

Exploring the Role of Gas in Economic Development

The background image is a composite of a city skyline at night and a perspective of railway tracks. The skyline features several prominent skyscrapers, some with glowing windows and others with decorative lights. A bridge with warm, golden lights spans across the middle ground. In the foreground, two parallel railway tracks run from the bottom center towards the horizon, where they meet the city lights. The overall color palette is dominated by deep blues and teals, with warm yellow and orange highlights from the city lights and bridge.

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Introduction

The Untapped Potential of Natural Gas

Unlike Oil, the value or otherwise of Natural Gas is highly inspired by a well thought through vision, foundations, strategic planning and implementation.

With that in place, natural gas exploitation could be much more transformational than oil.

Secondary Resource

Historically, exploration efforts have primarily focused on oil, with gas often considered a secondary resource.

Planning Gap

Reactive rather than proactive approach to gas planning and utilisation, usually results in unrealized potential of the resource.

Complex Commerciality

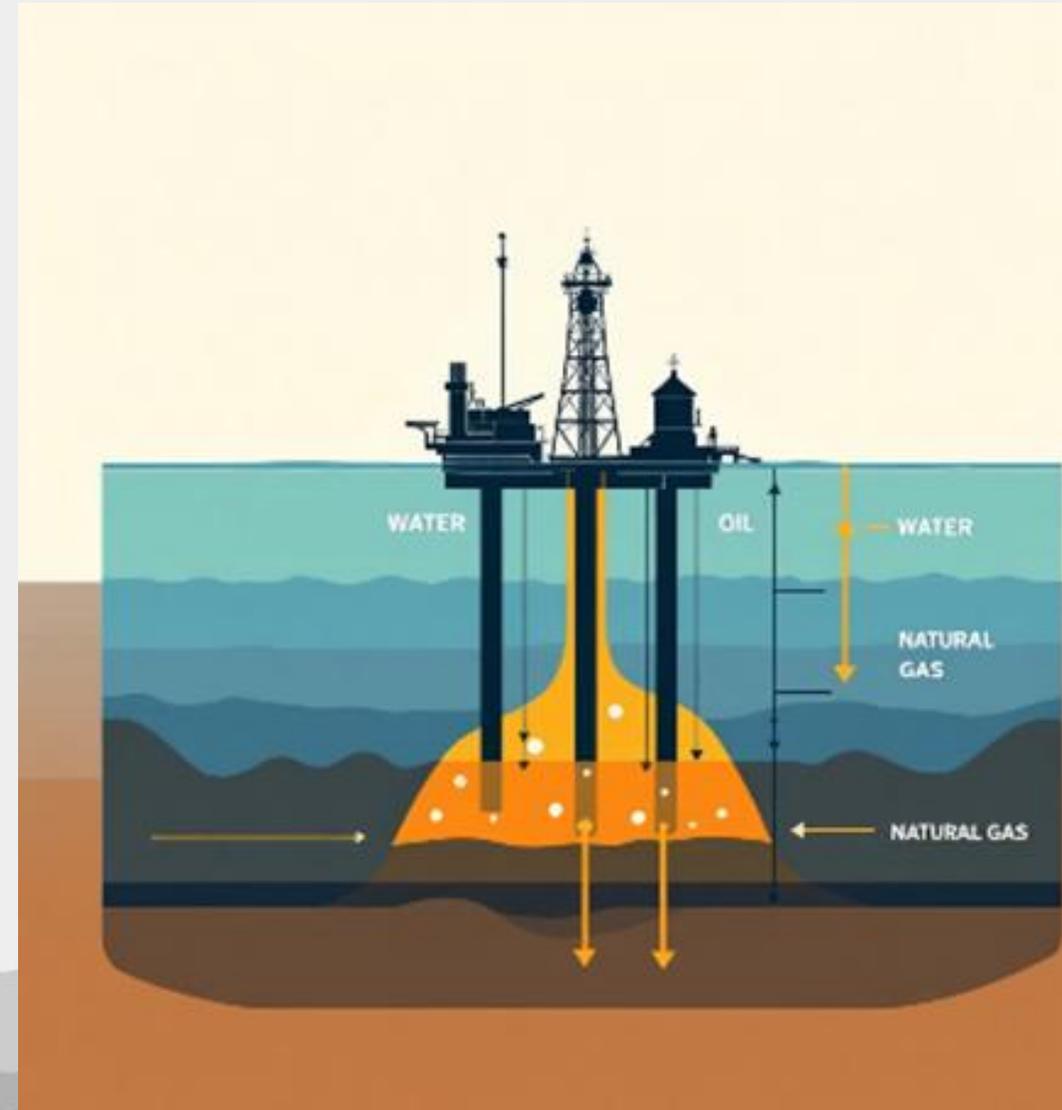
Unlike oil, gas presents inherent complexities in terms of capture, compression, transportation and utilization.



