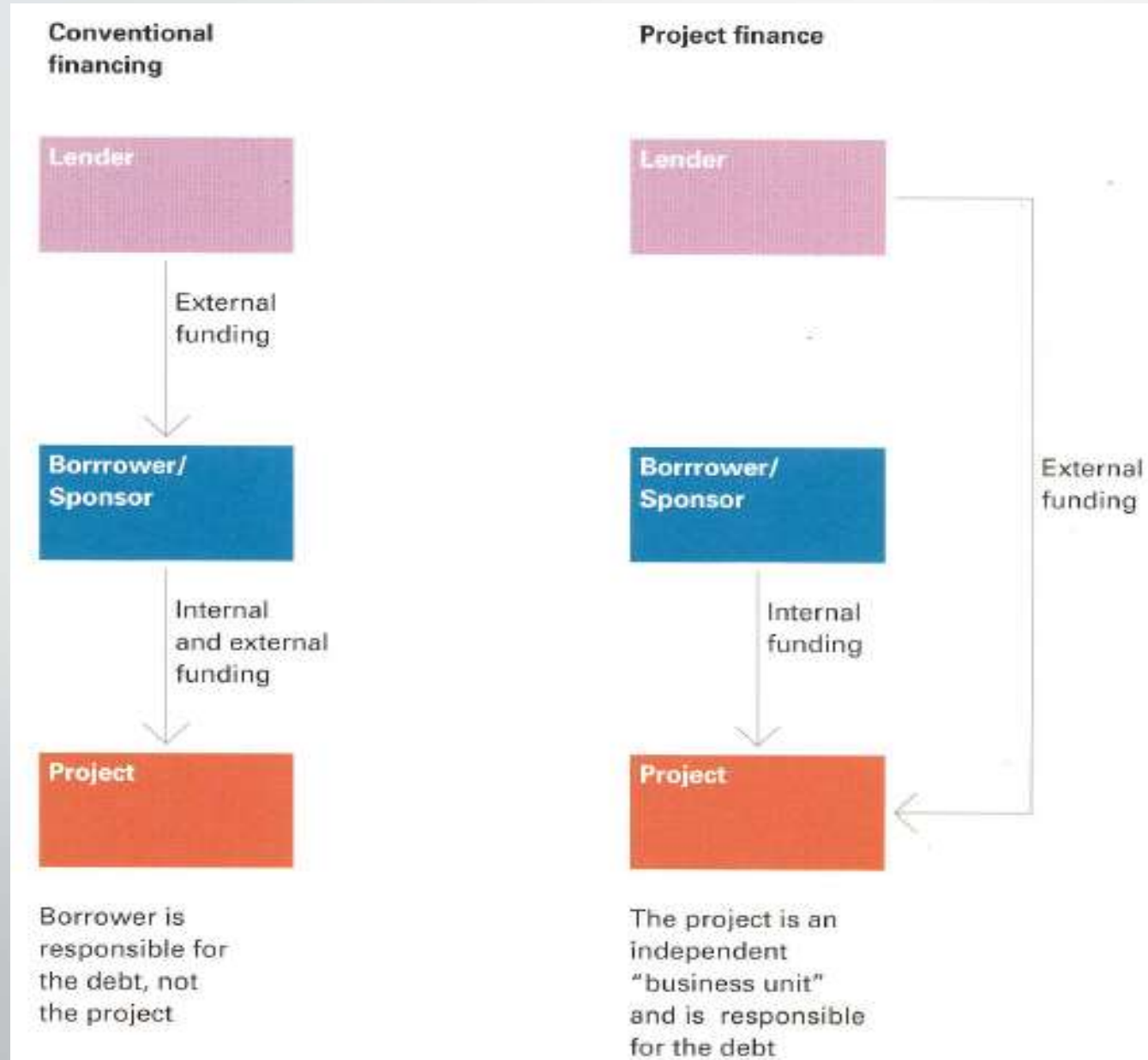
“Financing of a major capital project in which a lender is satisfied to look initially the **cash flows** and **earnings** of that project as the source of funds from which a **loan** will be repaid and to the **assets** of the project as **collateral** for the loan.”

