LNG BUSINESS STRATEGIES: TRAINING FOR PARTICIPANTS FROM SAARC COUNTRIES

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LNG Contracts
Contents

- Overview of LNG supply chain
- LNG Supply Projects and Markets
- Principles and Risks - formulation of LNG Contracts
- LNG Sales and Purchase Agreements
- Master Sale and Purchase Agreement
- LNG Tolling
- LNG Shipping contracts
- LNG Regasification Contracts
- Gas Supply contracts
- Gas Transportation Agreements
- Future of LNG Contracts
A typical LNG Value Chain can be represented through following image:
## LNG Supply Projects

### Liquefaction Project Development Risks

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Impact on LNG Project Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Economics</td>
<td>Long-term sales contracts that allow for a sufficient return typically underpin the financing of LNG projects. High project costs or changing market prices can have a large impact on when or if a project is sanctioned, and cost overruns post-FID can impact project returns.</td>
</tr>
<tr>
<td>Politics &amp; Geopolitics</td>
<td>Permitting may be time consuming. National or local governments may not be supportive of exports and could levy additional taxes on LNG projects or establish stringent local content requirements. Political instability or sanctions could inhibit project development or operations.</td>
</tr>
<tr>
<td>Regulatory Approvals</td>
<td>Regulatory approval may be costly and extends to the approval of upstream development and pipeline construction. Local environmental opposition, including from indigenous groups, may also arise.</td>
</tr>
<tr>
<td>Partner Priorities</td>
<td>Not all partners are equally committed to a project and face different constraints depending on their respective portfolios. Ensuring alignment in advance of an FID may be difficult.</td>
</tr>
<tr>
<td>Ability to Execute</td>
<td>Partners must have the technical, operational, financial, and logistical capabilities to fully execute a project. Certain complex projects may present additional technical hurdles that could impact project feasibility.</td>
</tr>
<tr>
<td>Business Cycle</td>
<td>Larger economic trends (e.g. declining oil prices, economic downturns) could limit project developers’ ability or willingness to move forward on a project.</td>
</tr>
<tr>
<td>Feedstock Availability</td>
<td>The overall availability of gas to supply an LNG project may be limited by technical characteristics of the associated fields or the requirement of long-distance pipelines.</td>
</tr>
<tr>
<td>Fuel Competition</td>
<td>Interest in a project may wane if project developers or end-markets instead seek to develop or consume pipeline gas or competing fuels, including coal, oil, or renewables.</td>
</tr>
<tr>
<td>Domestic Gas Needs</td>
<td>Markets with high or rising gas demand may choose to use gas domestically rather than for exports. This often results in new or existing liquefaction projects being required to dedicate a share of production to meet domestic demand. In some cases, it may also limit the life of existing projects.</td>
</tr>
<tr>
<td>Marketing/Contracting</td>
<td>Project developers generally need to secure long-term LNG buyers for a large portion of project capacity before sanctioning a project. Evolving or uncertain market dynamics may make this task more difficult.</td>
</tr>
</tbody>
</table>
Natural gas markets around the world can be broadly divided into four main groups. These are shown in figure 1 below.

**Figure 1: Global gas markets.**
LNG Value Chain & Contracts / Agreements

- LNG value chain is a series of separate but interdependent activities
- Each activity has its own commercial agreements and arrangements

Gas Production
- GSA: Gas Sales Agreement
  - Transportation agreement

Liquefaction / LNG Marketing
- SPA: Sales & Purchase Agreement
  - Liquefaction agreement

LNG Transportation
- MSA: Master Sale Agreement
  - Storage agreement

Regasification / Storage / Pipeline
- Transportation agreement
  - Storage agreement
  - Scheduling agreement

End user segment
- GSA: Gas Marketing agreement
Sellers Risks

- Project
  - Upstream
  - Technology
  - Construction
  - Operation
- Financing
  - Funding
  - Revenue
  - Returns
- Legal & Regulatory

Buyers Risks

- Demand - fluctuations
- Supply - Reliability
- Pricing - Competitiveness
- Contract - effectiveness
- Financial - soundness
LNG Contracts – Seller’s Vs Buyer’s Considerations