Introduction

Gas: The Hidden Driver of Project Commerciality

- The outcome of a petroleum discovery could usually be a find of oil, gas, or both.
- Both oil and gas hold significant commercial value but characteristics of gas — requiring capture, compression, and dedicated transport etc. — make its utilisation more challenging than oil.
- In commercial assessments, the value of oil often takes precedence. Yet, gas can be a crucial factor in achieving project commerciality.
- Project that may be NPV negative with only oil could become NPV positive if there is value for the gas.



Unlocking Value From Gas: Strategic Roadmap

Creating Value from Gas: A Strategic Roadmap

□ Profile of Economy

Understand the state of the economy, its needs and industrial capacity to tailor gas utilisation plans effectively.

□ National Petroleum Policy

Develop clear, long-term policies that prioritise gas development and a basis for launching sustainable development

□ Legislation, Inst. and Human Capacity Dev.

Establish robust legal frameworks to govern gas exploration, development, production, and distribution.

□ Gas Utilisation Options

Identify diverse applications for gas, including power generation, industrial feedstock, and domestic use.

□ Gas Master Plan

Comprehensive planning addressing both gas supply (reserves, production forecasts) and demand (industrial, commercial residential).



Creating Value from Gas: A Strategic Roadmap contd.

- Gas Pricing Policy**
Implement a fair and sustainable pricing mechanism to enhance the viability of investments and widespread adoption.
- Gas Infrastructure**
Design, fund and construct essential infrastructure: pipelines for transport and gas processing plants for preparation.
- Gas Act**
Legislate a dedicated gas act for streamlined regulation and institutional frameworks.
- Sustainability**
Integrate ESG principles, including afforestation, energy transition, and stringent controls on flaring and fugitive emissions.
- Environment & Industrial Parks**
Promote gas-powered industrial parks which would enhance economic viability of gas projects of different scales whilst ensuring health, safety and environmental considerations



Strategic Foundation

Profiling Your Economy: Understanding Energy Demands

A thorough review of the structure and state of the local and regional economies is fundamental.

It provides vital insights and direction into current and future energy needs, gas utilization potentials, informing investment decisions and infrastructure development.

Key Metrics to Assess:

- Structure, size and state of the economy
- Resources, competitive/comparative advantage
- State of Infrastructural development
- GDP Growth projections
- Energy consumption per capita, Demand forecasts
- Industrial growth corridors
- Correlation between economic growth and energy consumption

Such a holistic review provides an opportunity to assess varied developmental scenarios that returns the best value (for the country)



Strategic Foundation

Natural Petroleum Policy

Establishing a broad framework of clear principles underpinning the vision for gas utilisation will serve as a strong foundation for launching sustainable development.

The ultimate goal must be the sustainable development of the people by attracting and providing a decent return on investment

This predictability fosters a healthy investment climate, essential for the development of complex gas projects



Gas Flaring & Venting

A comprehensive gas policy must include strict measures to regulate wanton gas flaring or venting and mandate tracking of fugitive emissions to maximise these benefits



Legislation

Robust legislation is required to regulate and facilitate the complex, long-term nature of natural gas exploration, development and commercialization projects.

Legislative Focus:

- Define rights and responsibilities of participants, establish clear transparent procedures, streamline approval processes
- Gas Specific Timelines & Unique Specifications – Recognise that gas commercial assessment timelines are often longer than oil, requiring tailored provisions
- Investment Incentives – Integrate project incentives to stimulate investment activities
- Clarity from regulations/guidelines should not erode stability

Regulatory predictability is vital for industry growth



Planning

Strategic Gas Utilisation Options

Thorough review and selection of optimal gas utilisation options prior to field development, is critical for strategic decision making, influencing project viability and maximising benefits and long-term economic impact. Not all gas projects may deliver sustainable development to the people.



