

# **GAS SALES AND PURCHASE AGREEMENTS**

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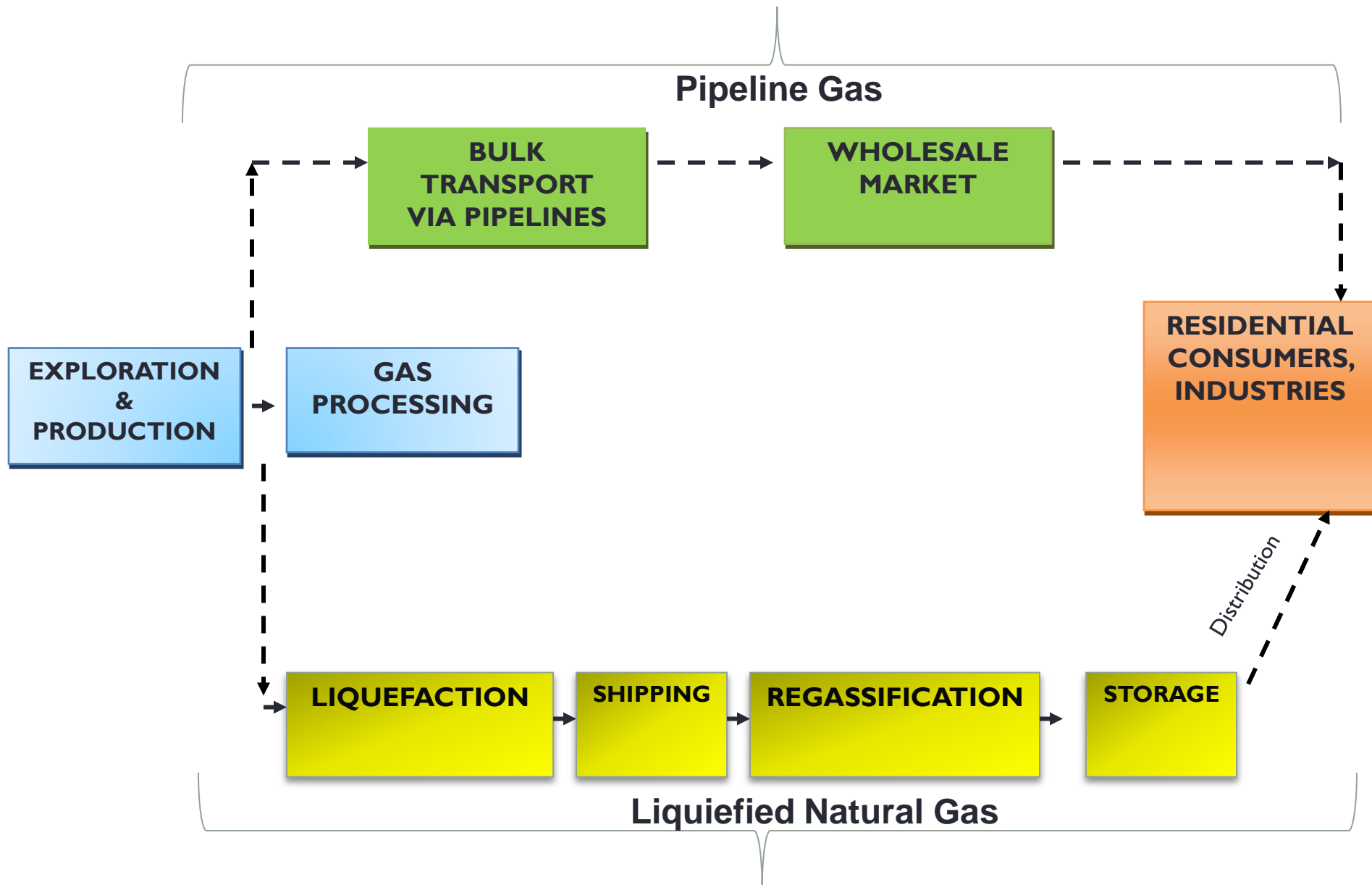
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# **I – INTRODUCTION: The Gas Supply value Chain**

