



**FLNG Global  
FLAME 2018**

SOLUTIONS...DEFINED, DESIGNED, AND DELIVERED.

# **RISK AND INSURANCE ISSUES FSRU TERMINAL GAS IMPORT SCHEMES**

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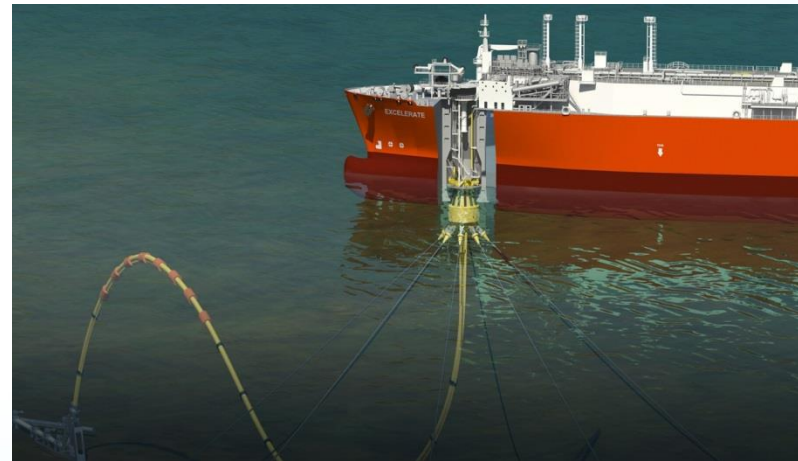
# CONTENTS

- The LNG FSRU terminal risk arena
- Variety of Investor schemes and business models
- Project risks and profiling
- Contractual risk complexity and allocation
- Project insurance solutions
- Investor balance sheet protection
- Third Party Liability regimes
- Political risk mitigation
- Conclusions

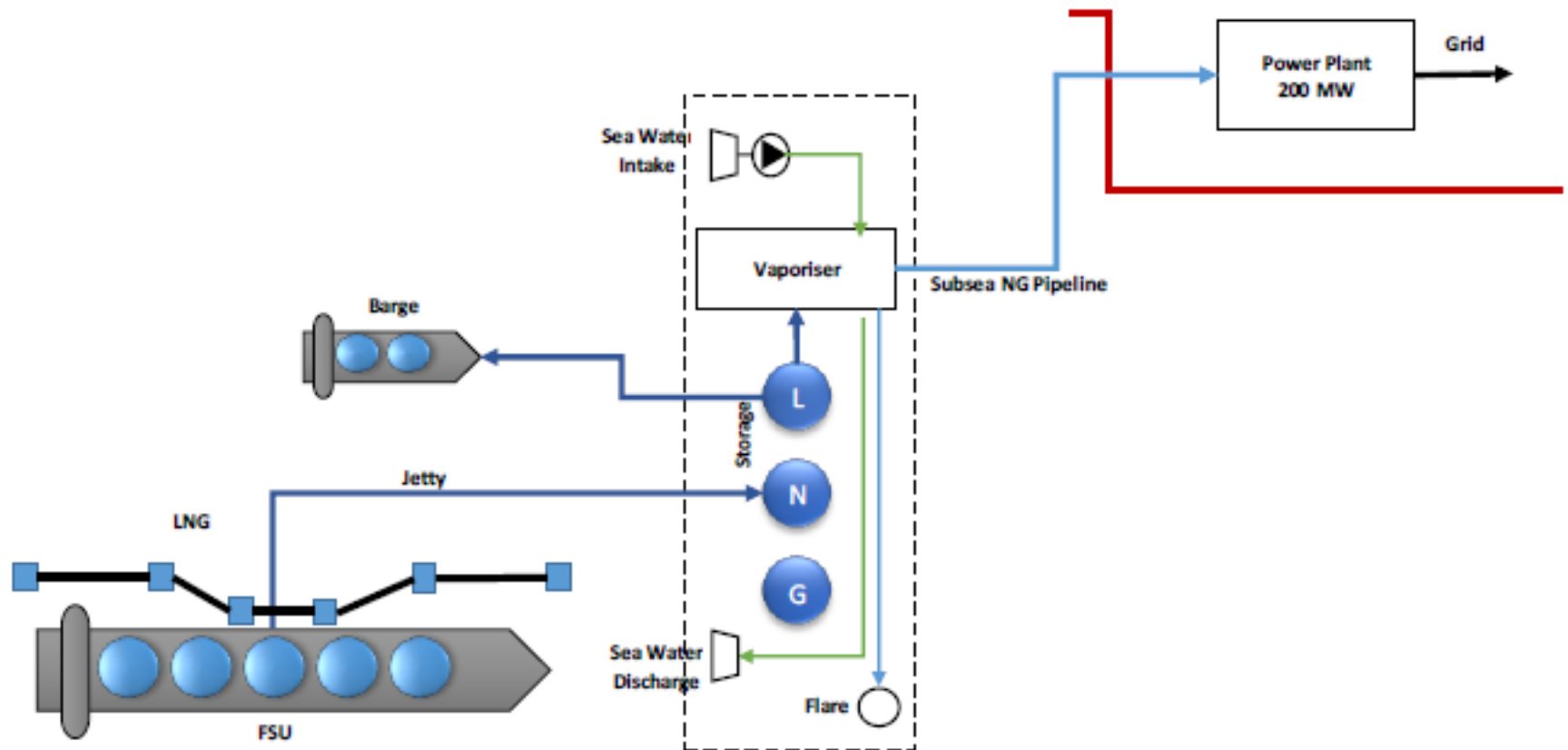
## FSRU Risk Management and Insurance issues

