

## **LNG BUSINESS STRATEGIES : TRAINING FOR PARTICIPANTS FROM SAARC COUNTRIES**

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## **Regulatory Framework : Regulations, Policies & Rules**

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- Brief Historic Background
- Government Support
- Role of a Regulator
- Regulators in SAARC Region : Upstream, Midstream & downstream
- Guiding Approach to Regulations & Policies
- Regulatory Framework in India – PNGRB
  - Functions and key role
  - Key regulations for natural gas pipelines
  - Key regulations for city gas distribution – impact of changes in regulations
- Regulatory Framework for LNG Business
  - Industry consultation & proposed regulations
  - Approval for Operations of Gas Exchange



## Brief Historic Background

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- ▶ Initial Investments were by the International Oil Companies
- ▶ Post independence, the SAARC nations adopted socialistic public policy. National oil companies were formed. In India, ONGC was formed in 1956 and IOC in 1959. Pakistan state oil was formed in 1974. In Sri Lanka, Ceypetco was formed after an enactment in 1961. In Nepal, Nepal Oil Corporation, a fully state-owned monopoly, was formed in 1970.
- ▶ After nationalisation of the sector in India, Pakistan and Bangladesh, further investments in the oil & gas sector for its growth were done by the government owned National Oil / Gas Companies (NOC).
- ▶ With the increase in demand, the allocations and pricing have come under severe public criticism and by the end of eighties, it dawned that Government monopolies may not be the most efficient
- ▶ Deregulating, i.e. fair and transparent regulations with active policy support from the government, is required to create level playing field and bring in private players to invest in the sector.
- ▶ Legislations were introduced to establish Regulators in all the SAARC democracies

**Sourcing LNG would be too risky if the downstream domestic markets and gas infrastructure (including) pipeline networks for transmission & distribution and consumer base) are not properly developed.**



## Regulatory Framework : Government Support

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- **Create maximum value from hydrocarbon resources** : Governments are expected to create legal and & fiscal frameworks for promoting and governing gas & LNG development
- **Equitable** : Ensure that the rules, regulations and laws are followed by all – government as well as private sector companies
- **Align to Equitable PPP model** : Formulate long-term policies and enabling legislation which creates legal environment for investors to explore, develop & produce domestic hydrocarbon resources as well as develop projects viz LNG
- **Stable & Sustainable Business Environment** : The objective is to create a stable and viable investment climate for substantive and continued investment in hydrocarbon sector
- **Simple Administrative Working** : Simplify rules, regulations & procedures. Create an independent regulator which works at an arm's length principle and is not seen as a government. Regulator for Upstream, Midstream and Downstream sectors



## Regulatory Framework : Role of a Regulator

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- Independent regulator to oversee, supervise, monitor and advise the government on project approval and implementation
- Key role to monitor the industry players
- Setting tariffs across the value chain. Periodical review involving experts and industry consultation
- Setting & collection of taxes and fees. Clear & consistent approach and not arbitrary or random
- Clarity of role between separate regulators and close coordination : Upstream, Midstream, Downstream and power. Separate safety regulator viz OISD, DGMS
- Petroleum & Explosives Safety Organization (PESO): To provide operational & technical advice, approvals under the explosive act 1884 & petroleum act 1934 pertaining to manufacture, import, export, transport, possession, sale and use of explosives, petroleum products and compressed gasses
- Scope of work – control – jurisdiction
  - City & local natural gas distribution network
  - Natural gas pipelines
  - Petroleum products pipelines
  - Gas/LNG & Petroleum products storage and transportation
  - Gas exchanges
  - Technical standards & specifications including safety standards of oil, gas, petrochemicals plants, equipment, testing & measurement