# THE GAS SUPPLY VALUE CHAIN

- **Gas Supply Value Chain**
  - Exploration
  - Processing
    - Natural Gas Liquids (NGLs)
    - Liquefied Natural Gas (LNG)
    - Liquefied Petroleum Gas (LPG)
  - Transportation - Pipeline or shipping
  - Marketing and Distribution

# GAS SUPPLY VALUE CHAIN



## **II - Natural Gas: The Technical Issues**

# NATURAL GAS

- Raw natural gas comes primarily from any one of three types of wells: crude oil wells, gas wells, and condensate wells.
- Natural gas that comes from **crude oil wells** is typically termed associated gas.
- Natural gas from **gas wells** and from **condensate wells**, in which there is little or no crude oil, is termed *non-associated gas*.
- Gas wells typically produce only raw natural gas, while condensate wells produce raw natural gas along with other low molecular weight hydrocarbons.
- Those that are liquid at ambient conditions are called *natural gas condensate*.

# NATURAL GAS – Its applications

- **Fuel**
  - power plants
  - industrial equipment (boilers/furnaces)
  - residential applications (heating)
- **Chemical Feedstock**
  - ammonia
  - urea
  - methanol
  - petrochemicals (ethylene & propylene)
  - gasoline
  - residential (LPG)
  - commercial (CNG)



# SOME CHEMISTRY.....!

- Most natural gas production contains small (two to eight carbons) hydrocarbon
- Raw natural gas typically consists primarily of methane C<sub>1</sub>/CH<sub>4</sub>, the shortest and lightest hydrocarbon molecule.
- Raw natural gas also contains varying amounts of **natural gas liquids** - heavier gaseous hydrocarbons which exist in a liquid state at underground pressures:
  - C<sub>2</sub> – Ethane
  - C<sub>3</sub> – Propane
  - C<sub>4</sub> – Butane
  - Pentanes (C<sub>5</sub>) and higher molecular weight hydrocarbons such as Hexane (C<sub>6</sub>) and Heptane (C<sub>7</sub>)

# SOME ENGINEERING & ECONOMICS

## ..... Natural Gas Processing

- **Natural gas processing** is a complex industrial process designed to clean raw natural gas by separating impurities and various non-methane hydrocarbons and fluids to produce what is known as 'pipeline quality' dry natural gas that can be used as fuel by residential, commercial and industrial consumers.
- For economic reasons some plants may be designed to yield an intermediate product typically containing over 90% pure methane and smaller amounts of nitrogen, carbon dioxide, and sometimes ethane. This can be further processed in downstream plants or used as feedstock for petrochemicals projects.
- Heavier hydrocarbons recovered for other commercial uses.

# GAS QUALITY

- The raw natural gas must be purified to meet the quality standards desired by the pipeline system's design and the markets
- The standards specify that the natural gas:
  - Be within a specific range of heating value (caloric value).
  - Be delivered at or above a specified hydrocarbon dew point temperature (below which some of the hydrocarbons in the gas might condense at pipeline pressure forming liquid slugs that could damage the pipeline).
  - Be free of particulate solids and liquid water to prevent erosion, corrosion or other damage to the pipeline.
  - Be dehydrated of water vapor to prevent the formation of methane hydrates within the gas processing plant or the sales gas transmission pipeline.
  - Contain no more than trace amounts of components (such as mercury, hydrogen sulfide, carbon dioxide, mercaptans, and nitrogen) primarily to avoid damaging equipment in the gas processing plant or the pipeline transmission system.

# **GAS SPECIFICATION – what’ s the “big deal”?**

- Safe operation of the gas network and downstream plants and appliances
- Environmental and safety considerations
- Reduction of corrosion to pipelines and downstream facilities
- Consumer protection/economics value consideration [sale of “heat”, not volume]

# QUALITY MEASUREMENT – Gas Metering

- Measurement of flow rates and gas volume
- Quality measurement
- Custody transfer
- Allocation of volumes in and out of the system
- System balancing
- Billing - calculation of charges/tariffs
- Control of linepack

# III – POLICY AND REGULATORY CONSIDERATIONS

# NIGERIAN GAS SECTOR FRAMEWORK

- Nigeria has an estimated 182 TCF of proven natural gas reserves
- 7th largest natural gas reserve holder in the world
- But .....
- legal framework for the petroleum industry geared more towards oil production
- pricing issues
- infrastructure constraints
- gas availability issues
- limited gas penetration in the economy