- Complex risk relationships between Terminal operator/ FSRU owner / LNG trader.
- Risk and insurance issues vary according to the:
  - Location and gas supply systems in place.
  - Type of FRSU / FSU and jetty interface solution envisaged
  - Business models – Revenue / Tolling / BOO schemes
  - Proposed FSRU lease and charter party agreement.
  - Gas off-take agreement and the back to back gas supply agreement in place
  - Nature of port terminal arrangements envisaged.
  - Contingent risk exposures – pipelines / power stations

They are all different !



## Gas to Power investments



## Varied FSRU terminal Investor profile globally

- LNG Majors working on enhancing their value chains
- LNG Bunkering transport companies
- LNG traders
- Power Utilities
- Private Equity
- Gas utilities
- Private sector and entrepreneurs
- Public sector / Government departments
- FSRU shipping companies
- BOO / BOOT – Contracting models

## What are these investors seeking?

- Investors want consultation early:
  - Contract reviews for insurance purposes
  - Risk profiling against contractual positions
  - Balance sheet protection for financing and imposed contractual positions



# PROJECT RISKS AND PROFILING



## Project risks

- Jetty / Breakwater wet work damage
- Typhoons / Nat Cat
- Offshore pipe lay damage
- Contingency from FSRU
- Process risks - high pressure gas / revaporisation
- LNG Supply chain dependency
- Incoming LNGC foul berthing / collision
- Shipping density / congestion / liabilities
- Power integration
- Terrorism
- Gas Product liability
- Non payment risk



## LNG Terminal – Explosion During Pressure Testing



## LNG Carrier Overfilling Incident at Terminal





## Contingent risks from gas grids / compression



## Project Phase Risk Profiling - Project, FSRU, and incoming LNGC Events

- Analyse risks in the project phase, including defects liability period;
- Assess the USD risk quantum;
- Explore mitigation options:
  - Insurance;
  - Transfer of risk under contract, within the context of the Project.
- Discuss insurability and tolerance to retain risk
- Include contingent risks from the FSRU and to gas grids / power stations as necessary.
- Political risks (if external investors to the country concerned)

## Project Phase Risk Profiling – Example Event

Risk	Consequences	Exposure (USD million)			Insurability / Transferability	Comments
		PD	DSU/BI	TPL		
<b>Pressure rupture of pipeline during pre-comm / commissioning</b>	Pipe blast damage near jetty head due to hydro/pneumatic test failure or weld failure and some damage to jetty trestle and topsides	5.0	30.0	2.0	Yes, in the CAR, DSU and TPL policies	<p>The Sub-concession and Construction &amp; Port Services Agreements provide “at law” responsibility for people and property risks and exclude liability for the other party’s consequential losses. The EPC contract will, in due course, incorporate provisions governing the responsibility allocation between the EPC contactor and Client. (EPC contractor to be responsible for the performance of “works”; assume Client Provided Items will be in the care, custody and control of EPC contractor.)</p> <p>The Term Sheet for the FSRU and the Construction and Port Services Agreements’ Force Majeure provisions do not relieve Client from ongoing fee payment obligations.</p> <p>As a minimum, consider DSU insurance for financial penalties payable to FSRU owner and operator and also ongoing Port Services charges, for a minimum of 12 months.</p>

