



Towards a Natural Gas Master Plan In Mozambique

Presentation

Government of Mozambique
February 20, 2013



Presentation Outline



- Overview of the Project
- Gas Master Plan – Decision Hierarchy
- Key Recommendations for the GMP
- Addendum
 - GMP Recommendations (full list)
 - Additional Studies



Project Overview

The Gas Master Plan is a Process



- World Bank and MIREM engaged ICF to undertake the research and analysis to develop the GMP
- Extensive consultations with the Ministries and Departments of the Government of Mozambique and Stakeholders
- Stakeholder Workshops for Public Comment
- Analysis identifies gaps in knowledge that require additional work to develop information to better inform decision makers
 - More knowledge will emerge as development unfolds
 - The markets for LNG and commodities are changing
- Thus, the GMP must evolve over time but it also serves as a guide for the present

ICF's Scope of Work Covered 10 Tasks



- Prepare gas supply outlook and scenarios
- Develop market assessments and netback analysis
- Review current policies and plans in context of gas development
- Assess the financial requirements and needs
- Evaluate pricing options for domestic sales
- Develop a planning model and train Mozambique staff on its use
- Assess environmental, socioeconomic, non-monetary impacts
- Review other countries' experiences with gas development
- Draft a Gas Master Plan and Implementation Strategy
- Support GoM in developing a Vision and Consensus Gas Master Plan

ICF's proposed GMP concepts are based on insights from these studies

Recommendations Based on Analysis and Stakeholder Comments



- ICF developed a decision hierarchy
 - What decisions must the Government of Mozambique take
 - When should the decisions be made
- ICF developed 30 recommendations for the Gas Master Plan in 5 areas
 - Rovuma Development Recommendations
 - Mega-projects and the relation to promoting broad based development
 - Gas Sector Regulatory Reforms
 - Socioeconomic and environmental issues associated with development
 - Structures for fiscal management
- ICF proposed 13 follow-up studies to inform future decision making

Limitations of the Study



- The study provides a high level analysis of a broad range of issues related to gas development.
 - Gas development is at an early stage and many issues will require more in-depth considerations as their importance becomes more apparent and as more information is available. (Such as mega project viability, locations of facilities, timing of development, detailed environmental impacts, assessment of metrics, revenue utilization, etc.)
- The study has identified the important issues that must be addressed and provides a framework for future analysis and planning.
- This study is the foundation stone for a GMP, but it must be supplemented by future work towards a dynamic GMP



Gas Master Plan Elements

Decision Hierarchy

Principles for Informed Decision-making



Take only those decisions now that are critical to progress the development of the gas sector

The LNG projects in Palma should have the highest priority and negotiations should be concluded soon. These LNG projects are the anchors for all future development in the sector

In parallel, begin specific studies to develop additional information, so that less urgent decisions can be made later on a more informed basis

Gas development in Cabo Delgado is a complex process requiring many decisions, but most are not urgent and should be taken only when better information is available

Identify which studies need to be undertaken now, and secure resources to undertake them. Ensure that these studies are oriented towards future decision making

Critical Decisions (1)



- **Expedite development of Palma LNG project & exports (Now)**
 - Negotiate with Anadarko and ENI to secure LNG development
 - Resolve options for financing ENH's equity share in offshore and LNG development

- **Implement a public communication strategy, with transparency being the primary arsenal for combating misinformation (Now)**
 - Explain the importance of LNG project development for the Mozambican people
 - Ensure transparency and access of information regarding GoM vision, strategies, decision-making processes, revenue realization and utilization, and development priorities
 - Critical for setting appropriate expectations for everyone

Critical Decisions (2)



- **Initiate a number of new studies, and follow through on getting more information (early 2013)**
 - Prioritize key studies that are necessary for making informed decisions about future development
 - The GMP recommends additional studies which the GoM should consider

Important Decisions—Mid 2013



- **Some decisions will be important to lay the groundwork for future development of the country, and need to be taken in the coming months**
 - Decide the combination of cash and in-kind for the government's share of gas, and how this combination may change over time
 - Develop an institutional framework plan for how to use cash payments from LNG projects to support development programs in Mozambique
 - Begin assessment of “actual” demand for gas in different regions and mega-projects based on price, cost, and willingness to pay

