



How does piped-gas regulation affect the evolving (natural) gas industry?

Ethèl Teljeur

6 September 2011

ethel.teljeur@nersa.org.za

Piped Gas in SA

- Contribution of piped gas to total energy use in RSA is small (<5%), mainly industrial users, some power generation
- Currently there are 2 sources of piped-gas supply
 - Natural gas from Mozambique, explored by Sasol
 - Syngas 'Methane rich gas' manufactured by Sasol at Secunda

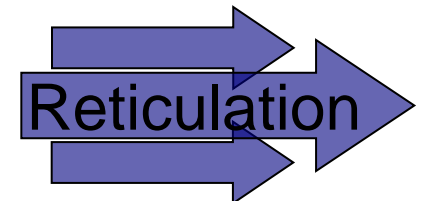
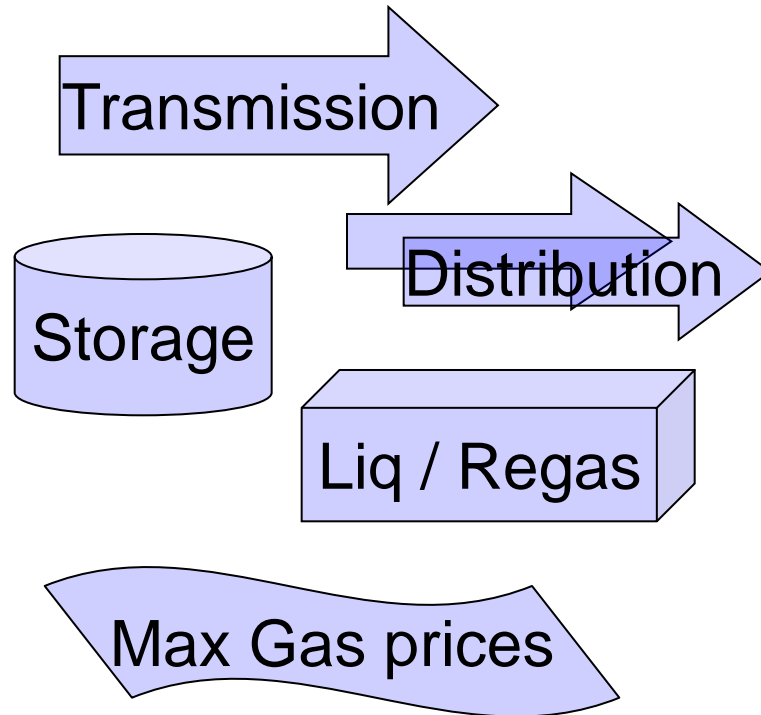
Regulating piped gas in SA

- Regulatory mandate in a nutshell
 - Orderly development of the gas industry
 - Licensing, tariffs and third party access
 - Development of a gas market; Facilitate investment; Promote competition
 - Dispute resolution
- Constraints
 - Subject to Agreement between government and Sasol prescribing Sasol's prices until 2014, certain tariffs, exclusivity conditions & price capping
 - Lack of alternative gas sources and investors

Scope of economic gas regulation

- All hydrocarbon gases transported by pipeline
 - Natural gas; synthetic gas; CBM; LNG; LPG etc.
- Gas activities covered:
 - Transmission
 - Storage
 - Distribution and
 - Trading of piped gas
- Excludes production and gas reticulation
 - Production: DME (PASA)
 - Reticulation: Local Government

Upstream



→
PASA / Min DME

→
NERSA

→
Munics

Legislative background

- The Gas Act 2001
 - Regulatory framework
 - Includes special dispensation for Sasol
 - Gas Act into operation 01 Nov 2005, establishment NERSA
- Regulations
 - Promulgated by Minister on 20 April 2007

The Gas Act (2001)

- Objectives are wide-ranging:
 - promote the efficient, sustainable, and orderly development and operation of the downstream gas industry, which must also be
 - ...safe, efficient and environmentally responsible
 - promote skills and employment equity
 - facilitate cross-border gas trade

and at times conflicting....