# THE NIGERIAN GAS MASTER PLAN

- Suite of solutions to address gas commercialisation:
  - the development of the domestic gas market
  - availability of gas
  - gas pricing
  - gas infrastructure development
  - legal regulatory fiscal and policy issues
  - commercial and technical discipline in the gas sector



- A Pricing Framework for key economic sectors:
  - Strategic
  - Industrial (export)
  - Commercial

# The National Domestic Gas Supply and Pricing Regulations:

- Gas Department
- Domestic Gas Supply Obligation (DSO)
- The Aggregator
- The Gas Purchase Order
- Penalties for failure to supply DSO

# The Nigerian Template Gas Sales and Aggregation Agreement (GSAA)

- Designed to present common terms for wholesale gas supply in Nigeria
- Developed over a 3 year period
- Multi – stakeholder effort (gas suppliers, buyers, NNPC, Government, PHCN, The World Bank)
- First Major Agreement signed June 15, 2010

# **III – GAS SALE AND PURCHASE AGREEMENTS**

# THE GAS SALE AGREEMENT

- Gas sale negotiation is essentially a risk management exercise
- Will require an understanding of the ecosystem surrounding the transaction
- Therefore you must consider issues around the following dramatis personae:
  - The Government
  - The Seller
  - The Buyer
  - The transporter
  - The ultimate market
  - The host community
- **The Agreement should cover :**
  - The technical issues around the Seller, Buyer, Transporter and the ultimate Consumer
  - Commercial issues [gas/petroleum economics]
  - Policy and regulatory considerations
  - Macroeconomic issues in the jurisdiction
  - Financing considerations [corporate, banking and project financing]
  - Exogenic events [geopolitics/natural disasters/global macroeconomics]

# THE GAS SALE AGREEMENT

## - Key Legal Considerations

- **Essentially a sale of goods contract**
  - Title to the Gas [outright proof + warranty]
  - Risk in the goods
  - Quantities [Depletion or Supply Contract? DCQs & ACQs]
  - Duration and renewal of the contract
  - Transfer of title and risk in the goods
  - Quality and Fitness for purpose
  - Force majeure
  - Remedies and indemnification
- **Should also capture:**
  - petroleum law
  - tax law
  - arbitration law
  - foreign exchange regime
  - special legislation on the subject matter

# TYPES OF GAS SALE CONTRACTS

- **Depletion contracts**

- A nominated gas field dedicated to the Buyer
- Contract quantities based on economically recoverable reserves
- No obligation on Seller to secure additional reserves to meet supply obligation

- **Supply contracts**

- Seller commits to deliver a specific quantity of gas over a period
- Obligation on Seller to secure additional reserves if initial source of supply is inadequate

# THE NIGERIAN GAS SALE & AGGREGATION AGREEMENT (GSAA)

- Keystone of the Nigerian Natural Gas Industry - link between upstream production/supply of gas and downstream consumption
- Designed to present common terms for wholesale gas supply in Nigeria
- Developed over a 3 year period
- Multi – stakeholder effort (gas suppliers, buyers, NNPC, Government, PHCN, The World Bank)
- First Major Agreement signed June 15, 2010