More Decisions—Late 2013



- **Some decisions need to be made in this year to get longer term processes under way**
 - Begin developing better information about future gas exploration and production in areas south of Rovuma
 - Give priority to negotiating EPCCs appropriate for CBM exploration and production
 - Develop a process that ties any decisions on large natural gas infrastructure around Rovuma and mega-projects to better information about gas resources, mega-project feasibility, and downstream development opportunities
 - Consider what mega-projects are appropriate for Palma, and what projects are appropriate for locations farther south (Pemba, Nacala, Beira)
 - Plan for gas-based government revenue to develop Cabo Delgado other areas in Mozambique and ensure that benefits of gas are shared equitably

Recommended Decisions—Beyond 2013



- **A number of decisions do not have to be made now, but can be made over the coming 18 to 24 months:**
 - Establish independent regulator for gas transmission and distribution for future development
 - Develop pipeline transportation tariff design
 - Set up program to monitoring and enforce environmental impacts mitigation
 - Plan training gas sector labor training programs



Gas Master Plan Elements

Key Recommendations

1. Price for Royalty and Profit Gas and Domestic Gas



Set the gas price of gas for purposes of calculating government revenues as the netback value from LNG sales, and not at the cost of production

To calculate royalty and profit gas, GOM should set the gas price at the LNG netback value to maximize revenue

However, domestic gas prices, for mega-projects and local uses, should reflect its true cost

Gas should not be subsidized to avoid market distortions.

This does not mean that gas sold locally must be at netback to world LNG prices – only that the price must at least recover the costs of production, transport, and distribution.

2. Take Combination of Cash and in-Kind



Mozambique should take the government share (royalty and profit gas) in a combination of cash and in-kind

Cash is necessary to fund development.

Making gas available to industry, for a price, can jump start the economy to generate more employment.

3. Mega-project Planning



Establish priorities for mega-project development

First: LNG export project

Next in order: Electric power generation, Fertilizer, GTLs, and Methanol

Use a market-based gas approach to determine which specific projects should proceed

Seek offers to buy gas with full explanation of project development and operation, and use these offers to develop plans and estimate costs

Use a tender or auction process

Encourage the siting of mega-projects where they can serve as strategic anchors to promote economic activity

Consider one-two mega-projects in Palma or in areas further south, and then evaluate future projects over time

4. Mega-projects and Taxes



All mega-projects should deliver solid tax returns for GoM

Tax revenue will be a major source of benefits from mega-projects since their direct employment is modest.

Mega-projects should not receive undue-tax breaks to subsidize exports.

Decisions on requests for tax relief or holidays by mega-projects should be aired in public hearings.

Transparency in decision making on taxes is an essential requirement for public acceptance.

5. Creating a Transparent Future Gas Market



Establish a single independent regulator to oversee the licensing, operations, and tariffs of gas transmission and distribution pipelines

Gas regulator can also be the regulator of electricity services

Develop and publish transparent and consistent pricing methodologies for natural gas processing, transmission, and distribution

Transmission and distribution pricing should allow developers to recover their investment and operating costs and a reasonable return (profit)

6. Community Impacts



Allocate a portion of the government revenues from natural gas related investments specifically to those communities directly affected by those investments

This could supplement funding under Article 7

Could help address several potential concerns:

- Resources can help strengthen those affected livelihoods as opposed to harm them, or mitigate any potential adverse impacts*
- GoM investment can stimulate investing companies to engage in their own strategic community investment plans*

Transparency is key for the appropriate use of such resources.

7. Environmental and Social Planning



Strengthen the GoM's capacity to enforce Environmental and Social Management Plans agreed with private investors as a result of the ESIA process

Strengthen the capacity of MICOA to coordinate natural gas related projects.

Transparency and responsiveness to requests for information and concerns from the local community and environmental groups are important to combat rumors and misinformation.

8. Managing GoM Revenues



Evaluate options for channeling GoM gas revenues to development; there are at least five options:

OPTION 1. Channel GoM Funds into private banking system to promote local capital markets

OPTION 2. Finance public-private investment projects in various sectors under Mozambique's new PPP Law

OPTION 3. Establish a Sovereign Wealth Fund (SWF)

OPTION 4. Establish a National Transformation Bank (NTB) or Sovereign Development Fund (SDF) owned by GoM AND other countries/entities

OPTION 5. Direct Distributions to Citizens, as monthly cash payments (can be used to favor poorer groups)

Key Follow-on Studies



- Integrated power study in Mozambique, including the SAPP
 - Need to evaluate all sources for power generation
 - Need to integrate gas and electric planning and to understand the power needs in Mozambique, vis-à-vis the Southern African Region
- A pricing study for domestic gas to include study on the design of an auction or tendering process by which mega-projects would bid on gas supply
- Detailed independent assessment study on specific mega-projects submitted to GoM to evaluate relevance and techno-economic feasibility of potential megaprojects