# What is Project Finance?

## Basic Principles:

- 1- Recourse to the Borrowers assets
- 2- Repayment of debt from the revenue stream generated by the Project

# Difference b/w Conventional & Project Financing



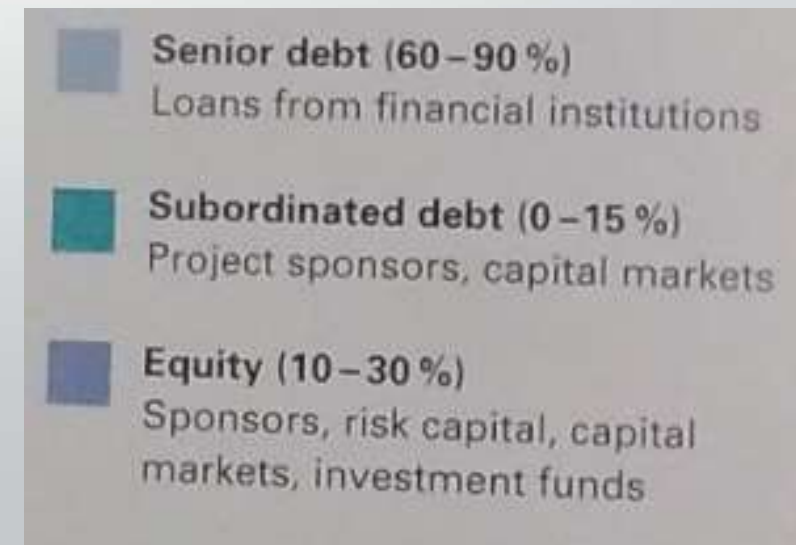
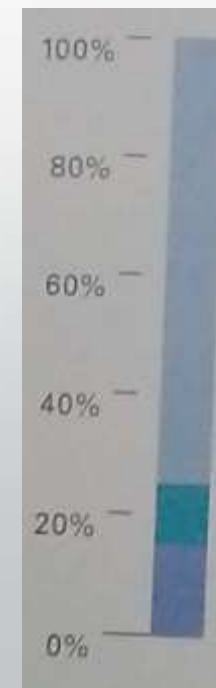
# Main Stakeholders in Project Finance

Stakeholder	Description
<b>Sponsor(s)</b>	<ul style="list-style-type: none"><li>- Direct or Indirect interest in realization Project</li><li>- Objective is to obtain limited recourse (non-recourse) financing</li></ul>
<b>Project Company</b>	<ul style="list-style-type: none"><li>- Also called Special Purpose Company (SPV)</li><li>- Legal entity but for limited time</li><li>- Channelling funds from Borrowers to Lenders</li><li>- Contract debt and collect generated cash flow</li><li>- Provide limited recourse finance</li></ul>
<b>Operator</b>	Operations & Maintenance (O&M)
<b>Lender</b>	<ul style="list-style-type: none"><li>- Syndicate of banks, Institutional investors</li><li>- World Bank, IFC etc.</li><li>- <b>Arranger:</b> Bank which arranged financing &amp; syndication (leader)</li></ul>
<b>Financial Advisor</b>	<ul style="list-style-type: none"><li>- Investment or Commercial Bank</li><li>- Prepare information memorandum &amp; sell the project to lending banks</li></ul>
<b>Lender's Insurance Advisor (LIA)</b>	<ul style="list-style-type: none"><li>- Review, assess, comment upon and approve the insurances pursuant to:<ul style="list-style-type: none"><li>- Project risk review</li><li>- Contractual risk flow/allocation analysis</li></ul></li></ul>
<b>Sponsor Insurance Advisor (SIA)</b>	Design, broke, place and manage the project insurances