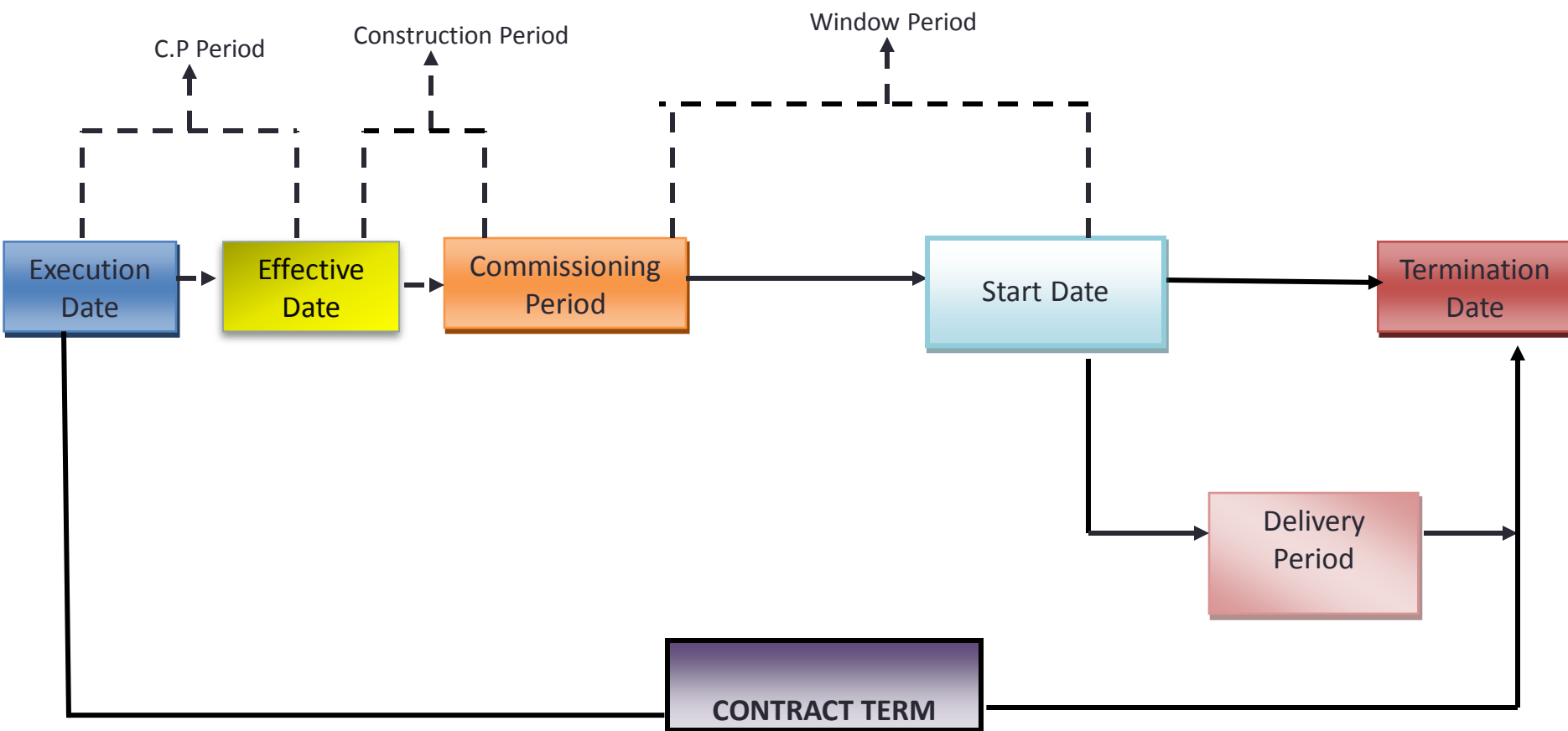
# PARTIES

- Seller
  - There may be multiple Sellers
    - Each Seller will be liable for the performance of its obligations under the GSPA to the extent of its proportion of gas supplied
    - One of the Sellers will be appointed as the Sellers' representative
      - Representative will coordinate nominations and notices
      - Limit of representative's authority should be clearly defined
- Buyer
- Gas Aggregation Company of Nigeria Limited

# CONTRACT TERM

- Consists of distinct periods with different rights and obligations
  - **Execution date** – execution of the GSPA
  - **Effective date** – satisfaction or waiver of conditions precedent
  - **Commissioning period** – period within which parties test new facilities
  - **Start date** – date on which seller will be first obliged to deliver gas in accordance with Buyer's nominations
    - Can be fixed at execution of the GSPA
    - Can be deferred until construction is well advanced and parties are to agree on an appropriate start date – window mechanism

# CONTRACT TERM



# CONDITIONS PRECEDENT

- Allows parties commit to the terms of the GSPA while deferring performance of substantive obligations
  - Approvals for construction and operation of Seller & Buyer Facilities
  - Execution of key agreements - Construction Contracts, Gas Transportation Agreement, Tie-in Agreement, Allocation Agreement
  - Payment security/guarantees in place

# QUANTITIES

- Daily Contract Quantity (DCQ) – quantity of gas Seller is obliged to deliver to Buyer on a daily basis

$$DCQ = 1/365$$

- Annual Contract Quantity (ACQ) – maximum quantity to be delivered in any year in any year

$$ACQ = 365 \times DCQ$$

- Maximum Daily Contract Quantity (MDCQ) – maximum quantity Buyer has a right to take or have delivered in a given day