# **CONTRACTUAL COMPLEXITY AND RISK ALLOCATION**



# FSRU Terminal Projects – Contractual Complexity

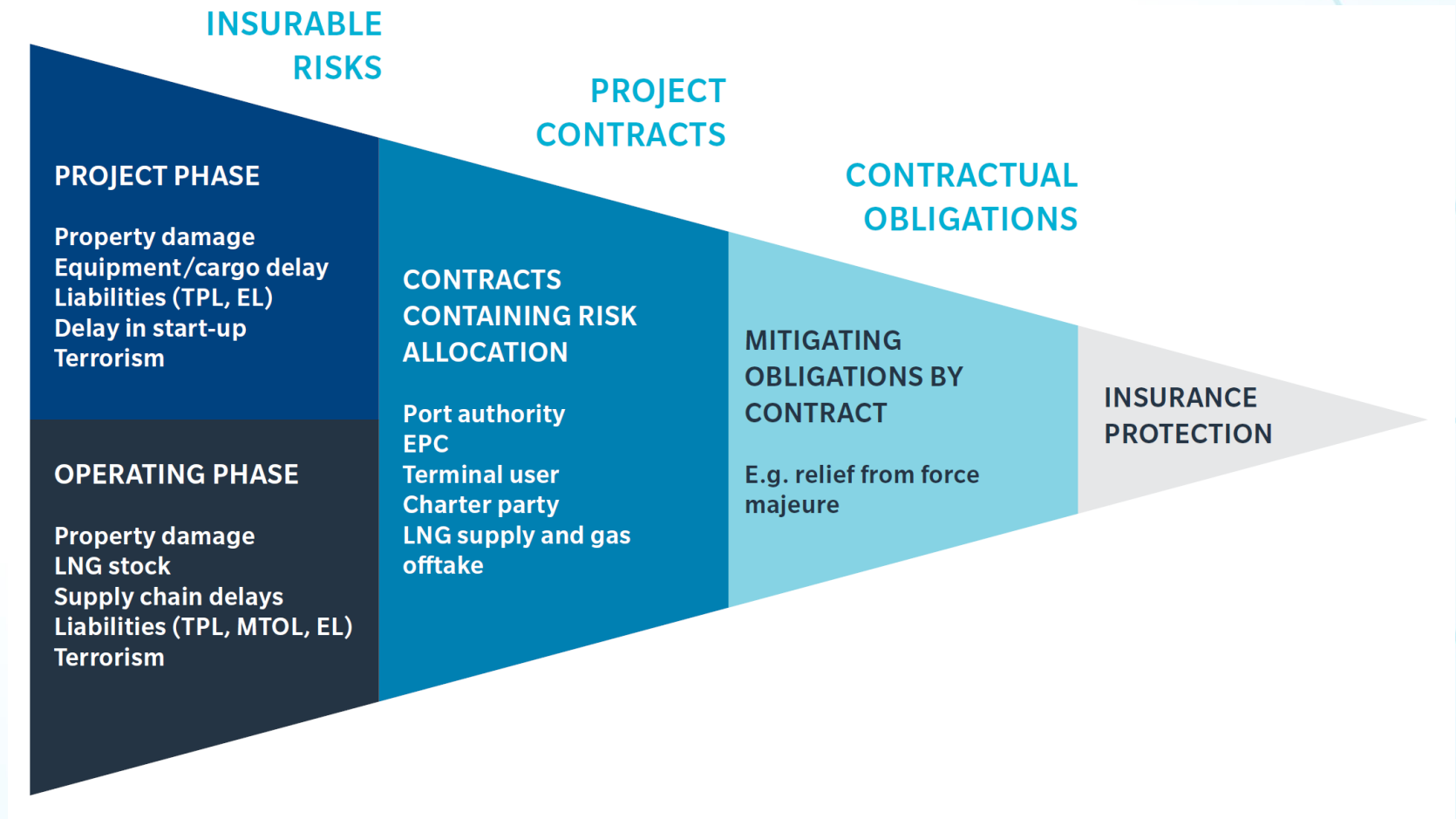
## Key Contracts

- Joint Venture Agreement
- LNG supply Agreement
- **LNG Terminal User Agreement**
- Gas Sales Agreement
- **EPC Contracts**
- **FSRU (New build or refurbishment)**
  - FSRU Time Charter Agreement or
  - FSRU purchase and
  - O&M Agreement
- **Port Condition of Use Agreement**
- Port Services Agreement
- Credit Agreement

