Natural Gas in Developing Countries: Investment Needs and Opportunities for International Cooperation

Natural Gas Development in Mozambique

by

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Development of gas discoveries in virgin territory is a long term business.

1961: First discovery of gas in Mozambique

2004: Start of first commercial production
Gas in Mozambique

**FIELDS**
- Pande - 1961
- Buzi - 1962
- Temane - 1967
- Inhassoro - 2003

**RESERVES**
- Pande - 2.7 TCF
- Temane - 1.0 TCF

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Hydrocarbon Potential in Mozambique

- 82 exploration wells drilled
- 20 wells have shows of gas, asphalt/ traces of dead oil
- Numerous gas and oil seeps
- Exploration for more gas near Temane and Pande. Additional prospects are identified to the north and east (offshore).
- Several companies are exploring for oil and gas in the Beira region.
- Concession awards this year in Rovuma basin.
- Potential for more hydrocarbons discoveries, including crude oil.

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Why were natural gas resources in Mozambique locked up for decades?

• In the 1960-ies companies only drilled for crude oil in remote regions like Mozambique.
• Natural gas discoveries were not perceived as having any commercial potential; because:
  • No markets for natural gas existed (except limited coal gas distribution in a few cities in South Africa).
  • From 1981-96 the Mozambican Government evaluated many gas-consuming industrial possibilities (LNG, fertiliser, iron reduction, power generation).
• The Maputo Iron and Steel Project was economically feasible until the steel market crack in 1997.
• Then in 1998 Sasol proposed to pipeline Temane and Pande gas to their petrochemical plants in South Africa.
Regulatory Cooperation
Mozambique – South Africa

- To facilitate the Gas Project, the two Governments initially aimed only at a cross-border treaty for the pipeline, but ended up negotiating a general “Bi-lateral Agreement on Natural Gas Trade”.
- Overall objective of this treaty is to promote and facilitate gas trade between the two countries, and to be an “umbrella agreement” for specific gas trade projects.
- It sets up a Gas Commission to oversee all cross-border gas trade and be the forum of communication between the two countries.
- A key element is harmonisation of regulatory requirements.
- Other elements include taxes and custom duties, metering, inspection, safety and environmental protection.
- Common objective at high political level is to develop Mozambican gas resources for markets in both countries.
Mozambique – RSA Natural Gas Project

- Co-ordinated development of both Pande and Temane gas fields (total of 34 producers)
- One central gas processing facility (the “CPF”)
- An 865 km- 26” diameter steel pipeline to Sasol’s coal-to-liquids complex at Secunda in South Africa (531 km on Mozambican side)
- System capacity: 120 Mill GJ/year (3 billion cu.m/yr) (pipeline capacity can be doubled by installing three compressor stations).
- Production period: 25 years from start in Jan 2004.
- Gas buyer: Sasol Gas
- Market: Sasol’s petrochemical factories and conversion of the syntetic gas distribution system to natural gas.
Natural Gas Project - Gas Chain

CMH 30%  Sasol 100%
Sasol 70%  CMH 30%
Option

Sasol
CMG
iGas (CEF)
BEE + privatisation

50%+
up to 25%
up to 25%
?

Sasol Gas internal and external markets

CPF

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The Mozambique – RSA Natural Gas Project

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Government’s policy is to maximise use of indigenous gas to create economic/industrial development in Mozambique.

Government can take its 5% royalty in-kind (royalty gas) and wishes to use this facility to “kick-start” a local gas consuming industry.

Has so far granted concessions to distribute gas in Vilankulo/Inhassoro (near the gas fields) and in Matola/Machava (the country’s main industrial area).

Studying other opportunities to marked royalty gas for industrial, commercial and domestic use in Mozambique.
Matola Gas Company buys royalty gas taken off the main pipeline at Ressano Garcia and pipe it in a 75 km-10” line to Matola (the industrial suburb of Maputo).

The “anchor” customer is Mozal- an aluminium smelter (output 800 tons/year refined aluminium).

Many smaller industrial and commercial enterprises are now switching from heating oil or diesel to indigenous natural gas. The customer base is steadily expanding.

Natural gas also benefits the local population through small “community kitchens”.

Models for further gas distribution are being considered.
Gas pipeline Temane – Secunda

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Gas Market in Mozambique

Metering Station at Mozal Aluminium Smelter

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Gas Market in Mozambique

PRS-1 Ressano Garcia

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Gas Market in Mozambique

PRS-1 Ressano Garcia

PRS-2 Matola

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Gas Market in Mozambique

PRS-1 Ressano Garcia
Temane and Pande Fields - Mozambique’s first Gas Producers

- The Mozambique – South Africa Natural Gas Project is a success story
- Completed on time and within budgets
- Availability of gas in the market creates new demand, both in RSA and in Mozambique
- New gas resources will expand the national gas production
- Very positive effects on growth and generation of revenue to the state
THANK YOU FOR YOUR ATTENTION