# Project Finance Structure

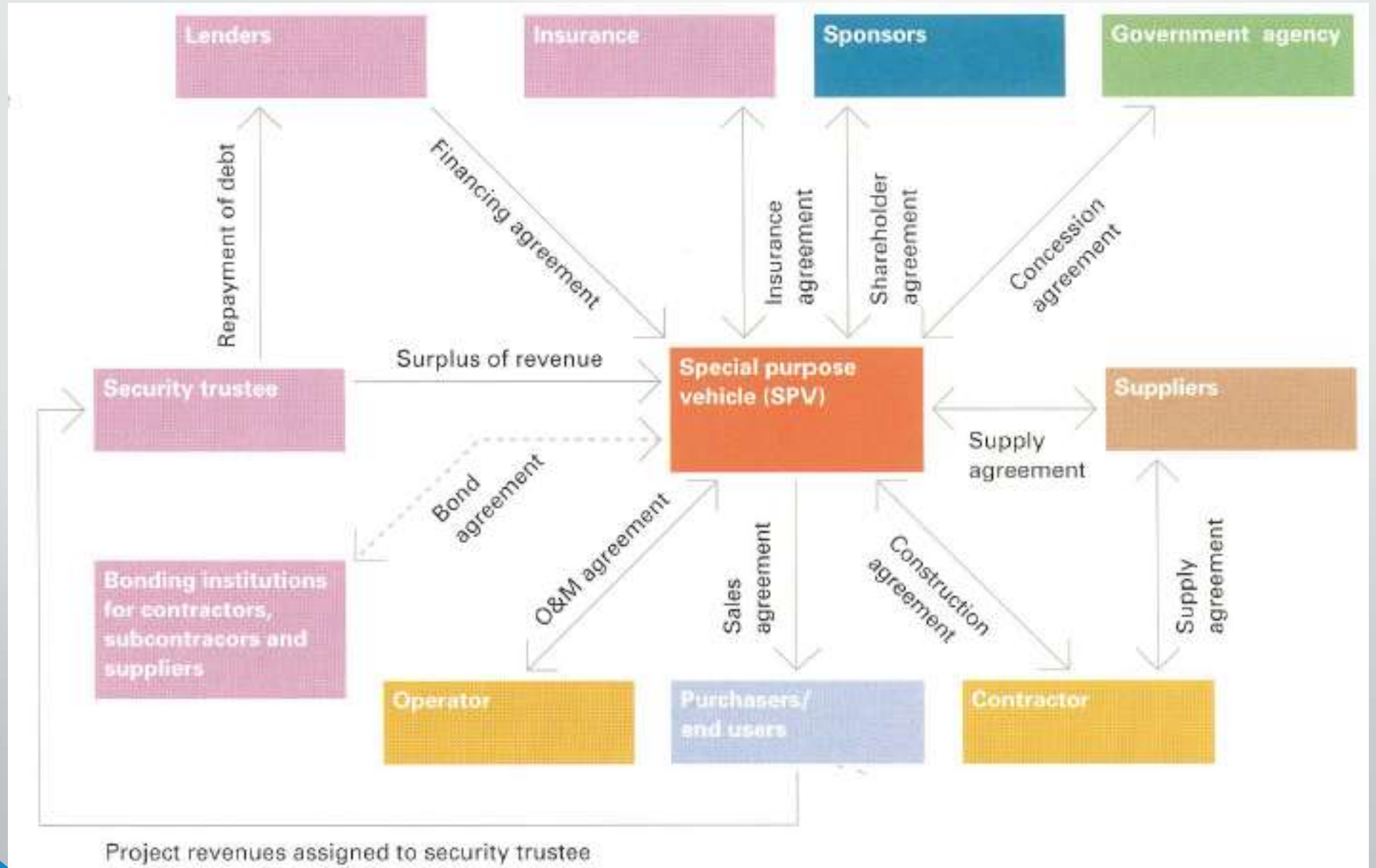
## Basic characteristics:

- Limited recourse or non-recourse financing
- Repayable out of Project cash flows
- Interest in the output of a Project