**Sellers’ Motivations**
- Reliable and credit-worthy offtakers
- Commitments underwriting all available LNG export capacity
- Highest possible sales prices
- Limited destination and volume flexibility
- Reliable legal framework governing contract

**Buyers’ Motivations**
- Reliable supply for a defined term
- Offtake terms matching buyer’s needs in terms of timing, quantity, pricing, and flexibility (destination and volume)
- Reliable legal framework governing contract
Negotiation and finalization of a typical LNG sale & purchase agreement (SPA) is a lengthy process and takes several months to years.

Several milestones between the parties are documented before a SPA is finalized:
- Term sheet
- Letter of intent (LOI)
- Memorandum of understanding
- Heads of agreement

Typically, HOA represents one step before definitive agreement (SPA).

These preliminary documents are normally not legal binding and give sufficient time and opportunity to parties to resolve any dispute and move ahead.

Once all the issues, milestones and condition precedent (CP’s) are met then the main agreement - LNG sale & purchase agreement is signed between the seller and buyer. This SPA is the bridge between the liquefaction plant and the receiving regasification plant.
LNG - SPA

The SPA is a detailed agreement. While there are various common clauses, there is no single standard world SPA format. Parties negotiate and develop their own SPA. A short term model contract has been developed by GIGNL.

SPA lays down all possible clauses to help smooth implementation. While it contains numerous clauses, following clauses are very important:

- Commitment
- Term
- Transportation & Delivery
- Volume
- Take or Pay
- Diversion rights
- Price

Technical Specifications –

- Measurement & quality of LNG
- LNG specification
- Specifications of LNG ship
- Specifications of jetty etc of the receiving terminal
LNG Sale and Purchase Agreement – Long Term

- The LNG Sale and Purchase Agreement (SPA) is the keystone of the LNG project bridging the liquefaction plant to the receiving regasification terminal.

- LNG SPAs are for Long-term trade; however, there is no worldwide accepted model contract for a SPA, with most major LNG sellers and LNG buyers having their own preferred form(s) of contract.

- Key features of SPAs typically include:
  - Term of 15-25 years
  - Fixed Annual Contract Quantity
  - Pre-Agreed Pricing
  - Firm Take or Pay obligation for buyers of LNG
  - Firm Deliver or Pay obligations for sellers of LNG
  - One party provides LNG transportation (FOB/DES/CIF)

- SPAs typically provide most if not all revenues for an upstream LNG project and provide anchor supplies for development of LNG regasification facilities.
The SPA’s typically also include following clauses:

- Process of Invoicing & Payment
- Currency of payment
- Security of payment - corporate guarantee, revolving letter of credits, prepayment
- International law for arbitration for dispute resolution
- LNG quality
- Force Majeure
- Process for testing & measurement
- Transfer of title and risk
- Taxes, levies and liabilities
- Confidentiality
SPA Terms
Qatar and PSO, 2016

- Definitions and Interpretation
- Scope
- Start date and term
- Source of supply
- facilities
- Annual Quantities
- Quantity flexibility
- Take or Pay
- Allocation Principles—cargoes delivered
- Transfer of Title and Risk
- Transportation and Unloading
- Delivery Programme
- Quality
- Measurement and Sampling
- Contract Price

- Tariff, Taxes and other expenses
- Invoicing and Payment
- FORCE MAJEURE
- OTHER SOURCES OF SUPPLY
- LIABILITIES
- ASSIGNMENT, NOVATION AND SECURITY
- APPLICABLE LAW
- ARBITRATION AND EXPERTS
- TERMINATION
- CONFIDENTIALITY
- NOTICES
- IMPLEMENTATION PROCEDURES AND ADMINISTRATION
- GENERAL
- Schedules
  - A Specification
  - B Measurement and Analysis
  - C LNG vessel Specification
  - D Form of Standby Letter of Credit
LNG Master Sale Agreement