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Addendum

*GMP Recommendations
Additional Studies*

Recommendations Summary



1. Rovuma Development Recommendations

- 1.1 Take only those decisions now that are critical to progress the development of the gas sector
- 1.2 In parallel, focus on undertaking specific studies to obtain additional information and knowledge, such that other less urgent decisions are taken over time on a more informed basis.
- 1.3 Decide on an amount of gas the GoM wants IOCs to produce in order to meet export and domestic requirements.
- 1.4. Set the price of gas for purposes of calculating government revenues as the netback value from LNG sales, and not at the cost of production.
- 1.5 Take the government share (royalty and profit gas) in a combination of cash and in-kind
- 1.6. Accelerate the GoM's knowledge about potential volumes, timing, and location of future gas developments beyond Rovuma.
- 1.7. Negotiate EPCCs with coal bed methane developers to exploit CBM resources in Tete.

Recommendations Summary



2. Mega-projects and the relation to promoting broad based development
 - 2.1 Establish priorities for mega-project development
 - 2.2. Use market-based gas approach to determine which specific projects should proceed
 - 2.3 Encourage the siting of mega-projects where they can serves as strategic anchors to promote economic activity
 - 2.4. Support businesses capable of supplying inputs and servces to the gas industry and mega-projects
 - 2.5. Conduct a detailed power study to evaluate the need for large combined cycle (grater that 300 MW) gas power plants
 - 2.6. Consider both pipeline and LNG transportation options for moving gas around the country.
 - 2.7 All mega-projects should deliver solid tax returns for GoM
 - 2.8. Mega projects aimed at export markets should NOT be subsidized.
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Recommendations Summary



3. Gas Sector Regulatory Reforms

3.1 Develop legislation and regulations for licensing the construction, operations and pricing of natural gas transmission (high-pressure), and distribution (low pressure) pipelines on a consistent and transparent basis.

3.2 Establish a single independent regulator to oversee the licensing, operations, and tariffs of transmission and distribution pipelines.

3.3. Develop and publish transparent and consistent pricing methodologies for natural gas processing, transmission, and distribution.

3.4. Gas prices should reflect the true cost of gas and should not have any indirect implicit subsidies.

3.5 Power tariff adjustments should be made to support the expansion of generating capacity

Recommendations Summary



4. Socioeconomic and environmental issues associated with development

- 4.1 Improve the business environment to encourage investment in SME industries that can use gas.
- 4.2 Direct resources into PPP investments in gas distribution and to expand small scale use of gas.
- 4.3 Allocate a portion of the government revenues from natural gas related developments to those communities directly affected by the developments.
- 4.4 Use revenues to strengthen education and labor training programs led by the Ministries of Education and Labor in partnerships with the private sector.
- 4.5 Develop a plan for minimizing adverse impacts of potential human migration flows associated with the construction of natural gas related infrastructure.
- 4.6 Strengthen the GoM's capacity to enforce environmental and social management plans agreed with private investors in the ESIA process.
- 4.7 Revise the recently enacted resettlement regulations to comply with international standards.

Recommendations Summary



5. Structures for fiscal management

5.1 Develop a macroeconomic policy the address the problems of resource curse

5.2 Undertake a study to evaluate options for channeling GoM gas revenues to development.

5..3 Coordinate the large financing demands required by the natural gas, coal, and power sectors

Additional Analysis and Studies



1. Integrated power study in Mozambique, including the SAPP
2. Detailed studies on SMEs, products, typical firm size, costs, energy use, willingness-to-pay, energy use by type, location (province and town)
3. Analysis of the barriers to SME formation and growth
4. Detailed independent assessment study on mega-projects submitted to ENH to evaluate techno-economic feasibility of potential megaprojects
5. Analysis of the effect of alternative income tax rates and incentive policies on government revenues from mega-projects
6. Study on the design of an auction or tendering process by which mega-projects would bid on gas supply
7. Accelerate work on National input-output model centered in the INE and Ministry of Planning that is tailored to the Mozambique economy

Additional Analysis and Studies (continued)



8. Assessment of the ways that natural gas development can support tourism development
9. Study of strategies of governance of natural resource export revenues to avoid resource curse
10. Evaluation of how model EPCC should be modified to support CBM development
11. More in-depth and detailed studies of infrastructure investment needed for specific mega-project development
12. Engage a firm to provide independent and ongoing evaluation of LNG and mega-project commodity markets
13. Establish metrics for success: see following pages