# Project Finance Structure - BOT



# Construction Project Phases

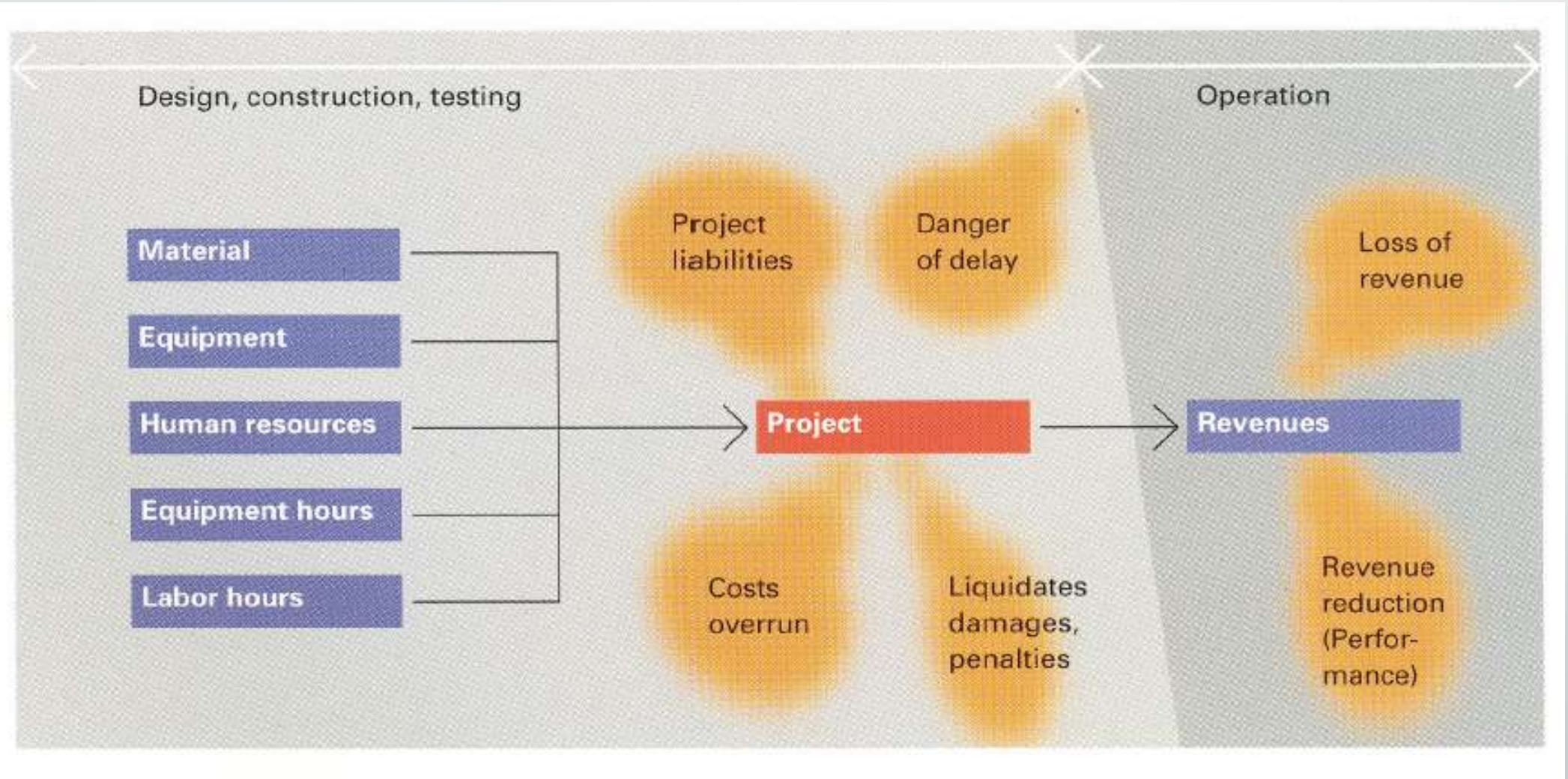
Project phases				
Pre-project	Development	Construction	Testing	Operation
Time period				
variable	2-3 years	1-5 years	1-6 month	up to 20 years or more
Activities				
Initial development	Feasibility study	Site work	Startup, testing	Commercial operations
Identify a project	Partner search	Fabrication	Provisional acceptance	Punch list
Request for authorisation	Form project co.	Erection		Final acceptance
Go ahead approval	Financing negotiations			Maintenance
	Design			Transfer (BOT)
	Bid, procurement			Liquidation
Costs				
Pre-development cost	Development costs and expenses	Constructions costs	Comissioning adjustments	Operating expenses
	Financing costs			Fuel
				Maintenance
Revenues				
none	Recoup from partner (?)	Development fees	Operating revenues	Operating revenues
				Equity sell down