- MSAs are used for short-term or spot sales of LNG

- MSAs typically consist of a main MSA that sets forth the "General Terms and Conditions" and a shorter "Confirmation Memorandum" attached as an appendix
  - General Terms and Conditions contains key terms that will apply to all sales under the MSA - such terms do not result in an obligation to purchase or sell LNG
  - Each executed Confirmation Memorandum constitutes a separate agreement between Buyer and Seller to purchase one or more cargoes of LNG

**Typical General Terms and Conditions**
- LNG quality
- Scheduling
- Performance obligations
- Liability limitations
- Billing and payment
- Dispute resolution
- Force Majeure
- Business Practices
- Representations and Warranties
- Measurement and Testing
- Confidentiality

**Typical terms in an executed Confirmation Memorandum:**
- Quantity
- Price and payment information
- Loading and unloading ports
- Time of delivery (e.g., the "Arrival Period")
- Identification of the LNG Tankers delivering the cargo
- Allowed lay time
- Demurrage rate
- Quality
- Credit support supplied by the parties
### Difference between LNG SPA and LNG MSA

<table>
<thead>
<tr>
<th>Key Parameters</th>
<th>LNG SPA</th>
<th>LNG MSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Term</strong></td>
<td>15-25 years</td>
<td>Indefinite or Several years</td>
</tr>
<tr>
<td><strong>Transaction</strong></td>
<td>Several cargoes over a relatively longer period of time (Long-term sales)</td>
<td>Single cargo (a spot sale) or several cargoes over a relatively short period of time (Short-term sales)</td>
</tr>
<tr>
<td><strong>Financing</strong></td>
<td>used to finance a large LNG project to achieve viability</td>
<td>Usually not used to finance a large LNG project</td>
</tr>
<tr>
<td><strong>Gas Supply and Gas Offtake</strong></td>
<td>Market volatility is an issue as it directly impacts the project economics</td>
<td>Long term supply of gas and viability of downstream markets are not issues</td>
</tr>
<tr>
<td><strong>Construction Risk and Conditions Precedent</strong></td>
<td>Because an SPA is driving the financing of the project, construction risk is an issue</td>
<td>Because an MSA is not driving the financing of the project (and is often used for existing projects), construction risk is not an issue</td>
</tr>
<tr>
<td><strong>Pricing</strong></td>
<td>Generally linked/indexed to Crude or hub-based pricing on a formula</td>
<td>this is reserved for Confirmation Memorandum, and could be a fixed price</td>
</tr>
</tbody>
</table>
# Variations in LNG MSA

<table>
<thead>
<tr>
<th>Key Parameters</th>
<th>Variations in LNG MSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delivery</strong></td>
<td>An MSA will specify whether it covers (i) only deliveries at the unloading port (&quot;delivered ex-ship&quot; or &quot;DES&quot;), (ii) only deliveries at the Loading Port (&quot;free on board&quot; or &quot;FOB&quot;), or (iii) both DES and FOB</td>
</tr>
<tr>
<td><strong>Types of Sales</strong></td>
<td>An MSA will specify whether it covers spot sales (e.g., a single cargo) or short-term sales (e.g., sales of several cargoes over a period of time). An MSA covering firm short-term sales of multiple cargoes may be a hybrid of an SPA and a conventional MSA</td>
</tr>
</tbody>
</table>
| **Consequences of Failure** | Seller's obligations: Specifies the consequences for failure to deliver LNG  
- Liquidated damages  
- Actual damages  

Buyer's obligations: Specifies the consequences for failure to take LNG  
- Take-or-pay with make-up  
- Take-or-pay with mitigation sale credit  
- Liquidated damages |
| **Parties** | An MSA will specify whether (i) a given party must always be the Buyer or Seller, or (ii) either party may be Buyer or Seller |

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Suppliers use MSAs to sell extra cargoes at higher prices to alternate destinations experiencing seasonal peaks in demand.