## Key Components Reviewed

- Extent of Force Majeure
- Take or Pay (Back to back)
- Hold harmless / Indemnities
- Insurance requirements
- Ship or Pay
- Price Formula / Price Risk / Margin Risk
- Capped Liabilities
- Delay and default
- Title and responsibility to LNG and gas

# Contract Risk Review for Insurance purposes



# INSURANCE SOLUTIONS

# Typical Risks That Can Be Insured

## TERMINAL OWNER

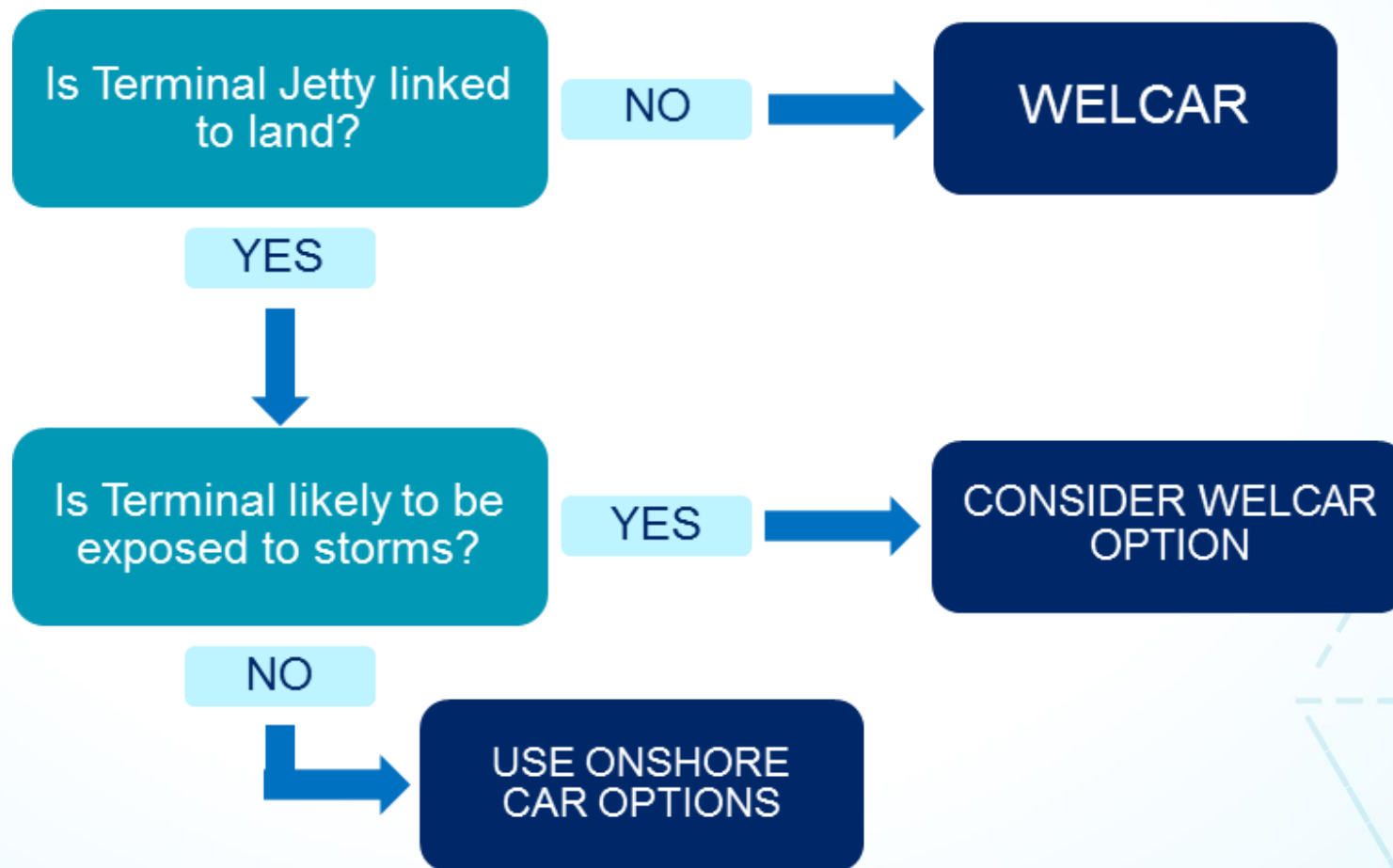
- Jetty and process / pipeline assets
- Breakwaters
- Gross profit
- Contingent Business Interruption (LNG Chain)
- Marine and Third Party Liabilities
- Charterer's Liability
- Terrorism and PV
- CEND