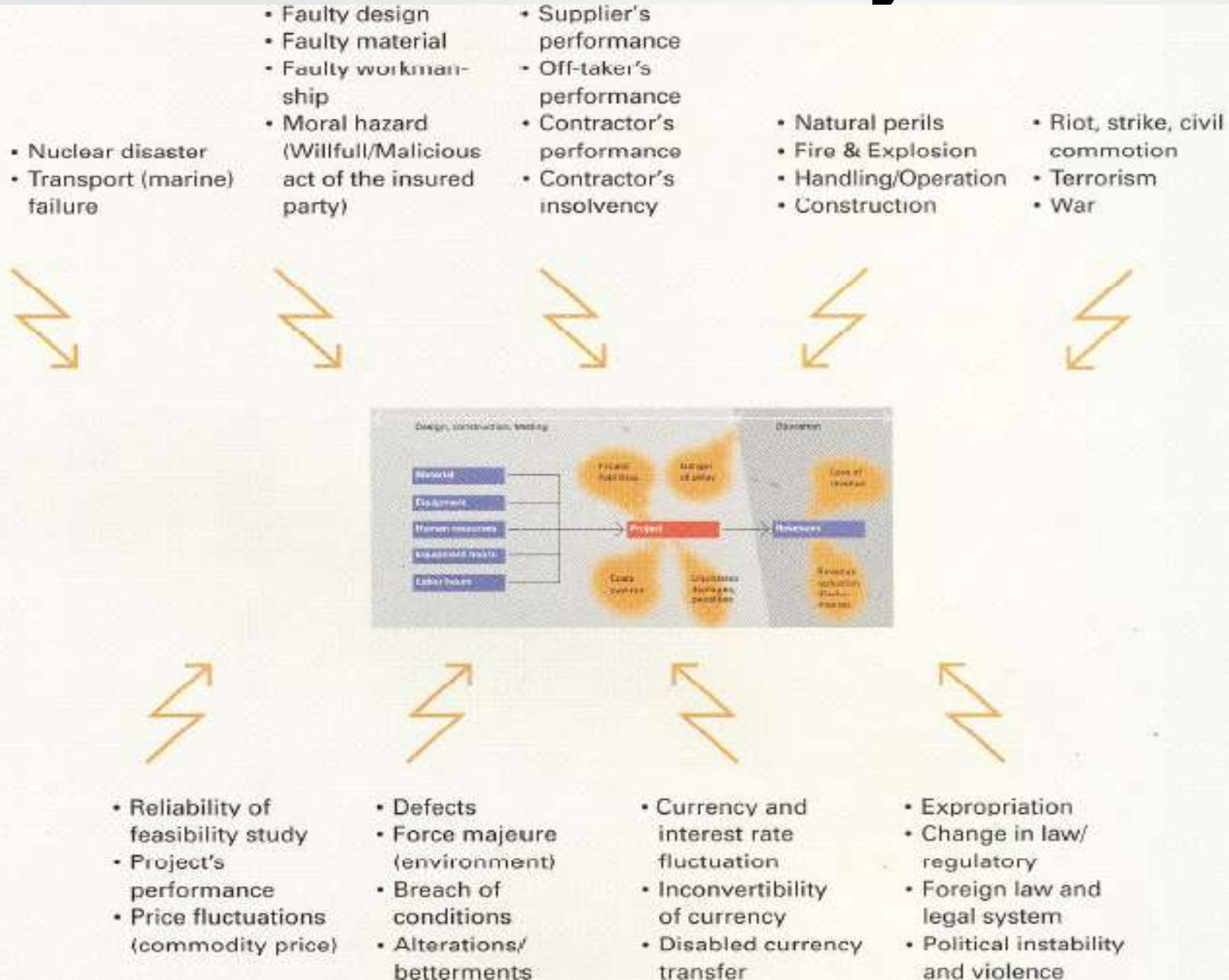
# **PROJECT RISK TRANSFER**



# Endangered Project Factors



# Possible Perils of a Project





# Risk Transfer Solutions

Key Risk	Assumptions	Probability	Impact	Mitigation	Insurable?	Comments
Availability of utilities during construction	Alternative sources of utilities feasible	Medium	High	Back up options and contracts in place	No	Investor risk
Lack of competent construction staff	Average to low recruitment pool in Oman	Medium	High	Employee value proposition and training programmes. Use of expat work workforce (if allowed)	No	Investor risk
Explosion in New Plant during construction	Good standards of construction, quality control and initial maintenance and repair	Low	High	Best in class training and maintenance programmes. Fire fighting capabilities. and emergency response plans during construction	Yes	Cost of repairs / replacement is insurable. <b>We expect this risk to be covered under construction all risks insurance</b>
Explosion in New Plant during construction (future loss of or reduction in income)	Good standards of construction, quality control and initial maintenance and repair	Low	High	Best in class training and maintenance programmes. Fire fighting capabilities and emergency response plans during construction	Yes	Loss of or reduction in income are insurable. <b>We expect this risk to be covered under delay in start-up insurance</b>
Machinery breakdown during construction	Best in class equipment procurement	Medium	High	Warranty provisions in contracts. Vendor assistance. Continuous monitoring/reporting for early discoverability of faults	Yes (provided there is damage)	Cost of repairing / replacing damage is insurable. <b>We expect this risk to be covered under construction all risks insurance</b>