## Upstream Policies & Regulators in SAARC Region

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- E&P Policies have become more investor friendly due to declining production, more challenging exploratory areas requiring new technologies, mounting subsidies, heavy import bill etc
- Policies vary slightly across countries on cost recovery, profit petroleum, revenue sharing, price benchmarks etc.
- India shifted from nomination to bidding of block, New Exploration Licensing Policy (NELP) to Open Acreage Licensing Policy.
- Pakistan led the revival by offering very attractive terms & conditions for deep offshore and marginal fields from 2012.
- Countries offer bidders exhaustive geological information for bidding and provide access to the major geological, geophysical, logging and geochemical data repository
  - India : Director General of Hydrocarbons (DGH)
  - Pakistan : DGPC / GoP [ Proposal to form a new regulator PPURA, Bill introduced]
  - Bangladesh : Petrobangla / GoB – EMRD
  - Sri Lanka : Petroleum Development Authority (PDASL) with effect from November 2021, subsuming earlier PRDS which was established in 2003 vide an Act.



## Midstream & Downstream Policies & Regulators in SAARC Region

- The region is experiencing a proactive approach by governments to open up sector and move towards market driven scenario to provide competitive environment for more investments by private sector.
- Focus on infrastructure development
- Integration with international market
- Regulators in SAARC Region :
  - **Pakistan** : Oil & Gas Regulatory Authority (OGRA) 2002 through an ordinance, Tribunal
  - **India** : Petroleum & Natural Gas Regulatory Board (PNGRB) 2006, Petroleum Planning & Analysis Cell (PPAC); Central Oil & Gas Data Repository Cell
  - **Bangladesh** : Bangladesh Energy Regulatory Commission (BERC) 2003 through legislation – electricity, gas and petroleum products
  - **Sri Lanka** : Public Utilities Commission of Sri Lanka (PUCSL) 2002 – economic, technical, and safety regulator of electricity and designated regulator for petroleum and water services industries
  - **Nepal** : Oil & Gas activities as per Nepal Petroleum Act No 2040 (1983) and Petroleum Regulation 2041 (1985)
  - **Bhutan** : Bhutan Electricity Authority (BEA) regulates hydropower, National Environment Commission (NEC) monitors the environmental impacts of development, Department of Energy, Ministry of economic Affairs
  - **Afghanistan** : Afghanistan Petroleum Authority (2013), Afghanistan Oil & Gas Regulatory Authority (AOGRA), Project management, governance, regulation and supervision of oil & gas sector
  - **Maldives** : Maldives Energy Authority, Ministry of housing and environment



## Guiding Approach to Regulations & Policies

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- Fair & Transparent – level playing field
- Protect the consumer interest
- Investor friendly
- Help nurture growth of the sector
- Monitor, audit the implementation, performance



## Learnings from Regulations in matured gas markets : US Gas Industry

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- The USA has a matured gas market that is over a century old. The market is surplus with pricing freedom for producers, a business model for pipeline transportation and free market for gas distribution and sales.
- The legacy of Policies, Acts, Regulations and Rules provide deep insight in their role in the growth of a sector, upstream (well-head), midstream (pipelines) and downstream (marketing & distribution)
- The Federal government brought in three Acts in the gas industry
  - **National Gas Act (NGA) 1938 : Towards Regulation :**
  - **The National Gas Policy Act (NGPA) 1978 : Towards De-regulation**
  - **Natural Gas Wellhead Decontrol Act 1989**