## FSRU PROVIDER

- FSRU Hull
- Loss of Hire
- P&I
- CEND

LNG Cargo

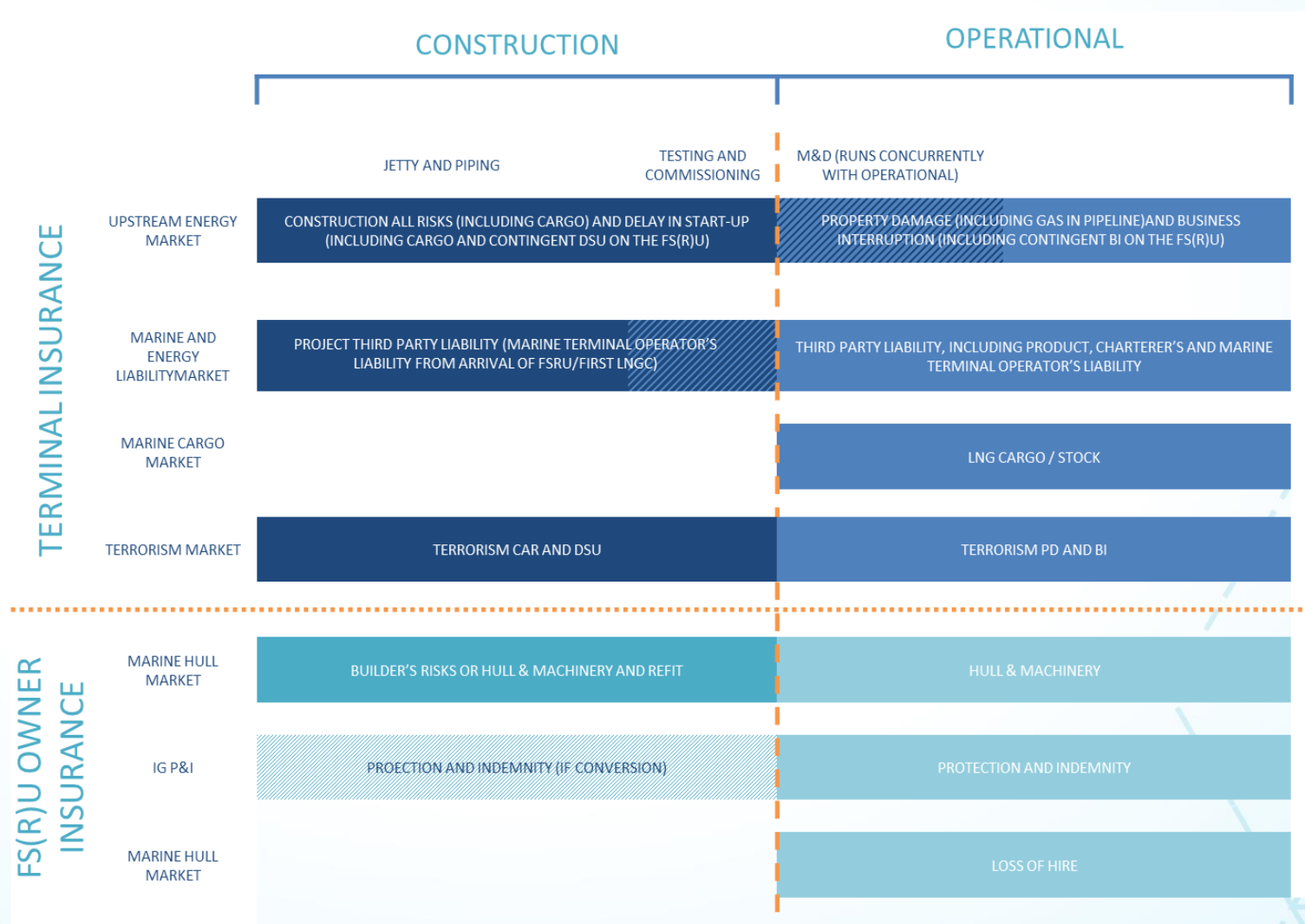
## FSRU Terminals – Choice of Project Insurance forms