# Risk Transfer Solutions

Key Risk	Assumptions	Probability	Impact	Mitigation	Insurable?	Comments
Events at suppliers' premises during construction	None	Medium	High	Contingency arrangements where possible	Yes	Reduction in income is insurable where take or pay relief is unavailable. We expect to be limited cover for this risk provided under delay in start-up insurance
Environmental leakage and damage to New Plant surroundings during construction	Good standards of engineering, maintenance and prevention	Low	Medium	Early warning and emergency response planning. Good and inclusive safety culture	Yes	Clean up and compensation liabilities may be provided under the project construction third party liability insurance, where the cause arises from a sudden and accidental event
Change in laws and regulations during construction	Good relationships with local and central government	Low	Medium	None available	No	Investor risk
Currency risk during construction	Significant transactions conducted in US\$	Medium	Medium	Hedging, payments to contractors and vendors	No	Investor risk
Damage to property in transit during construction	Experienced contractors. It is assumed that there are not large volumes of equipment transits	Medium	Medium	Planning and packaging. Responsibility for property only assumed at point of delivery	Yes	We expect this risk to be covered under equipment cargo insurance
Future loss of or reduction in income arising from damage to property in transit during construction	Experienced contractors. It is assumed that there are not large volumes of equipment transits	Medium	Medium	Planning and packaging. Responsibility for property only assumed at point of delivery	Yes	We expect this risk to be covered under cargo delay in start-up insurance



# **PROJECT INSURANCE – BROKER'S PERSPECTIVE**



# Why Insurance Brokers?

- Review bid documents
- Engineering Procurement Contract (EPC) tenders
- Technology choice and insurability benchmarking
- Setting budgets
- Engaging with lenders
- Designing the programme
- Marketing
- Binding
- Closing

# Contract Review

- Understanding the importance of reflecting logical, practical, achievable and economic risk and insurance provisions consistently across all Project Agreements;

- EPC
- CTA/Loan Agreement
- Concession Agreement
- Power Purchase Agreement
- LTSA
- O&M Agreement
- Site Use Agreement/Other Agreements

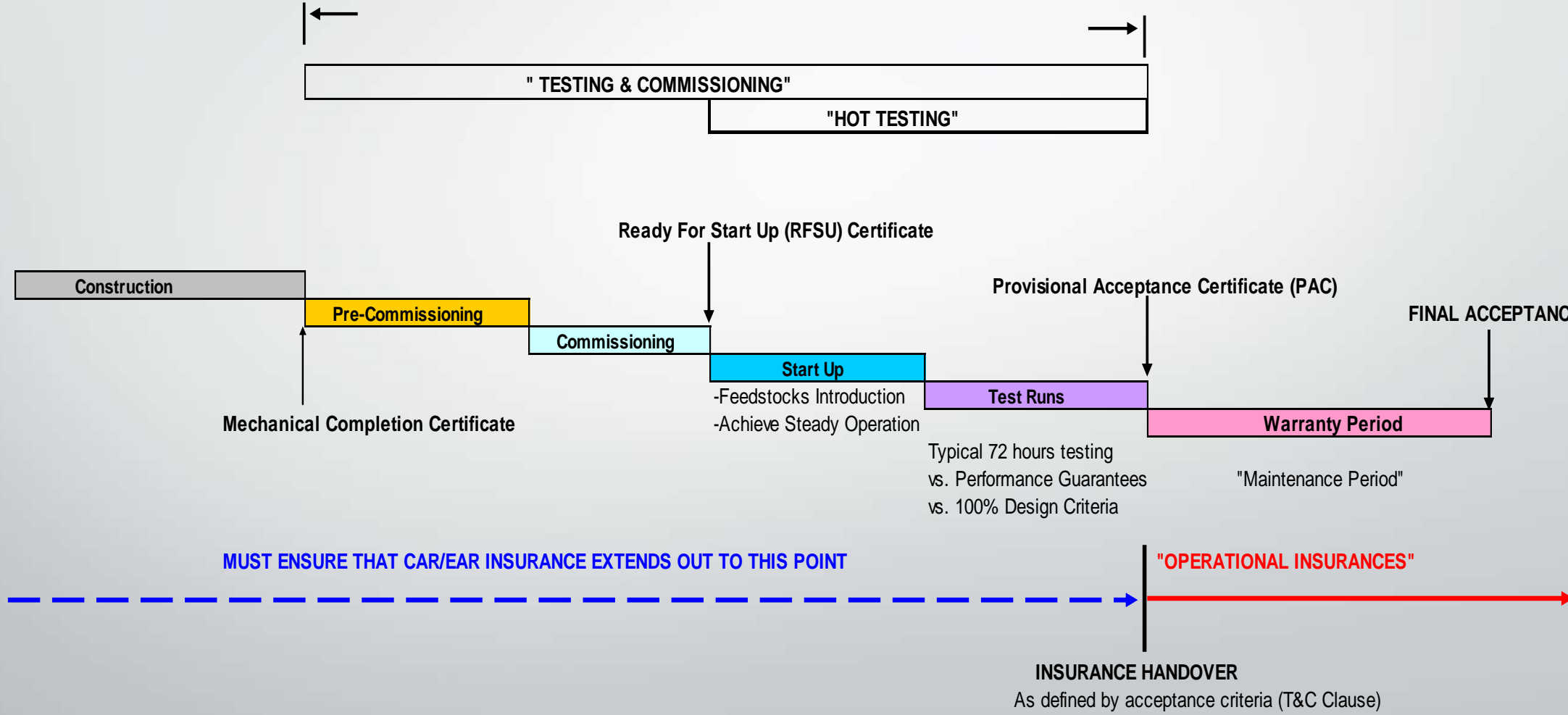
- Understanding the impact of the numerous contractual parties involved in Project on the risk and insurance programme design;