MSAs serve a different purpose than SPAs & impose different obligations on the parties.
Changing LNG Contracting Terms

Traditional LNG contracting

- Long contract duration 20+ years; Long-term contracts helped underpin the high capital costs, while also ensuring supply security to buyers
- Large contract volumes
- Contract between suppliers and credit-worthy utilities
- Supply from specified export facility
- Fixed destination clauses (i.e., profit sharing on diversions, re-exports)
- Typically indexed to oil
- Mainly large onshore import terminals

Recent LNG contracting

- Shorter contract length; More spot, short- and medium term volumes; more room for contract renegotiation/price reviews
- Smaller contract volumes; More quantity flexibility (i.e., DQT/UQT, cargo cancellation rights)
- Short term contracting between suppliers and various types of offtakers including utilities, portfolio players, traders.
- Supply can come from portfolio
- More flexibility on destination clauses
- More options on price formations (i.e., Hybrid, HH-linked, oil indexation); structural shift to lower slope
- Increased use of FSRUs
Buyer - Short Term vs Long Term Contracts

### Short Term Contracts
- Short-term contracts can help diversify supply but may not always be available at desired prices.
- Short-term contracts well suited to offer flexibility.
- Procurement via short-term / spot LNG likely requires more ongoing negotiation and LNG procurement efforts.
- Supply is not guaranteed through relying on spot cargo purchases, and price varies based on market conditions.
- Short-term and spot purchase are subject to more price volatility.

### Long Term Contracts
- Long-term contracts can offer supply security and contract stability.
- ToP is inflexible, but options like UQT and DQT can provide some flexibility to buyers.
- While there can be price renegotiations built into contracts, there is typically less ongoing negotiation required for the life of the contract.
- Long-term contracts offer guarantees for imported volumes and a fixed price formula.
- Long-term contracts offer more short-run price certainty, but longer-term prices are uncertain and influenced by factors beyond the control of buyers.

### Questions
- Is supply security a paramount concern?
- How important is volume flexibility?
- What is the buyer’s willingness / ability for ongoing supply procurement efforts?
- What volume risk is the buyer willing to take?
- What is the buyer’s appetite for price risk?
Traditionally the liquefaction plants have been owned and operated by same companies that owned gas resources.

Tolling is a new model of LNG plants operations. Customer pays “toll” to run gas through the liquefaction plant.

The model is essentially based on associated risks, fiscal & tax consideration and financing issues.

Plant owner provides liquefaction services and collects toll.

The Plant owner collects the same toll regardless of how much customer pays for gas or gets LNG sales or how much the customer makes or loses on each cargo.

Customers take the risk of volatility in gas prices or LNG prices. They need to pay the plant usage fee (toll) on “use or pay” basis.

This model provides reduced risk to the customers in case of high volatility of prices of gas /LNG. Risk is limited to the usage fee.

Tolling model is popular and well practiced in US: LNG Liquefaction plants at Cheniere, Sabine Pass, Cove Point, Corpus Christi, Lake Charles etc. are operating on tolling model.

Recent contracts show a tolling fee of around US 3$ per mmbtu to reserve capacity of liquefaction plus cost of gas consumed in the plant operations.
LNG Shipping Contracts

Maritime shipping

Three major elements: vessels, cargo, and the contracts

When a vessel is needed to move cargo, it can be employed on
- single voyage basis,
- Time Charter basis, for an agreed period of time

Time Charter

- Vessel chartering and a vessel employment contract between two counterparties: the Owner and Charterer
- Each counterparty responsibilities and concerns, captured in the Charter Party Agreement

Key Time Charter contract terms:
- the vessel’s description
- the time charter period
- the delivery and redelivery range
- the hire rate
- bunker consumption costs
- Owner must provide the Charterer with the vessel’s full description, “Time Charter Description”
  - vessel’s speed, consumption rates, etc.

These are important for the Charterer to be aware of in order to accurately and efficiently plan the voyages which they need to perform during the Time Charter, and plan the cargo operations.