# Project Phase FSRU Terminal Contract Works Insurance Options

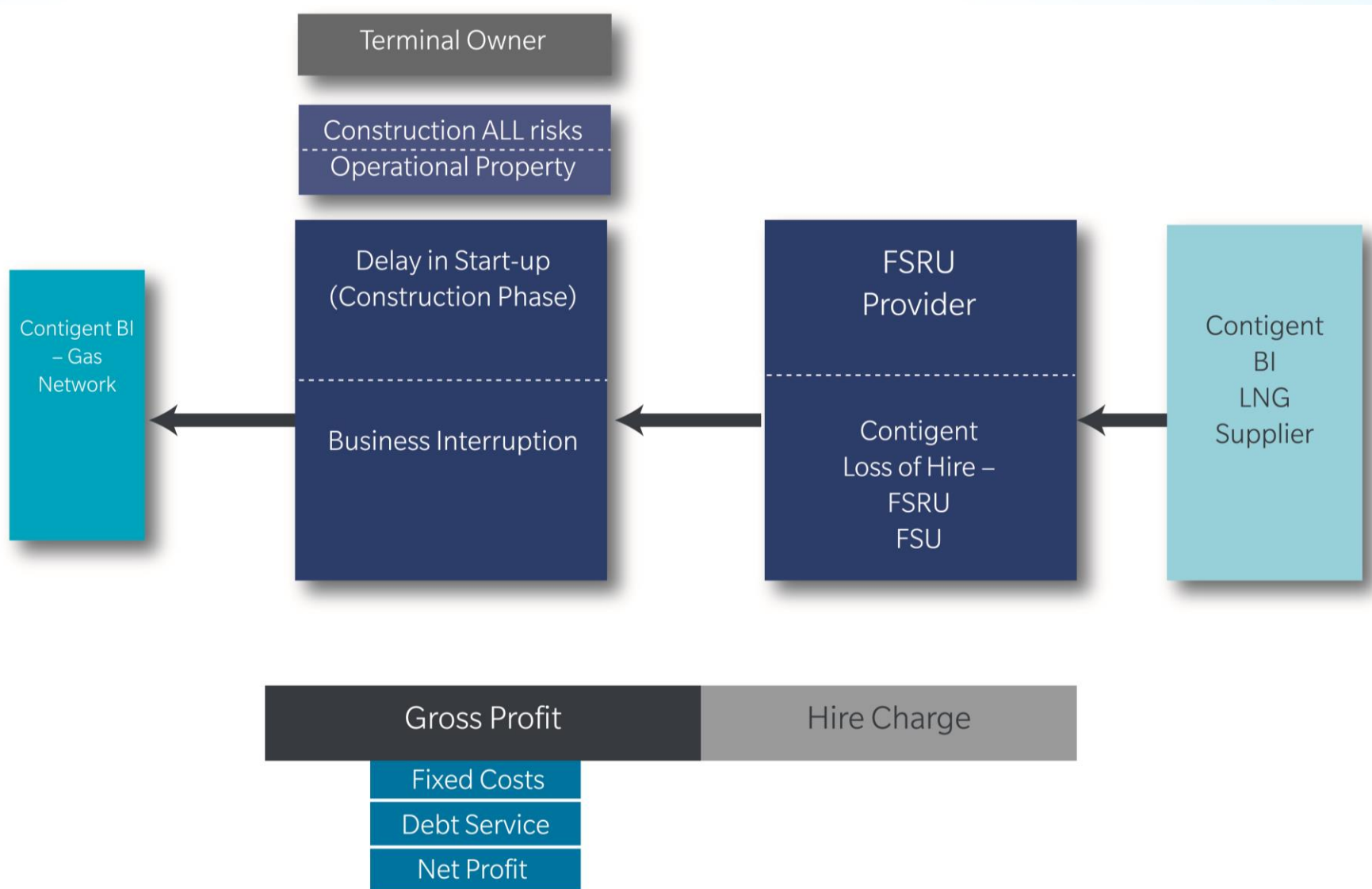
ISSUE	ONSHORE CAR FORM	OFFSHORE WELCAR FORM
<b>Premium Cost</b>	Lower cost option	Higher cost than Onshore CAR
<b>Faulty Part Coverage</b>	Coverage included to full value on piping and onshore LNG facilities	Coverage sublimit available for all work including trestles
<b>Stand-by Charge Coverage</b>	None	Sub limited for offshore fabrication vessels
<b>Action of the Sea Coverage</b>	Excludes risk up to 1/20 year storm or wave	Included in WELCAR
<b>Offshore Pipe Lay Coverage</b>	Excluded for long pipe lays	Typical form used
<b>Delay Coverage following damage</b>	Available – good capacity	Sufficient DSU capacity up to USD 150M but more expensive
<b>Contingent FSRU Delay Coverage</b>	Stand Alone Policy Required	Can be imbedded within DSU policy
<b>Marine Warranty Surveyor</b>	Not Required except for Project Cargo	Market Requirement (paid for by market)

