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NAMIBIA'S OIL & GAS UPSTREAM SECTOR EXISTING CHALLENGES, POTENTIAL TRANSFORMATION

Mr. Mark Stearnes

Vice Chair NAMPOA

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A commercial oil discovery would be transformational for Namibia

Industry contributions to the country



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- Taxes and royalties to the State
- Significant export earnings
- Direct and indirect employment
- Supply of reliable and competitively priced energy
- Investment of risked capital

The path towards a commercial oil discovery



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First oil discovered in the North Sea in 1969 (Ekofisk) after many exploration wells were drilled

- Success breeds further success, bringing new investment and reinvestment in further exploration
- Multiple field discoveries saw the creation of the Norwegian Sovereign Fund

Encouraging exploration investment to achieve the first commercial oil discovery in Namibia is essential

- It has the potential to transform the Namibian economy with significant increase in GRN revenues
- It will exponentially increase the opportunity for new businesses and skills development
- A large increase in spending power will grow economic activity in all parts of the economy



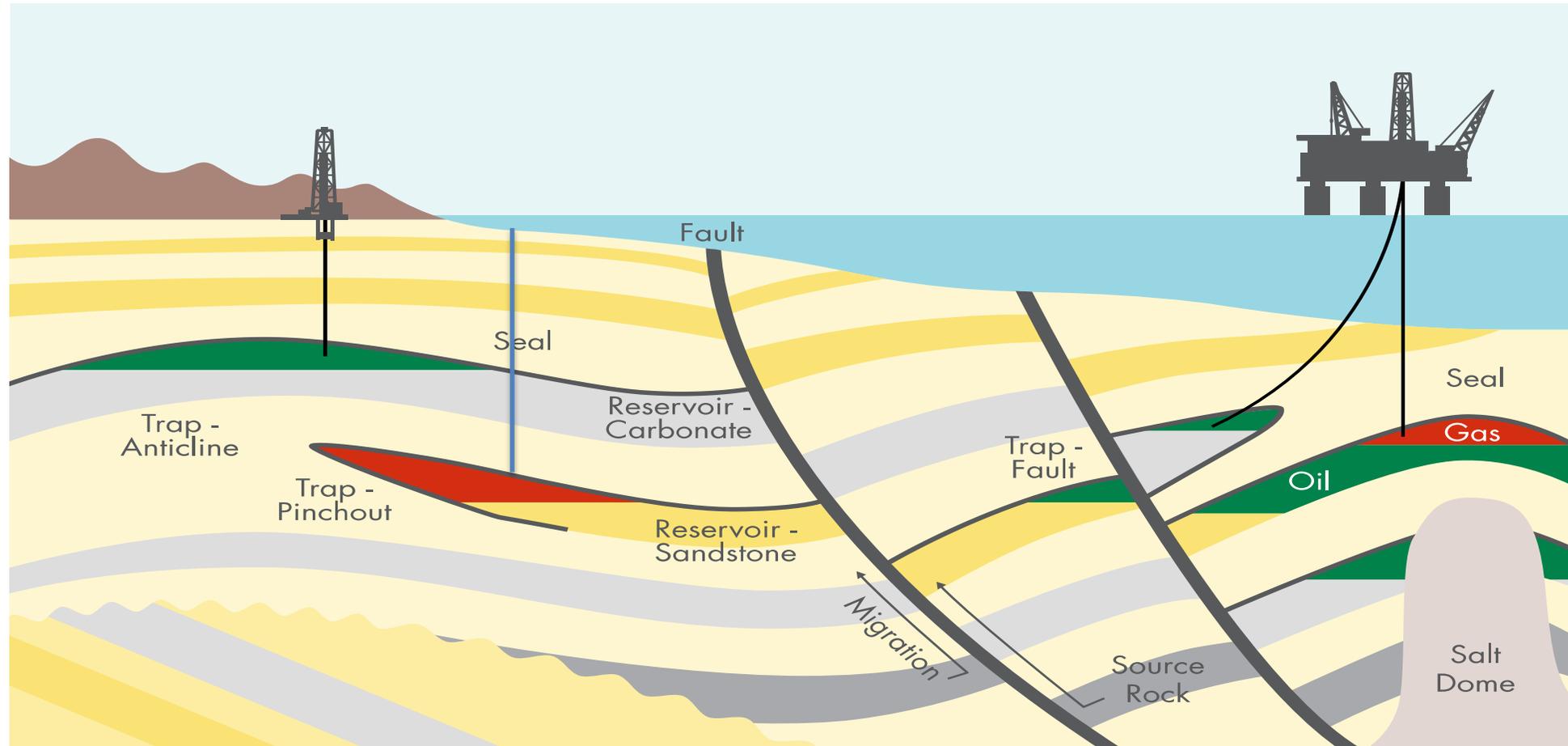
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The process of exploration is hugely complex and high risk.