## Learnings from Regulations in matured gas markets : US Gas Industry

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- **National Gas Act (NGA) 1938 : Towards Regulation :**
  - Federal Power Commission (FPC)
  - Key objective was to arrest the 'monopolistic business practices' of the Pipelines
  - In 1954, the 'Philips Decision' of the Supreme Court brought the pricing by NG Producers under the Regulatory oversight of FPC.
  - 'Philips decision' allowed producers to sell gas at market prices within the states, but discouraged the Inter-state sales
  - This created a shortage of gas in spite of efforts by FPC to bring in a spate of new Regulations
- **The National Gas Policy Act (NGPA) 1978 : Towards De-regulation**
  - Key objective was to break down the barriers between Intra-state and Inter-state sales and develop a single gas market
  - Allow market forces to establish wellhead prices
  - **In 1978 , FERC Order 436** - Generally known as 'Open Access Order' wherein Inter-state pipelines would act only as transporters
  - The markets gradually turned surplus and FERC Order 500 allowed Take-Or-Pay on Pipeline owners to be passed on
- **Natural Gas Wellhead Decontrol Act 1989 :**
  - NGPA was amended
  - Complete de-regulation of Wellhead pricing FERC Made first sale of gas to be free from regulatory pricing
  - **FERC Order 636 1992** : Separated Transportation and Sales, Referred as the 'Final Restructuring Rules'



## Learnings from Regulations in matured gas markets : US Gas Industry

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- **Key Takeaways :**

- The above illustrates how the tight regulations can impact the growth of upstream, midstream and downstream
- The balance required between Legislations, Regulations & Rules and the Judiciary



## LNG Regulations in Pakistan

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- The main functions of LNG department of OGRA, Pakistan includes formulation of Regulations and the supporting Rules for LNG business
- Processing of applications of LNG project developers for LNG terminal to construct and operate energy receiving terminals
- OGRA came out first with the regulations titled 'OGRA LNG rules 2007'
  - Processing of licenses for transportation, filling , marketing or distribution of LNG
  - Obligations of the LNG Terminal owners / operators
  - Modifications, extension, revocation and renewal of the licenses.
  - Inspection or audit of the LNG terminals are also dealt under the said rules
- Since then, OGRA has played a pro-active role (along-with the government and other stakeholders) in facilitating the emergence of LNG business model and finally the construction and operation of the terminals.
- All proposed LNG terminals / expansion of the existing terminals have been granted permissions as per the regulations/rules.
- Some of the recent notification is 'The LNG terminal and storage access code 2021'



## **Policies and Regulations in India : Petroleum & Natural Gas Regulatory Board (PNGRB)**

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- Key role is to regulate the activities of companies related to:
  - Refining
  - Storage
  - Transportation
  - Distribution
  - Marketing & Sale of petroleum products, Natural Gas and City Gas Distribution (CGD)
- The various functions of PNGRB are to introduce regulations as under:
  - Protect interests of consumers by fostering fair trade & competition amongst entities
  - Register entities to
    - Market notified petroleum, petroleum products and natural gas, subject to the contractual obligations of the Central Government
    - Establish and operate LNG terminals
- Authorize entities to
  - Lay, build, operate or expand a common carrier
  - Lay, build, operate or expand city/local natural gas distribution Network
  - Declare pipelines as common carrier or contract carrier
- Fix Transportation Rate for Common & Contract carriers
- Define Pipeline Access Code
- Define Safety standards
- Define Affiliate Code of Conduct ( for 'Arms-length relationship')



## Key regulations notified by PNGRB for Natural Gas Pipelines

- **Authorization for laying/ building/ operating or expanding natural gas pipelines :** Proposals for new NG P/L can originate from any interested entity through an Expression of Interest (EOI) or Suo-moto from PNGRB also. Authorization is granted on basis of competitive bidding process. Dedicated pipelines are exempted from these Regulation.
- **Network access code :** The main objective of this regulation is to ensure Gas supply to any place from any place for any one at competitive cost on non-discriminatory basis. The Transporter to allocate pipeline capacity on common / contract carrier on non-discriminatory basis.
- **Affiliate code of conduct for entities engaged in marketing & transportation of natural gas :** It defines the boundary between gas marketing activities and transportation activities by any entity who is engaged in both activities. “Unbundling”
- **Determination of tariff for natural gas pipelines :** The regulation defines the principles of determination of transportation tariff on reasonable return basis for Common/ Contract Carrier pipelines for which authorization has been given by Govt./ Regulator. Dedicated pipelines don't come under this regulation
- **Declaration of natural gas pipeline as common carrier or contract carrier :** The main objectives of this regulation are development of competitive natural gas markets and to avoid over investment by optimum utilization of infrastructure
- **Determination of capacity of petroleum, petroleum products and natural gas pipelines:** The regulation defines the procedure, parameters (constant & variable) and frequency of declaration of pipeline capacity in MMSCMD for natural gas by the entity. Capacity determination is based on selected Software Package & Flow Equation approved by Board.