# FSRU Terminal – Typical Project and Operational Insurance Program Specifications





# Protection of the FSRU Terminal Owners Capacity Fee – Project Bankability / Counterparty Financial Commitments



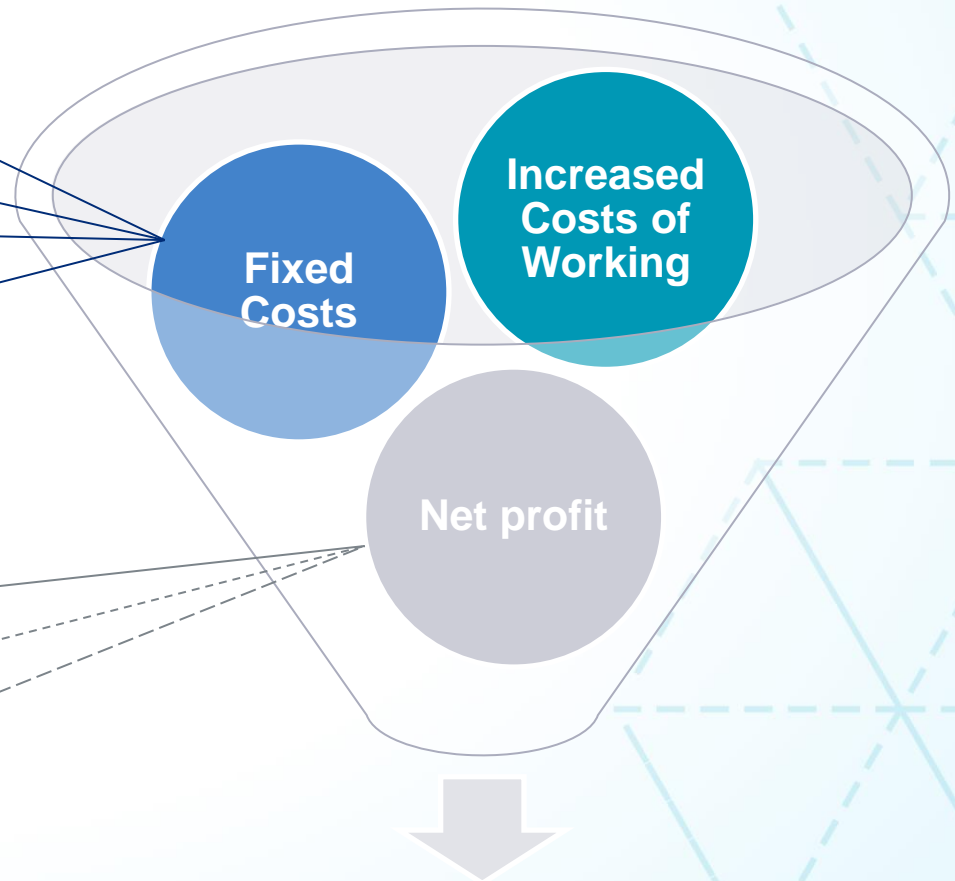
# FSRU LNG Terminal DSU / BI Insurance Indemnity components

## Components:

Port Service Charges  
FSRU Hire  
Debt Service  
Terminal O&M Costs

## Sources:

Tolling Profit  
(Gas Trading Profit)  
(Power Generation Profit)