Understanding what it takes to explore is important.....



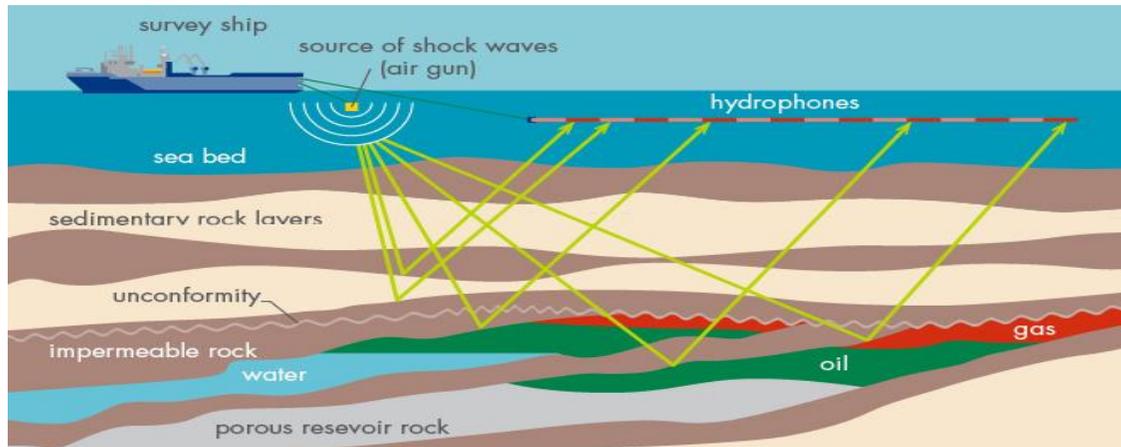
What do we look for?