# Underwriting Information Collection

- Understanding the information to be provided to the insurance market to procure the Project insurance programme at best terms;
- Questionnaire
  - Key Items
    - bar chart
    - Breakdown of Contract Value
    - marine Critical Items
    - Exact site location
    - Site plans
    - major equipment model details

# Typical Project Timeline

## GENERIC PROJECT FLOW



# Testing & Commissioning Clause

Typical Extract from a Property Damage / Business Interruption policy:

“It is hereby noted and agreed that this Insurance does not cover destruction or damage to property in the course of construction or erection, dismantling or undergoing testing commissioning including mechanical, performance testing and any business interruption resulting therefrom

Acceptance of property hereon is subject to satisfactory completion of the following procedures:

- Mechanical testing
- Testing and commissioning
- Performance testing conforming to 100% contract design criteria for a minimum of 72 hrs
- Official acceptance by the Insured following formal handover certificate procedure (it being understood that no equipment faults or punch list items affecting operational integrity of the plant are outstanding”

# Common Issues preventing Transition from Construction

- PAC not met
- Reservation / punch list items not cleared
  - Strategy / definition not clear
- Warranty Items / non-conformance not declared / resolved
- Fire Protection and Critical Safety Systems (e.g. gas detection) not commissioned
- Fire water systems not tested/commissioned
- Losses during construction not investigated, RCA actions unresolved



# **PROJECT RISK ENGINEERING**

# Project Risk Engineering - Overview

Process to undertake Surveys at regular interval during the life of construction project

## **Purpose:**

- **Prevention of Losses** by assessing the performance & progress of construction activities
- **Identify** key areas of risks
- **Provide** risk recommendations – For improvement
- **Calculate** Loss Estimates



# Project Risk Engineering - Overview

## Insurer's Perspective:

- Construction progress including recent or expected changes
- What problems have been OR are about to be encountered
- Project delays (if any)
- Insured's responses to project delays, problems and previous risk recommendations