Factors Impacting Choice Between Voyage and Time Charter:

- GSPA/MSA Terms, Market volatility, cargo availability, repositioning of the vessel, freight rates, financial reasons.
- Charterers wishing control of a vessel or a fleet to manage their own needs for cargo transportation and do not want to bear the purchase and running cost of the vessel will be in favor of the Time Charter option.
- Time charter option - a business opportunity with no asset burden for the Charterers.
The Contract is intended to set out the conditions under which the Operator shall:
receive the Vessels sent by the Shipper to the Terminal berth;
unload the Cargoes of said Vessels;
reload LNG quantities from the Terminal to the Vessel;
store the unloaded quantities of LNG;
regasify the quantities of LNG into quantities of Natural Gas with the same Energy Content and transfer them on the Transmission System, subject to Gas Offtake and, when appropriate, gas flared by the Operator pursuant to the Contract;
allow Shippers to exchange quantities of stored LNG should they wish.

Typical Terms:
1. PURPOSE
2. TERM
3. PREREQUISITE FOR TERMINAL ACCESS
4. TITLE, CUSTODY, RISK OF LOSS AND COMMINGLING
5. RECEPTION CONDITIONS
6. GAS QUALITY
7. FORCE MAJEURE AND SUSPENSION OF CONTRACTUAL OBLIGATIONS
8. TERMINAL MAINTENANCE
9. SAFETY AND OPERATIONAL INSTRUCTIONS

1. LIABILITY WITH REGARD TO THIRD PARTIES
2. LIABILITY BETWEEN THE PARTIES
3. INSURANCE
4. CONTRACT REVISION
5. CONFIDENTIALITY
6. TERMINATION
7. ASSIGNMENT
8. MISCELLANEOUS
9. DISPUTES AND APPLICABLE LAW
Gas Sales & Purchase Agreements

eg. RIL/BP GSA

1. Recitals
2. Definitions and Interpretation
3. Duration and Start Date
4. Scope
5. Transfer of Property and Risk
6. Quantities
7. Gas Price
8. Nominations, Scheduling & Allocation
9. Commissioning Period
10. Take or Pay Obligations
11. Sellers’ Supply Obligations
12. Measurement
13. Quality
14. Planned Maintenance
15. Force Majeure
16. Invoicing
17. Security
18. Payment
19. Suspension and Termination
20. Taxes and Duties
21. Liability and Remedies
22. Rights and Obligations of Sellers
23. Governing Law and Disputes
24. Miscellaneous
25. Anti-Bribery
26. Anti-Money Laundering
FUTURE OF LNG CONTRACTS

Average volume and length of new contracts

<table>
<thead>
<tr>
<th>Years</th>
<th>Average length</th>
<th>Average volume (RHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2014</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>2016</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2018</td>
<td>1.5</td>
<td>0</td>
</tr>
</tbody>
</table>

New LNG contract volumes (by seller type)

<table>
<thead>
<tr>
<th>Years</th>
<th>Portfolio</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>2012</td>
<td>600</td>
<td>400</td>
</tr>
<tr>
<td>2014</td>
<td>800</td>
<td>400</td>
</tr>
<tr>
<td>2016</td>
<td>600</td>
<td>400</td>
</tr>
<tr>
<td>2018</td>
<td>400</td>
<td>600</td>
</tr>
</tbody>
</table>

Share of new LNG contract volumes (by price indexation)

<table>
<thead>
<tr>
<th>Years</th>
<th>Oil-linked</th>
<th>EU Gas Hub</th>
<th>HH</th>
<th>Hybrid</th>
<th>JKM</th>
<th>JLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>100%</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>80%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>60%</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>40%</td>
<td>60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>20%</td>
<td>80%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Key shifts in LNG Contracts & Pricing

Share of the indexation type in the new contract volumes

Oil Indexation in LNG Sale Purchase Agreement (SPA) over the years

Source: Shell LNG Outlook 2020

Source: Rystad Energy / IGU World Energy Report 2020
Trends in LNG Contracts, pricing and Shipping

Current scenario of Liquefaction capacity, Growth of short-term trade, lowering of price parity with crude (11%), and Gas-on-gas and Hybrid price indexing, supported by healthy state of LNG shipping are factors that to a large extent allay the consumer’s concerns in LNG business.
TRENDS IN LNG CONTRACTS

Flexible LNG contracts

BSCM

Source: Nexant World Gas Model
Thanks

Q & A