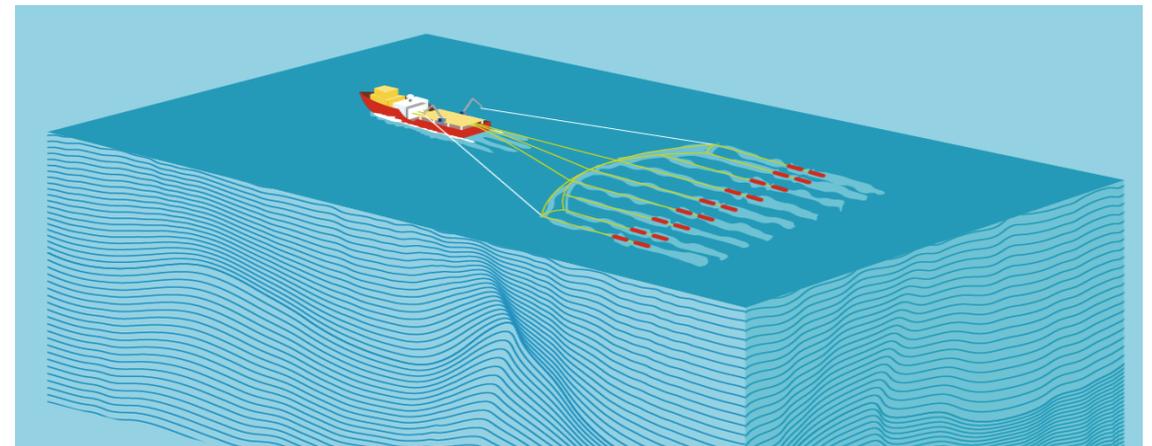


Seismic acquisition

OFFSHORE



3D SEISMIC CUBE



Drilling wells



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ONSHORE



OFFSHORE



TYPES OF WELLS

Exploration wells

Establish the presence of oil and/or gas in a structure

Appraisal wells

Define the volumes with more accuracy, in order to establish commerciality and the forward development plan

Production wells

Production wells are drilled when exploration and appraisal wells have been completed, proving commercial volumes of oil or gas, and a decision has been reached to develop the field.



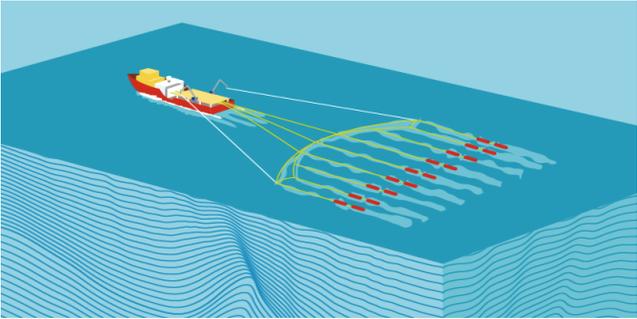
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A solid understanding of oil and gas exploration gives an appreciation of the risks involved, and the massive investments needed

High-risk investments, but no guarantee of success



DATA ACQUISITION



- Geoscience Studies
- Gravity/Magnetics
- Remote Sensing
- Seismic Data

Chance of success: 10-30%

**Investment: USD 10-40 mln
NAD 120 – NAD \$500 million**

Up to 4 years

EXPLORATION PHASE



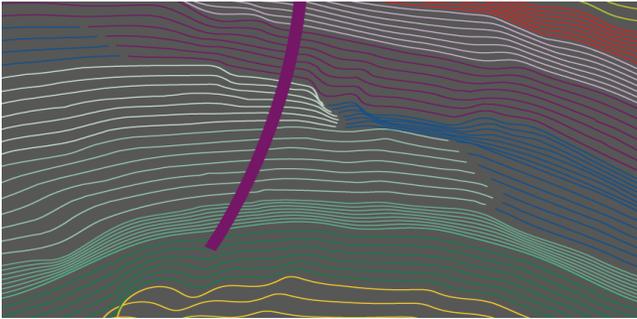
- Establish presence of oil & gas
- Testing different models (plays)
- Initial volume estimates