## Key regulations notified by PNGRB for CGD

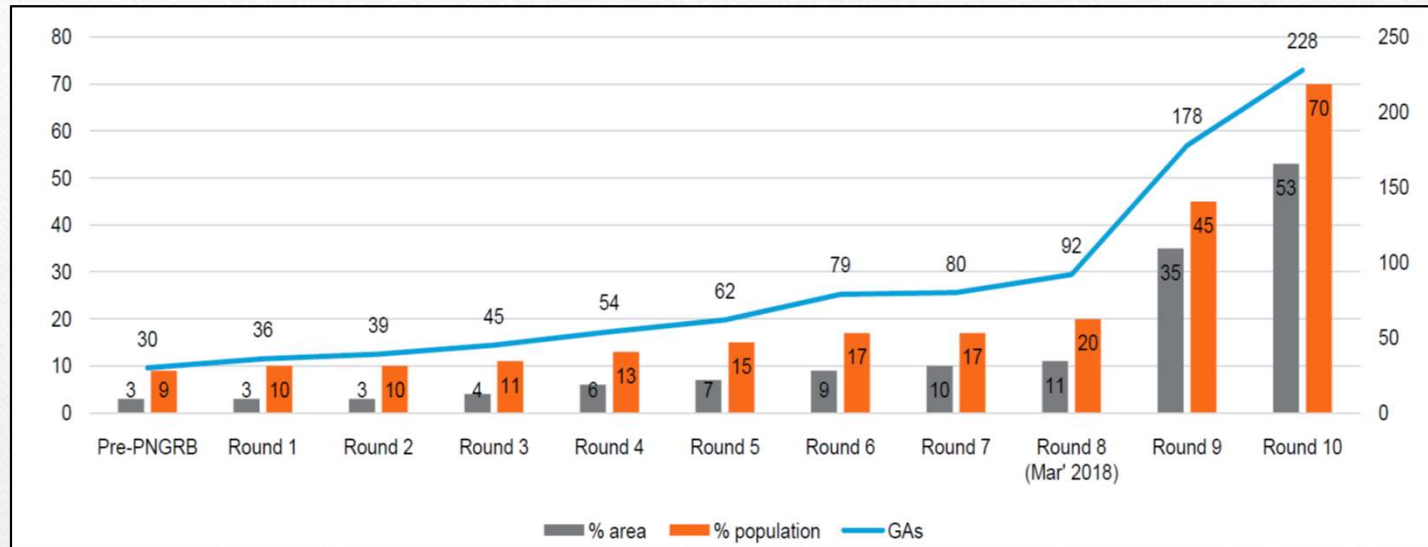
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- Determination of network tariff: dated 19.03.2008 (GSR – 197 E)
- Exclusivity for city gas or local nature gas distribution (GSR – 198 E)
- Authorising entities to lay, build, operate or expand city / local gas pipelines (19-03-2008)
- Technical standards and specifications including safety standards for city gas network – 2008
- Regulation for quality of service - 2008
- Regulations for access code for CGD – 2011
- Regulations for integrity management system for CGD / local gas distribution network – 2013
- Regulation for determining capacity of city or local gas distribution – 2015.