- Facilitate investment
- Promote historically disadvantaged firms
- Do not regulate upstream
- ensure equitable gas services and promote access to affordable and safe gas
- promote competitive markets
- ensure that present and future needs are met

Agreements in addition to Gas Act

- Agreement Mozambique – RSA covering cross-border gas trade
- Agreement concerning the Mozambican Gas Pipeline between Govt RSA and Sasol Limited
- Schedule One of the Agreement
 - the Regulatory Agreement

Piped-Gas Regulations

- Include, *inter alia*:
 - Eligible customers
 - Currently: 100,000 GJ p.a.
 - Price regulation principles and procedures
 - Objective, systematic, fair, non-discriminatory, transparent, predictable and efficient
 - Maximum prices must cover investment and operational costs and a profit commensurate with risk
 - Itemized billing; Energy regulator publishes average provincial prices

Piped-Gas Regulations – continued

- Third party access to uncommitted capacity
 - Non-discrimination; Use-it-or-lose it; Technically feasible
- Regulation specifies information required from licensee:
 - Audited financial statements per gas facility and activity
 - Regulatory Reporting Manuals (RRM's) developed
 - Annual volume, charges for each customer using < 10 million GJ per annum
- NERSA role in mediation and arbitration

Defining criteria: Operating pressures

- Transmission >15 bar gauge
- Industrial customers <15 bar gauge = distribution (between 2 and 15 bar gauge)
- Commercial/residential <1 bar gauge = reticulation (<2 bar gauge)

NERSA functions

- Issue licences
 - Construction / operation / conversion / trading
- Regulate prices
 - Maximum prices for distributors, reticulators and all classes of consumers 'where there is inadequate competition'
- Regulate tariffs
 - Monitor and approve and if necessary regulate transmission and storage tariffs
 - Ensure non-discrimination
- Gather information
 - Investigations / inquiries licensees; dispute resolution; land expropriation
- Make rules

15Main regulatory instrument: licence conditions

- Are all gas projects regulated?
 - No, but these are:
 - Construction and operation of gas transmission/distribution pipelines
 - Storage, liquefaction and re-gasification facilities
 - Conversion into abovementioned facilities
 - Gas trading
 - Examples:
 - CBM pipeline from Botswana to industrial heartland
 - Natural gas transmission pipeline from Western Cape offshore CPF to supply customers onshore (mine definition)
 - CNG storage facility
 - Gas distribution pipelines to supply industrial customers at between 2 and 15 bar gauge

- Does every gas project require approval and a licence from NERSA?
- No:
 - Offshore exploration for LNG export;
 - Distribution via LPG bottles;
 - Coal Bed Methane (CBM) that is neither piped nor stored
 - Gas reticulation and trading below 2 bar gauge
 - Small biogas projects not connected to the gas pipeline grid
 - Transmission for own use

Licence conditions

- Separate management and accounts for vertically integrated companies
 - no cross-subsidization
- Non-discriminatory TPA for uncommitted capacity for transmission and storage
 - Negotiated
- Negotiated changes in routing, diameters, capacity, compression at cost of proposer

Licence conditions - Continued

- Distribution
 - Exclusive areas (for specification of gas)
 - Based on ability to supply
 - Obligation to supply
- Trading
 - Exclusive for limited period
- Non-discriminatory pricing and conditions
- Price approval where competition is ‘inadequate’

Licensing process

- Application published by applicant
 - Confidentiality claims, assessed by Regulator
- 30 day objection period
 - Objections from third parties received and forwarded, responses considered
- Public hearing:
 - Applicant and public (third parties) heard
- 60 day decision making period
 - After responses to objections and all information received
- 90 days in total if no objections/info outstanding

Licensing update

– experience so far

- Licensing existing facilities: arduous process near completion
 - Geographic demarcation problematic, but resolved
 - GIS system used: scientific, precise, verifiable
- Streamlined processes, conducting first review of licensing forms
- Forms on website: www.nersa.org.za

- Regulations are in place – aimed at market development
 - Sasol licensed as a transmission company, distributor and trader
 - 4 additional traders licensed: SLG, Novo, NGV, VGN
 - Maximum prices conducive to entry
 - Methodology being developed
 - Transmission and storage tariffs conducive to investment and third party access
 - Monitored and approved or regulated
 - TPA and other arrangements aimed at protecting entrants, downstream traders, and consumers
- Now need new gas supply

Risks piped gas industry

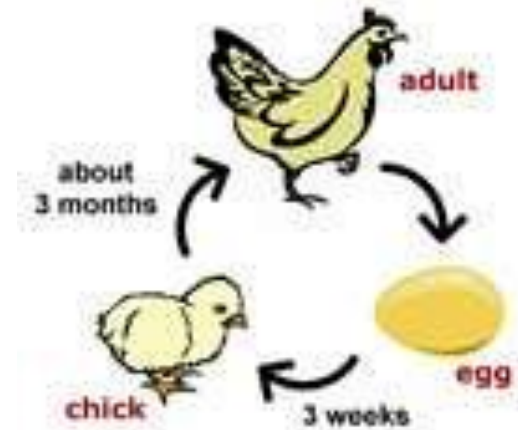
No gas = No investment = No jobs

- No new gas finds
 - Either Mozambique/South Coast or shale gas
 - Moratorium shale gas exploration – indefinite?