# DSU/BI Indemnity

# Third Party Liabilities

LNG SUPPLIER

TUGS AND TOWAGE

LNG SUPPLY SHIP

JETTY AND TERMINAL OWNER

FSRU OWNER

Charter Party Agreement

LNG Supply Agreement

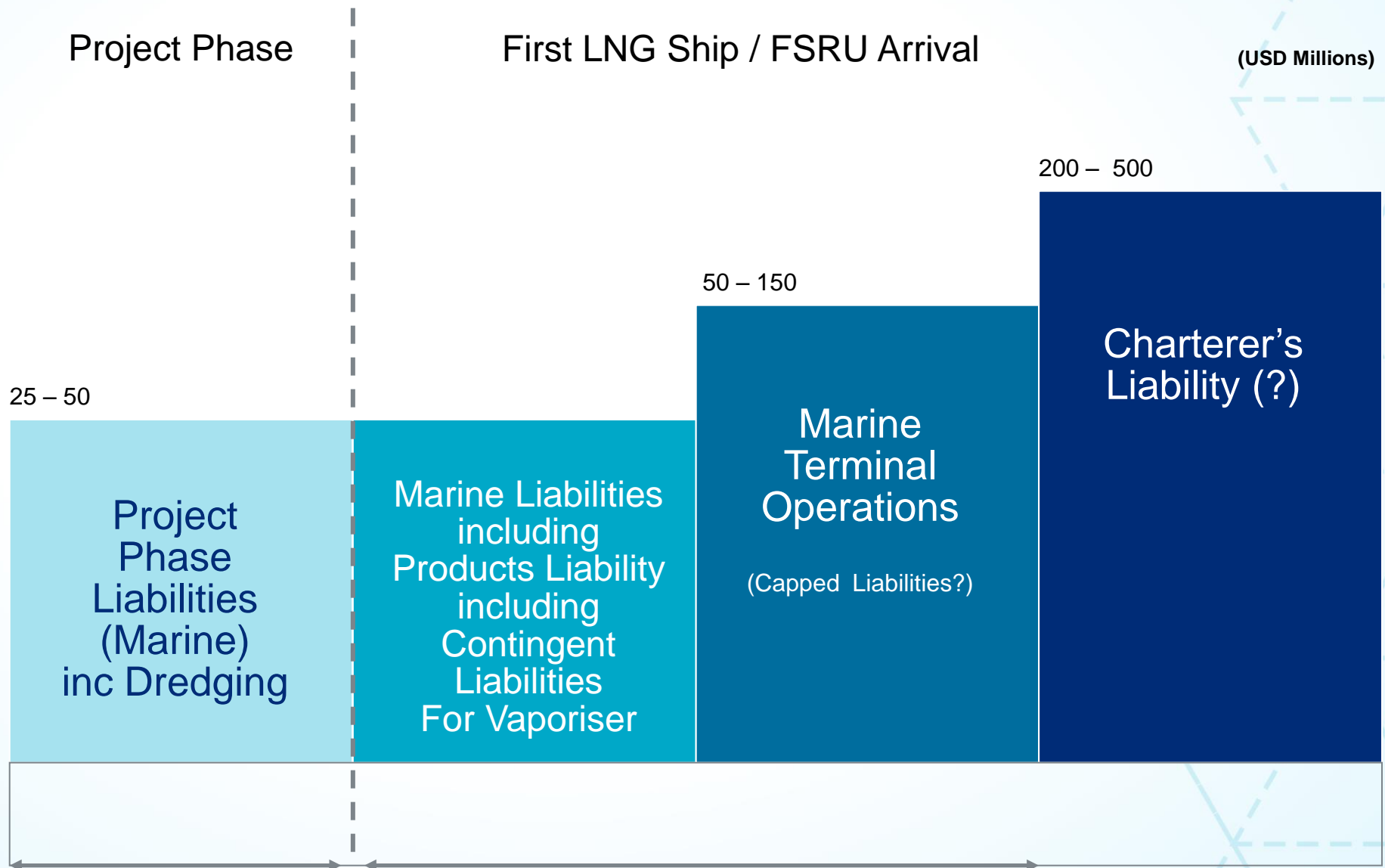
**Charterer's Liability**  
**Cargo Owners Liability**  
**Primary Towage Liability**

**P&I**

**Project Liabilities**  
**Marine Terminal**  
**Operators Liability**  
**Non Marine Third Party Liability**  
**Charterers Liability**

**P&I**

# Third Party Liabilities



# Political Risk Insurance for FSRU Terminal and Power investments

- **Confiscation, Expropriation, Nationalisation & Deprivation (CEND) cover:**

- Indemnifies investor for losses arising from government intervention
- Cover can be discussed for “creeping expropriation”
- Indemnity is up to 100% of asset’s Net Book Value
- Must be cross border

**AVAILABLE**

- **Arbitration Award Default (Breach of Contract)**

- Breach of contract with a government counterparty
- Cover is provided after the insured has won an arbitration against the government counterparty and the government fails to honour the award

**MORE  
DIFFICULT**

- **Port Licence Cancellation**

- **Non payment – Trade Credit - subject to counterparty credit worthiness**

**POSSIBLE**

## Conclusions

- Think Risk and Insurance early
- Be nimble with risk in contracts – seek deviation from the norm
- Budget for cost
- Study all the options for insurance
- Protect your terminal balance sheet

# THANK YOU

Questions?