Power Generation

Base-load electricity supply.



Petrochemicals

High-value industrial products.



Fertiliser Production

Boosting agricultural yield.



Plastics Manufacturing

Versatile material source.



Domestic LPG

Household energy needs.



Aluminium Industry

Requires particularly cheap electricity

Thorough review and rigorous modelling of individual and combination of projects is critical – revenues, benefits, linkages, challenges, energy security, employment, future of global energy etc



Implementation

Developing a Comprehensive Gas Master Plan

A robust Gas Master Plan provides a strategic framework for developing and utilizing a country or region's natural gas resource - detailed assessment of current and potential gas demands & supply, and timing, guiding critical infrastructure decisions. It entails...

Demand Assessment

Current, projected and suppressed gas consumption across all sectors.

Supply Projections

Forecasts of gas production from various sources. Helps to manage uncertainty.

Investment/Market Expectations

How demand and supply uncertainties impact investor confidence and market stability.

Pipeline Sizing

Accurate projections are crucial for optimising pipeline capacity and minimizing over/under-investment.

Plan must be state driven with a goal for sustainable development but must be thoroughly reviewed by and optimized for private sector participation.

It must foster multi-party access and provide redundancies



Gas Pricing Policy

A clear gas pricing policy is an essential ingredient for modelling the feasibility and commerciality of oil and gas projects for comparative analyses and investment decisions making.

The policy aims to balance affordability for consumers, encourage production, and ensure energy security

Key Factors: The Gas Pricing policy addresses:

- **Type of Gas - Associated vrs. Non-Associated Gas:**
Differentiated pricing mechanisms apply/are associated with gas types
- **Source of Gas**
Considerations for onshore, shallow, deep and ultra-deep resources
- **Ultimate use of the resource**
Electricity, Aluminum smelting, fertilizer attract different gas price ranges
- **Heating Value:**
Primary determinant, unlike oil (API)

Clear pricing policies stimulate petroleum investments



Planning

Gas Infrastructure Projects

Gas infrastructure represents a substantial, long-term capital investment. It requires significant capital and long-term planning. Includes pipelines, storage facilities, compressor stations, and processing plants.

Coordination key for Efficiency

Critical to coordinate pipeline development to optimise costs and prevent chaos, ensuring efficient main lines and laterals.

Pipeline Sizing (TPA)

Design pipelines for third-party access (TPA) to ensure effective and optimal utilisation

Optimising Compression Power

Modelled compression power needs to be based on current resources and future demand projections to maximise efficiency and optimisation.

Optimal Layout

Careful placement of pipelines to maximise efficiency and minimise environmental impact.



Industrial Park Development for Gas Utilization

Industrial parks stimulate suppressed demand, create captive markets, whilst improving economic feasibility through centralised infrastructure and shared resources thereby promoting industrial growth.



Promoting ESG Principles Through Gas Policy

Environmental

Properly managed gas infrastructure minimises environmental impact through:

- Methane leakage prevention
- Reduced flaring and venting
- Habitat protection regulations
- Strict measures against pollution

Social

Social benefits include:

- Job creation across the value chain
- Energy access for underserved communities
- Improved public health outcomes
- Skills development and education

Governance

Strong governance frameworks ensure:

- Transparent resource management
- Revenue accountability
- Anti-corruption measures
- Stakeholder engagement



Key Considerations

- Gas – An opportunity to launch sustainable development whilst ensuring fair return to investors
- Thorough diagnostic evaluation of national, regional economies and industry trends, is fundamental
- Vision, must always be clear, and shared with industry and other stakeholders underpinned by a strategic roadmap
- Potential scale of upcoming investments in relation to Namibia's GDP could be significant – high quality decisions are vital



Some Considerations contd.

- Scale requires elevation to national economic development planning across sectors and into the future
- Selection of the mix of gas utilization options and their linkages must be exhaustive
- Value of strong institutional and human capacity to manage life cycle of fields and industry could be greater than fiscal incentives.
- Prudent management of cost would be a critical success factor
- Be deliberate to protect thriving industries from decline
- A Namibia after the petroleum industry must be brighter and prosperous



A night cityscape with a train track in the foreground. The train tracks lead from the bottom center towards the horizon. In the background, there are several tall skyscrapers, some of which are illuminated with lights. On the left side, there are some structures that look like Christmas trees or festive decorations, also illuminated with lights. The sky is a deep blue, and the overall atmosphere is serene and celebratory. The text "Thank you" is overlaid in the center of the image in a white, sans-serif font.