Chance of success: 10-25%

**Investment: USD 30-80 million per well
NAD 350 million – NAD 1 billion/ well**

Up to 4 years

APPRAISAL PHASE



- Commercial volumes
- Reservoir performance
- Fluid characteristics

Chance of success: 30- 50%

**Investment: USD 30-80 million per well
NAD 350 million – NAD 1 billion/ well**

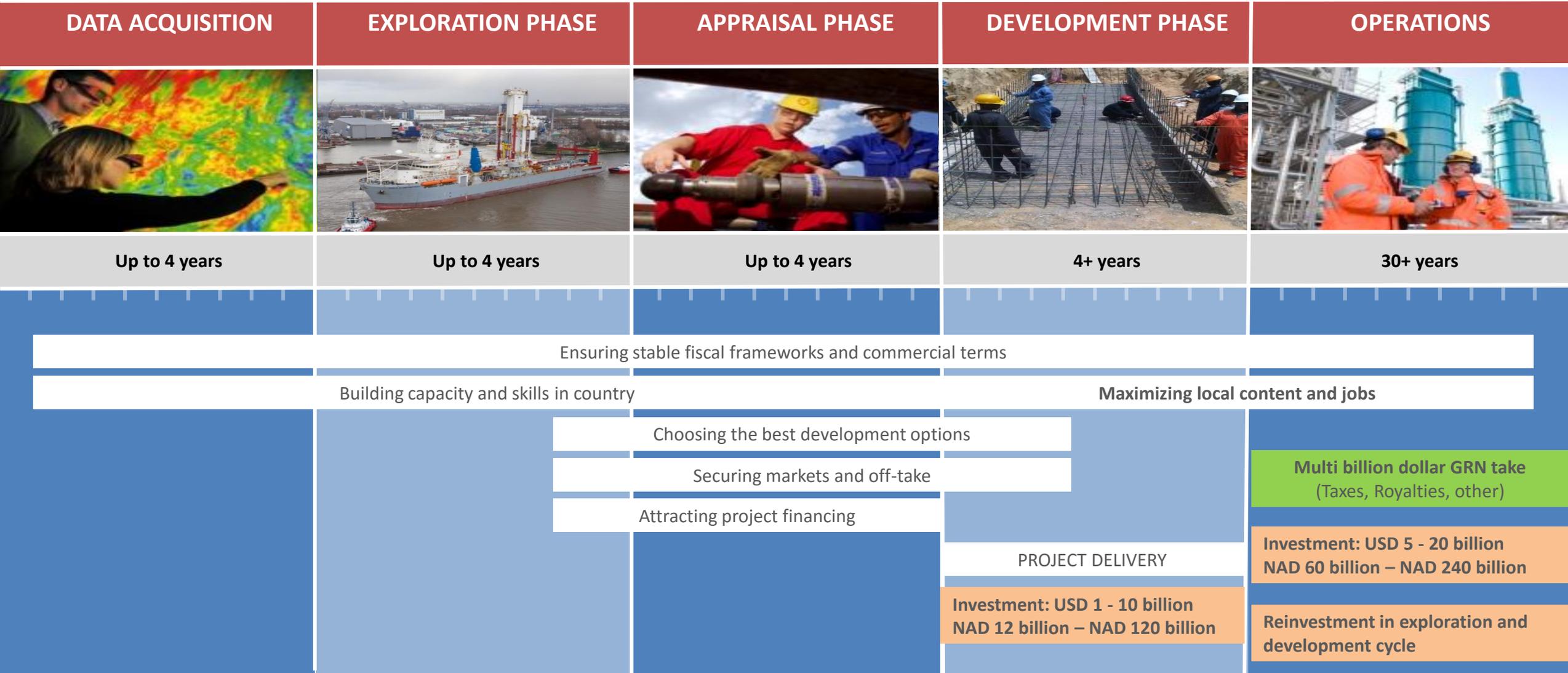
Up to 4 years



Successful oil and gas industry has potential to transform the Namibian economy



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Where is Namibia now on its oil & gas exploration journey?



Namibia's upstream oil & gas sector is evolving and requires an enabling environment

