

WATSON FARLEY
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COMMERCIAL CONTRACTS FOR THE OVERALL VALUE CHAIN

DESIGN, CONSTRUCTION, INSTALLATION AND COMMISSIONING ISSUES

FLNG GLOBAL CONFERENCE

AMSTERDAM, 8 MAY 2017



Image courtesy of Royal Dutch Shell

LNG VALUE CHAIN

ONSHORE FACILITIES



OFFSHORE FACILITIES



CURRENT FLNG PROJECTS

Project	Location	Operator	Contractor	(Sub) Contractor
PFLNG Satu	Kanowit Field, Sarawak, Malaysia	Petronas	Technip/DSME	—
Prelude	Timor Sea, Australia	Shell	Technip/Samsung	—
PFLNG2	Rotan Field, Sabah, Malaysia	Petronas	JGC/Samsung	—
Coral FLNG	Rovuma Basin, Mozambique	Eni	TBA	—
Congo FLNG	Congo-Brazzaville	New Age/Eni	[SBM/JGC]	—
Caribbean FLNG	TBA	TBA	Exmar	Wison/B&V
Kribi	Cameroon	Perenco/SNH	Golar	Keppel/B&V
Fortuna	Equatorial Guinea	Ophir Energy	One LNG	Keppel/B&V

DESIGN and FUNCTIONALITY

FLNG



FSRU



FRONT END ENGINEERING DESIGN (FEED)

- Fundamental Design Elements:

- Floating
- Production
- Storage
- Offloading

- FEED also integrates:

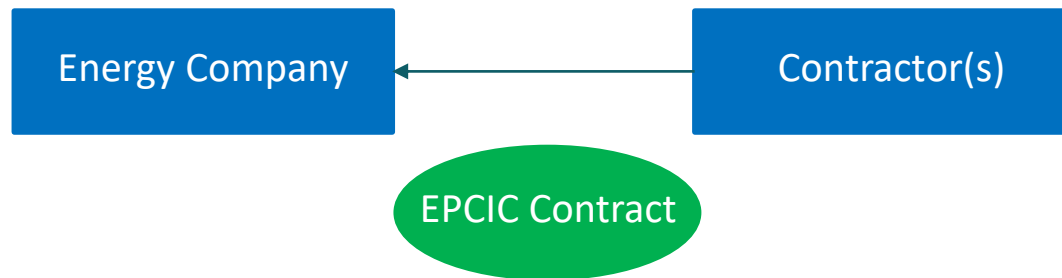
- Gas and liquid specification
- Reservoir characteristics
- Mooring location factor
- Metocean condition

Purpose of FEED:

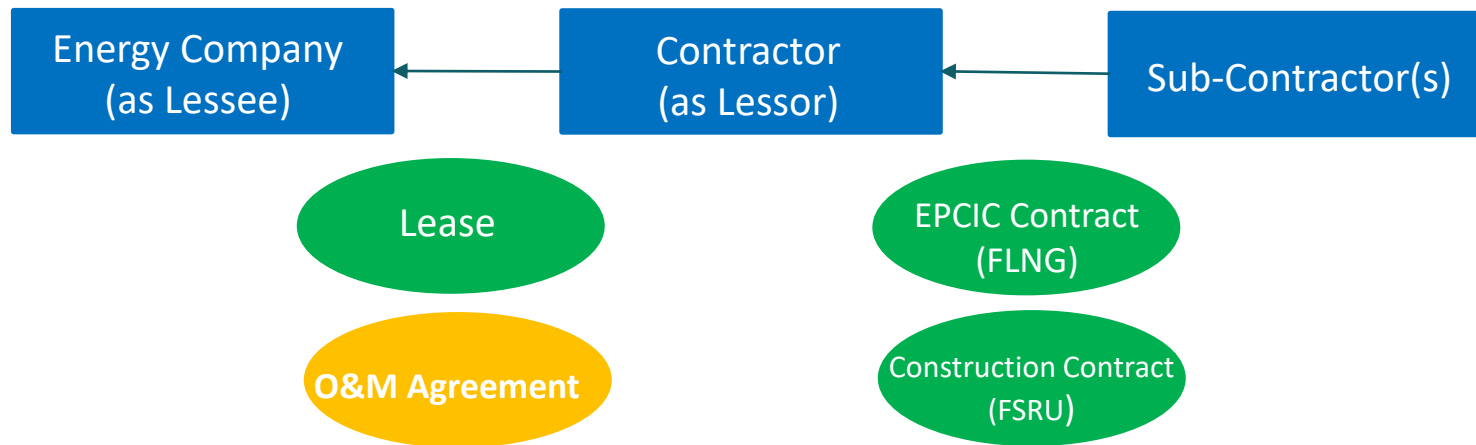
To establish whether technologically gas can be delivered, processed, liquefied, stored and offloaded within prescribed design parameters which are economically acceptable in terms of the unit's construction and subsequent operation.

EPCIC CONTRACT / LEASE

EPCIC:



LEASE:



EPCIC CONTRACTS



FSRU:

- Generally based on a standard shipbuilding contract with additional provisions for testing of regasification performance

FLNG:

- Bespoke, with Contractor designing, engineering and constructing the unit against a “functional” scope of work
- “Wrapped” approach where hull construction and topsides contractors are jointly and severally liable

CONSTRUCTION PHASE

- Sub-contacting
- Variation Orders
- Supervision Rights
- Transfer of Title/Risk
- Step-in Rights
- Testing and Inspection
- Liability and Indemnity Regime



INSTALLATION / COMMISSIONING (FSRU)

- Delivery of FSRU (transfer of title) takes place at shipyard
- Regasification performance may not have been tested prior to delivery.
- Acceptance under Charter/Lease:
 - FSRU to have been physically delivered at Site
 - FSRU to have successfully completed performance testing, capable of regasifying LNG and sending out designated quantity of regasified LNG



DELAYED / DEFICIENT PERFORMANCE (FSRU)

- Owner's rights against shipyard for delay and/or deficient performance
 - Liquidated damages for:
 - Delay in completion of work
 - Failure to meet performance/requirement
- Rectification by shipyard of deficient (regas) performance
- Termination of Contract and redelivery of FSRU?

INSTALLATION / COMMISSIONING (FLNG)

Ready for Sailaway:

All aspects of work have been performed to the extent they can be completed at yard and all systems successfully tested

Ready for Start-up/Production:

Unit is permanently installed, ready to receive hydrocarbons and all systems have been tested, inspected and (where possible) commissioned

Commencement of Production / Final Completion:

Unit has been commissioned, tested and able to perform in accordance with Contract terms

DELAYED / DEFICIENT PERFORMANCE (FLNG)

- Buyer's rights against Contractor for delay and/or deficient performance:
 - Liquidated damages
- Termination of Lease
 - No title has been transferred to Lessee
 - Lessee's claim for damages against Lessor
- Termination of EPCIC Contract
 - Title remains with Buyer
 - Buyer's claim for damages against Contractor
 - Right to transfer back title against repayment of contract payments?



CONTRACTOR INTERFACE

- Inter-relationship between Contractors critical for project success:
 - Hull/Topsides Contractor(s)
 - Subsea Contractor(s)
 - Infrastructure
- Deemed Acceptance:
 - Contractor fulfilled all of its obligations to achieve Commencement of Production / Final Completion, but conditions required have not been met for reasons outside of Contractor's control.

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