## Impact of investor-friendly regulations

### Case Study : Impact of Amendments in PNGRB Regulations for CGD



- Clear terms & conditions
- More stringent eligibility – quality & serious bidders
- Charge Area – Geographical Area - optimization
- Larger Geographical Areas – economy of scale
- Restrictive condition on gas tie-up within 180 days done away
- Large offer 206 districts + 2 part districts



## Regulatory Framework in India : LNG Business

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- LNG business in India is growing around 4% annually. Slowly moving towards a mature market
- LNG business in India is largely unregulated. Anybody can construct a LNG receiving terminal. The only regulation issued by Petroleum & Natural Gas Regulatory Board (PNGRB) gives freedom to establish LNG/RLNG dispensing unit by anybody irrespective of CGD license being held by anyone. PNGRB is presently in the process of industry consultation and registering the LNG terminal operators in the country.
- Some of the best practices of mature markets of Europe viz third party access, tolling, capacity booking with use or pay provisions, competitive regas charges, Storage & reloading of cargoes, bunkering etc. are being practiced on mutually negotiated terms.
- For construction of terminal, facilities developers can follow European, Japanese or US technical standards. SIGTTO, OCIMF and other international standards are followed for marine operations. Practically worlds all LNG producers have supplied LNG to India.



## PNGRB Regulations for LNG

- To begin with, government encouraged the Industry to invest in the LNG business in India with minimal regulations and with generous marketing and pricing freedom.
- In 2018, Petroleum and Natural Gas Regulatory Board, India has brought out the Regulations for technical standards and specifications including safety standards for liquefied natural gas facilities' regulation 2018
- The objective of these standards are intended to ensure uniform applications of design principles and to guide in selection and application of materials and components equipment and systems and uniform operations and maintenance of LNG terminals of facilities and shall primarily focus on safety respects of employees public and facilities associated with LNG terminals
- The Schedule 1 has all the technical features
  - Schedule 1A : Design and layout of facilities
  - schedule 1B : Electrical systems
  - Schedule 1C : Process systems
  - Schedule 1D : Maintenance and inspection schedule
  - Schedule 1E : Competency assurance and assessment
  - Schedule 1F : Fire prevention leak detection and fire system, and
  - Schedule 1G : Safety management system
- List of relevant standards and references for the different equipment, piping ,and materials as well as the building construction and safety codes to be complied with are provided in the regulations.



## **PNGRB Regulation on LNG Business :**

### **Registration for establishing & operating Liquefied Natural Gas (LNG) Terminals**

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- Regulation cover already established or proposed LNG terminals
- Terminals shall comply / declare / report :
  - With the technical & safety standards laid down by PNGRB
  - Entry & exit point wise design
  - Available capacity over & above its committed capacity for receiving, storing, regas and transporting R-LNG
  - Share the uncommitted capacity available for use by other entities without any discrimination
  - Undertake safety audits during construction, commissioning or operation phase ordered by PNGRB
  - Shall host above information on its website every quarter
  - Any change in ownership, composition of Board and modifications, addition of facilities 3 months in advance
- **The developer shall furnish a performance bond of INR 10.00 million guaranteeing timely commissioning and meeting the service obligations**
- **PNGRB shall issue a certificate of registration : Validity : 25 years, Further extension for 10 years**
- **PNGRB can cancel the registration in case :**
  - Developer fails to meet the milestones of DFR
  - Terminal fails to observe/comply terms of conditions/service obligation/ technical & safety standards
- **PNGRB certificate can not be assigned , transferred by sale, mortgaged, leased or exchanged without prior approval of the Board**



## **PNGRB Regulation on LNG Business**

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- **Proposal for One Nation One Gas Grid : Unified gas transportation tariff:**
  - Unified tariff is the weighted average of approved zonal tariff in respect of the pipeline forming part of the national gas grid system, considering the quantity of gas transported and the quantity of ship or pay, for which the pipeline entity is contractually entitled to recover approved tariff for each such pipeline.
- **Approval to gas exchange to operate under its guidelines**
  - PNGRB has given approval to Indian Gas Exchange to operate and trade gas
  - Contracting – trading hub operator
  - Transmission system operator
  - Trade growing
  - West India LNG price is being quoted by international benchmark operators



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**END OF PRESENTATION  
THANK YOU.**