Prospectivity with considerable follow on potential

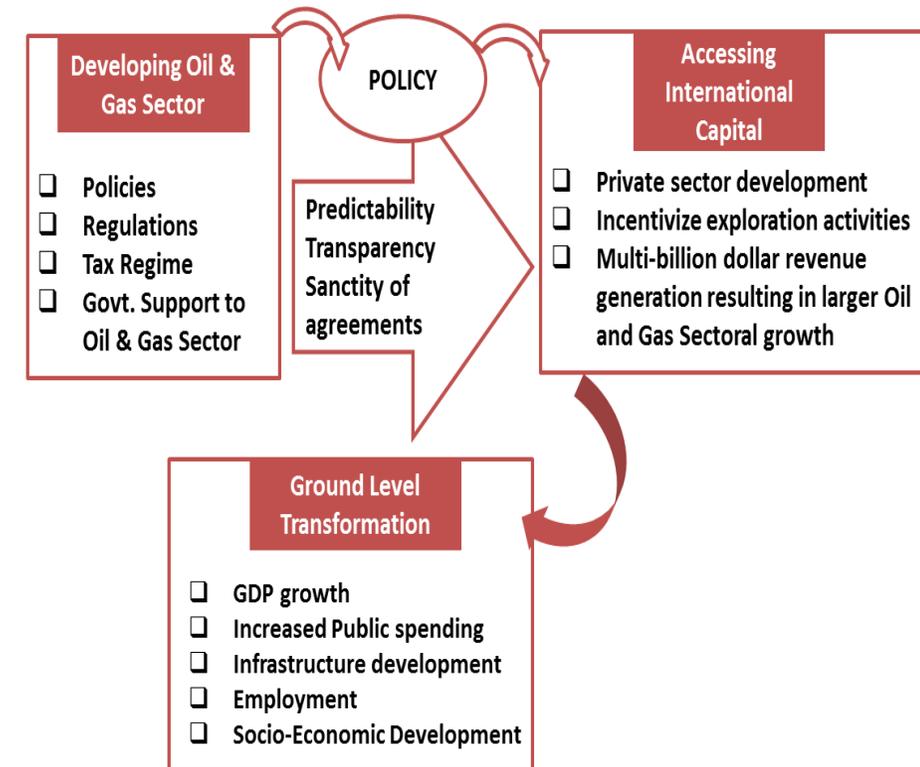
- ❑ Namibia has actively promoted its exploration and development potential
- ❑ Operators increased the understanding of the petroleum geology of the region
- ❑ Favorable terms and updated subsurface models have attracted major players

Challenges

- ❑ Number of dry wells with Kudu the only commercially viable find
- ❑ Large investments required to fund exploration activities with limited funds available globally for frontier exploration, for which Namibia competes

Namibia's investor climate needs to be highly competitive

- ❑ New investments will be heavily dependent on the country's policies which need to be predictable and competitive in the global context to attract exploration investments



Namibia's exploration activities: an overview



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Farm-ins

- Several Operators in farm-down process
- Recent successful farm-ins include Total and ExxonMobil

Seismic campaigns

- 3D seismic programmes recently completed

Drilling campaigns

- Two offshore wells drilled in 2018
- Unfortunately both wells were not successful, but
- Potentially further drilling campaigns in 2019 to 2021 window



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Operators implement several CSR activities in-country based on societal needs and community priorities, all delivered in partnership with local organisations

Shared value creation – local content



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Upstream oil and gas capacity enhancement

Capacity enhancement and knowledge-sharing visits to Operators' facilities and head offices (UK, Netherlands, Portugal, USA, South Africa, Tanzania, Angola, Nigeria, other)

Established an inter-ministerial O&G working group chaired by MME PS and aligned with the critical development path of Namibia's upstream sector

Technical internships

In-country technical lectures by Operators

Tuition fees for Namibian university students

PETROFUND Contributions

The Petroleum Training and Education Fund was formed in 1993 to build capacity for the petroleum industry by offering training, scholarships and support in the scientific fields.

Operators contribute significantly to PETROFUND, with average per annum contributions of N\$ 600,000 per Operator (PETROFUND & In-House-Training)

Corporate Social Responsibility examples



Science & Technology promotion

Support to local initiatives that promote science and technology subjects, an objective of Namibia's NDPs

Early childhood education

Support to education programme for children from impoverished backgrounds
Education facilities

Other examples

Offshore safety survival skills training
Disaster relief equipment
EIA training for MME
Health sector facilities

Road safety skills development

Support to initiatives of national road safety agencies
Sponsoring of defensive driving training courses



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The impact of an oil or gas discovery in Namibia would be significant in terms of providing access to energy, economic growth and social development

A successful oil and gas industry would be a game-changer for the country, which is what makes this such a worthy journey!