# Risk Quality Factors

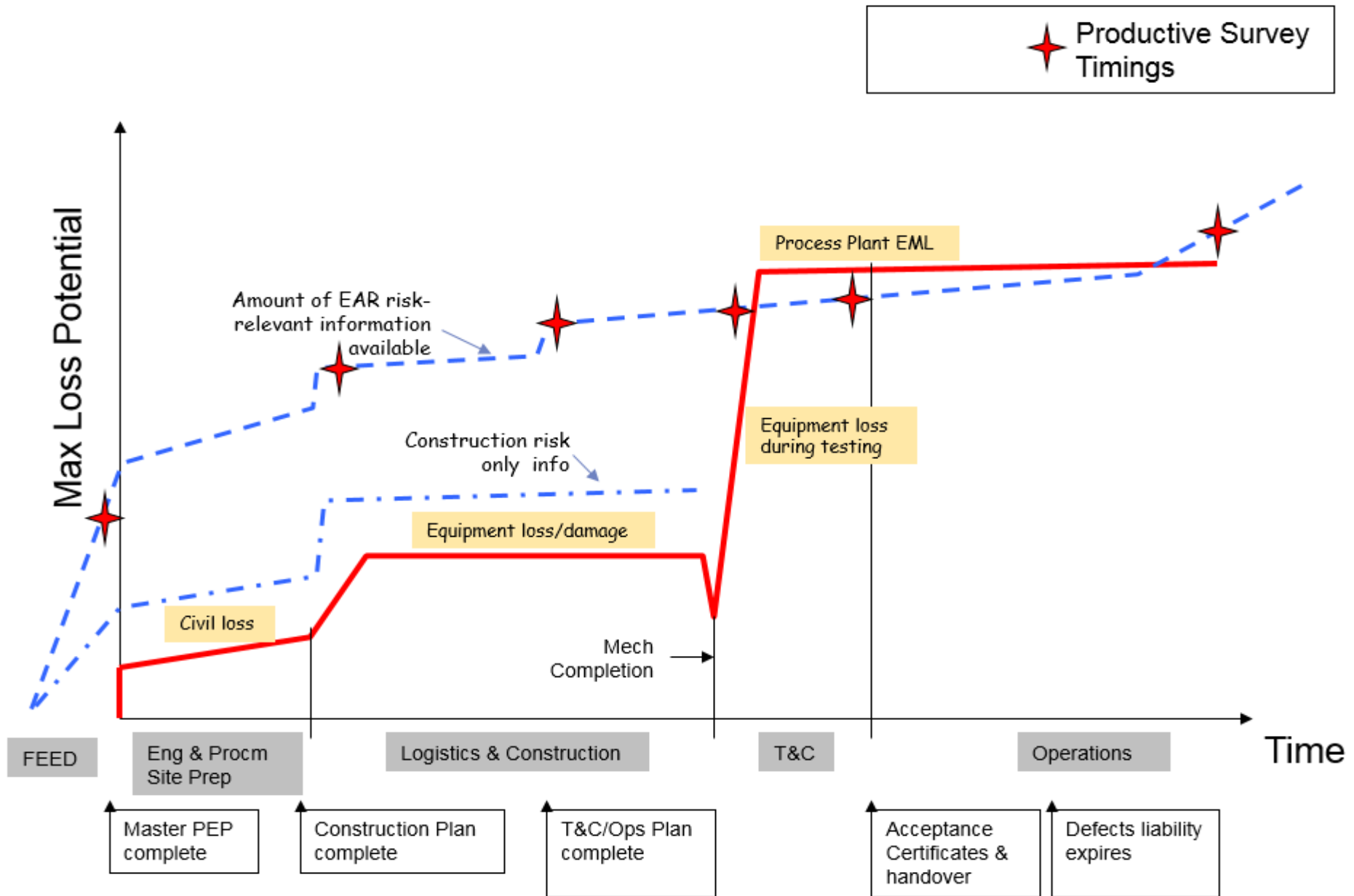
## Operating Facilities

- Inherent risks – e.g. process conditions
- Location risks – e.g. windstorm, earthquake, flood, political
- Hardware – i.e. equipment design and construction
- Software – i.e. management systems
- Emergency control

## Construction Projects

- Project Management
- Equipment/Technology
- Transport and Construction Methods
- Testing & Commissioning

# Construction Project Risk Profile



# Survey Methodology

## Discussion with :

- Project Engineering
- Construction
- Commissioning
- QA/QC
- Safety

## Site tour

- Hardware review
- Spot reviews

# Survey Methodology

## Project Quality Based On The Following Criteria

- Overall Project Management
- **Site HSE Management and HSE Performance**
- **Site Construction Activities**
- Site Housekeeping
- **QA organisation and controls**
- Control of ignition/fire/explosion risks
- Site Segregation and Security
- **Laydown Arrangements including transit & storage.**
- Risk of Impact/vehicle damage
- **Commissioning Organisation**
- **Commissioning Arrangements**
- Natural Perils Exposure
- Sabotage and Terrorism

# Key Contents of Construction Survey Report

- Project Description
  - Scope of Work
  - Project Organization & Contractual Arrangement
  - Geotechnical Condition
  - Transportation & Storage
- Project Status
  - Schedule
  - Cost
- Project Management
  - Design & Engineering
  - Construction Methodology
  - QA / QC
  - Commissioning \ Start-up

# Key Contents of Construction Survey Report

- Site Exposures
- Fire Protection
- Loss Estimates
- Risk Recommendation



**THANK YOU**

**Q&A**