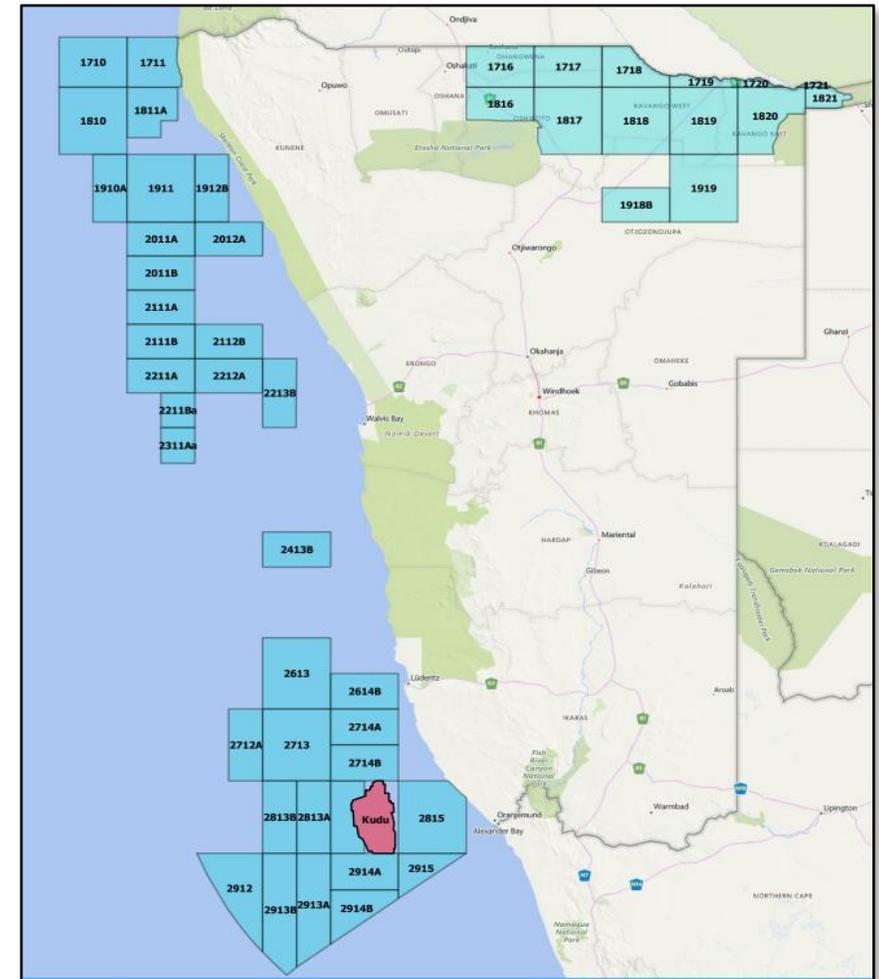
Thank you

Namibia's Petroleum Sector



- **Offshore Basins include:** Orange, Luderitz, Walvis, and Namibe Basins
- **Discoveries:** In 2022, Shell made the Graff-1 discovery in the Orange Basin, followed by Venus-1 by TotalEnergies, Mopane by Galp and later PEL 85 by Rhino Resources
- **Major International Oil Companies (IOCs):** Shell, TotalEnergies, ExxonMobil, Chevron, and others such as Rhino Resources, Galp, Eco Atlantic, Impact, Azinam are currently exploring.
- **NAMCOR** - the National Oil Company holds participant stake in all active 31 exploration licenses vis-à-vis 49 blocks
- **Government Stakeholders:** Ministry of Mines and Energy, Ministry of Finance, NAMCOR, NIPDB, Ministry of Environment
- **Oil & Gas Laws:** Petroleum (Exploration and Production) Act 1991, The Petroleum (Taxation) Act, 1991, Petroleum Laws Amendment Act, 1998, Model Petroleum Agreement, 2007

Licensed Blocks



Source: GlobalData

Exploration License

Production License