- Expressed as a percentage over and above the DCQ – e.g. 110% of the DCQ

# THE ‘SWING’ FACTOR

- Allows flexibility in the contract
- A variation between the DCQ and the volume actually supply
- The parties will usually allow a floor and a cap as the swing
- Swing will be treated as ‘de minimis’
- Usually a major negotiation issue

# QUANTITIES - Key considerations

- Buyer will seek to :
  - ensure enough flexibility to allow it manage its down stream demand
  - minimize its obligations under the GSPA
  - Ensure that the Seller ensures supply
  - Ensure that his market for the gas is matched as much by the gas negotiated
- Seller :
  - Must identify how much gas it will be expected to supply over the life of the contract
  - will seek to restrict level of flexibility afforded to buyer
  - will seek to ensure that the cost is passed to the buyer
  - will seek to minimize its own risk for failure to supply gas

# QUANTITIES

## Excess Gas (EG)

- Gas required by Buyer in excess of the agreed MDCQ
- Seller ' s obligation limited – “ Reasonable Endeavours ” requirement only
- No obligation on Seller to deliver EG and therefore no Shortfall liability for failure to deliver
- May attract premium on the price - Contract Price plus premium



# The Take or Pay (ToP) Commitment

- Obligation on Buyer to take and pay for, or pay for if not taken, a minimum quantity of gas within a specified period of time
- Guarantees the volumes that the Buyer will pay for and provides Seller with secured revenue stream
- It is the ToPQ Commitment that secures the financing for the Seller's project
- Expressed as a percentage of the ACQ subject to adjustments:
  - Non delivered quantities (shortfall)
  - Force majeure
  - Maintenance

# QUANTITIES

## Make Up Gas

- Results where Buyer has paid for gas pursuant to the TOP obligation, but has not received the gas
- Buyer will be entitled to nominate and receive the gas at a subsequent time during the term of the GSPA
- GSPA should address:
  - Time limit for recovery
  - Limit on application in a year e.g., % of the ACQ
  - Consequences of outstanding make-up gas after termination

# QUANTITIES

## Shortfall

- Applies where Seller supplies gas below nominated quantity
- Exclusions
  - Gas supplied but not taken by Buyer
  - Gas not delivered due to:
    - Scheduled Maintenance
    - Commissioning Period
    - Force Majeure
    - Make-Up Gas
    - Shortfall Gas Tolerance

# QUANTITIES

- Shortfall Gas Tolerance
  - Gives a percentage tolerance within which Shortfall Gas Price shall not apply
- Buyer's remedies for Shortfall:
  - cash compensation
  - right to procure alternative fuel and be reimbursed by Seller
  - redemption at a discount – Shortfall Gas Price

# NOMINATIONS

- The formal procedures by which buyer gives advance notice of its future requirements for gas [a system of notification] of Buyer's requirements for deliveries
- Can be annually, quarterly, monthly, weekly, daily
- Nominated Quantity - Quantity of gas nominated by Buyer for delivery by the Seller at the Delivery Point
- Nominated Quantity must be within prescribed limits - cannot exceed maximum daily quantity
- Buyer may have a right to vary nominations

# DELIVERY POINT

- Title to and risk in the gas to pass from Seller to Buyer at the Delivery Point
- May be at:
  - Seller's facilities
  - Buyers facilities
  - Point of entry at multi-user pipeline

# COMINGLING & ALLOCATION OF GAS

- Comingling occurs where pipeline used to transport gas under a GSPA is a multi user pipeline
  - Transporter will be under an obligation to deliver to each shipper the quantity of gas put into the Pipeline
- Allocation is the process of identifying the correct portion of a comingled stream that derives from a particular source
  - Carried out at the delivery point by the transporter
  - Shipper (Seller) and Transporter will typically execute an allocation agreement

# GAS SPECIFICATION

- Rule: Gas must conform to contract specification
- Buyer's remedies:
  - right to reject Off Spec Gas with no liability
  - if rejected, Off Spec Quantity = Shortfall Gas
  - if accepted, payment for gas will be at a discount
  - indemnification against any loss incurred for physical damage to Buyer's and Transporter's facilities, including cost of clearing and cleaning facilities
  - where knowingly taken, Seller is absolved of liability