- SA misses window of low LNG prices
 - No significant uptake of LNG for electricity generation (coal remains dominant, nuclear fired generation gains in prominence)
 - OCGT stations not converted to CCGT
 - IRP CCGT MWs not adjusted upward

Growing the gas market

- Single largest hurdle: paucity of NG finds
 - Chicken or egg?
 - Currently relying on Mozambican imports
- Other hurdles:
 - Historically low electricity prices
 - Conversion costs
 - Supply concerns
 - Market value pricing by Sasol
 - Lower acceptance of piped gas as a safe fuel source
- Growing supply: imports or domestic exploration



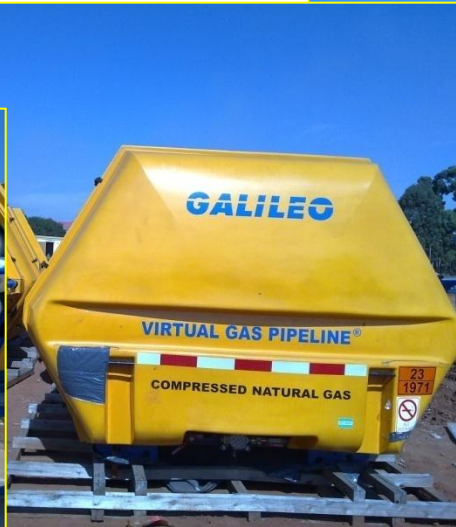
Developments

- Shale gas
 - Shell holds exploration licence,
 - moratorium on any applications by PASA followed by a Cabinet decision to impose moratorium on fracking (even for exploration)
- Sasol has bought significant shale gas interests in Canada (Talisman, USD 2bln+, expecting to invest additional ZAR 10 bln over 5 years)

Supply challenge: domestic exploration

- Offshore exploration: Ibhubesi gas field
 - Forest, PetroSA and Anschutz
 - Production right (block 2A), currently market study until 2012
- Block 3A/4A
 - BHP Billiton, PetroSA and Sasol
 - Exploring shallow water gas potential
- South Coast Block 9 and 11A
 - PetroSA ongoing exploration
- South Coast Block 11B/12B
 - Canadian natural resources exploring gas potential

- NERSA licensed new gas activities
- Novo Energy Pty Ltd and Virtual Gas Networks Pty Ltd to operate gas storage facilities and trade in gas
- Natural Gas Vehicles Pty Ltd to fuel fleet vehicles
 - CNG for industrial use and as vehicle fuel
 - MAT modules reduce need for pipelines and allow the market to be developed



Supply challenge: domestic exploration

- Underground Coal Gasification
 - For not economically extractable coal
 - Sasol pilot study at Secunda; and
 - Eskom trial at Majuba, started 2007, planned full prod 2013.
- Landfill gas
 - Number of projects already underway: Vanderbijlpark, Vereeniging, Cape Town, Pietermaritzburg and Durban (Bisasar Road 8 MW electricity project)
 - Requires development finance or carbon credits
- Coal Bed Methane
 - Waterberg/Soutpansberg Anglo Coal
- Shale gas (tight gas)
 - Shell has Technical Cooperation Permit – large parts Karoo

- To grow the gas market need to remove fundamental hurdles
 - Price uncertainty
 - NERSA to approve maximum pricing methodology
 - Current MVP pricing to be phased out by March 2014
 - Regulatory / policy uncertainty
 - NERSA to continue to provide clarity with reasons for its decisions, particularly in licensing
 - liaison with concurrent regulators (competition authorities, DoE, Dept Env Affairs, PASA etc) – e.g. on shale gas
 - Eskom required as anchor customer for LNG project
 - facilitating fuel procurement contracts – NERSA dialogue
 - Future IRPs to include additional OCGT

Market development

- Developments gas to power
 - Integrated Resource Plan 2010
 - includes 711 MW CCGT & 805 MW OCGT (2020)
 - Opportunities for conversion of OCGTs to CCGT
 - Ankerlig & Gourikwa 2000 MW, and DoE peakers Avon & Dedisa 1000 MW
 - Sources of gas
 - PetroSA using gas from Ibhubesi
 - Others interested in using Mozambican gas for Gx
 - Several parties have expressed interest in importing LNG for the OCGTs
 - Shale gas (long-term)

Developments

- Ministerial determination for renewables and peakers is a precedent ...
- ... and DoE as procurer is opportunity
- to facilitate Eskom's production or procurement of gas fired electricity and ...
- Kickstarting a whole new gas industry (LNG terminals, pipelines, GTP, possible downstream trading etc)