# PRICE

## Considerations

- Seller – Gas price should enable seller recover capital, operating costs and reasonable return on investment
- Buyer – gas price remains competitive with price for competing fuels throughout the duration of the GSPA
- Price can be:
  - Referenced to reported prices for traded gas – mature markets
  - An agreed base price which is periodically indexed by reference to agreed formula

# PRICE

- Price review
  - GSPA may contain a right for either party to periodically request for a review of the price
  - Usually arises where price formula no longer adequately reflects market conditions
- GSPA should state:
  - Frequency of review
  - Information to be considered
  - Consequences where parties fail to agree on revised price

# INVOICING AND PAYMENT

- Invoicing is usually on a monthly basis and in arrears
- Billing arrangements can be agreed bilaterally and should contain :
  - time of payment
  - place of payment
  - description of how invoices are to be prepared
  - time period of response to invoices
  - process of dealing with late payments
  - seller's actions for Buyer's refusal to pay

# MEASUREMENT AND TESTING

- Seller responsible for measuring quantity and quality of gas
  - Will install, operate and maintain measuring and metering equipment at the delivery point
  - GSPA may provide Buyer with the right to seek independent third party verification
  - Disputes arising with relation to measurement date will be referred to an independent expert

# MAINTENANCE

- Parties will be required to carry out periodic maintenance on facilities used in connection with the GSPA
  - Need to ensure that any downtime attributable to facilities maintenance is minimized
  - GSPA will prescribe mechanism for the coordination and synchronization of the respective facilities maintenance
  - Parties are typically excused from respective supply and offtake obligations during schedule maintenance

# FORCE MAJEURE

- Acts typically beyond the control of the parties and which excuses them from any legal responsibility or liability
- FM Events:
  - Acts of God
  - Acts or serious threats of war, riots, insurrection, terrorism, etc
  - Strikes, lock outs or industrial disturbances
  - Damage to/loss of Seller's/Buyer's/Transporter's Facilities other than breakdown/failure caused by normal wear and tear or failure to maintain equipment
  - Acts or omissions of a Government Authority or modification/removal/delay of an Authorisation

# FORCE MAJEURE

## Non-FM Events:

- Event or circumstance that will make performance of GSPA uneconomic or commercially impracticable
- For Seller, event or circumstance arising in connection with equipment/facilities other than Seller's
- Breakdown/failure of any equipment caused by normal wear and tear or failure to maintain equipment

# LIABILITIES/INDEMNITIES

- Remedies in the agreement are usually exclusive and exhaustive
- Cap on total cumulative liability
- Indemnified party to mitigate losses which would otherwise be recovered
  - Reasonable and Prudent Operator Standard to be used



# TERMINATION

- **EVENTS**
  - Delivery of Contract Quantity
  - Material Breach of obligations
  - Insolvency
  - Prolonged Failure to Deliver Gas
  - Prolonged failure to take Gas
  - Prolonged Force Majeure

# DISPUTE RESOLUTION

- The GSPA may:
  - provide for dual or single dispute resolution mechanisms
  - provide for arbitration only
  - refer disputes of a technical nature (e.g measurements, invoicing) to an expert and other disputes to arbitration

# GENERAL PROVISIONS

- **Definitions and interpretations**
  - Technical terms used should be accurately defined
- **Assignment**
  - A GSPA will normally provide that parties cannot assign, novate or otherwise transfer interest without the prior written consent of the other party
- **Insurance**
  - Each party will be under an obligation to effect and maintain certain insurances for the duration of the GSPA –e.g. facilities, third party liability

# GENERAL PROVISIONS

- **Confidentiality**

- Each party will be subject to obligations of confidentiality regarding the GSPA

- **Governing law**

- Cross Border GSPAs will usually stipulate a neutral governing law that is internationally recognized and will afford parties a degree of certainty and predictability in contractual interpretation

# GENERAL PROVISIONS

- Inclusion of Boiler Plate clauses:
  - Entire agreement
  - Costs
  - Notices
  - Waivers
  - Invalidity and severability
  - Variations
  - Execution by counterparties

**END**

**THANK YOU FOR LISTENING!!**