

Namibia deepwater

The world's hottest exploration play

November 2023





Namibia broad overview

6 billion boe of oil and gas discovered in the ultra deepwater Orange Sub-basin

Namibia is 2.3x the size of Germany. Independent since 1990. Population of 2.5 million.

Middle income market economy. Commodity exports. GDP per capita is \$5k (top 10 in Africa).

Chevron discovered the Kudu gas field in the 1970s, but it was never developed.

Until 2022, Namibia had a string of dry holes. Very little interest from major IOCs.

Geological similarities with the deepwater Cretaceous basins of Brazil. However, it is not a pre-salt play.



Shell entered its acreage in 2014, farming-down to Kosmos (which left in 2020), then QatarEnergy in 2021.

TotalEnergies farmed-into Impact Oil & Gas' blocks in 2017 then farmed-down to QatarEnergy in 2019.

Everything changed in February 2022 when Shell's first well yielded the Graff oil & gas discovery.

TotalEnergies discovered the Venus field in February 2022.

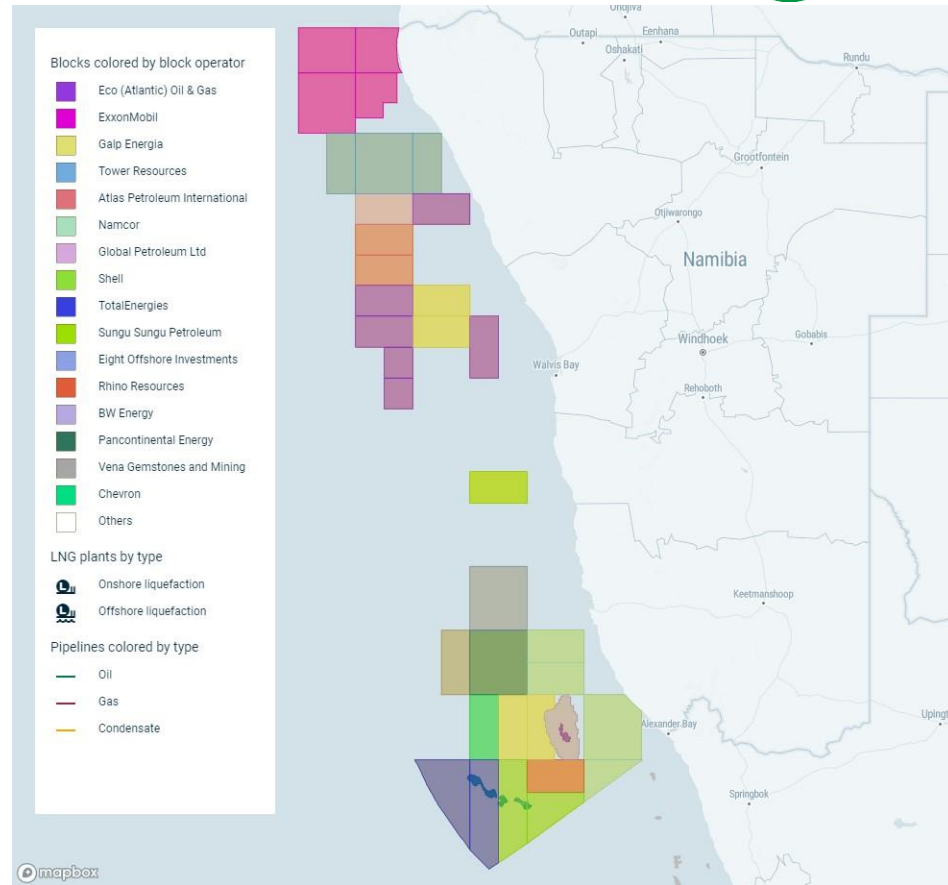
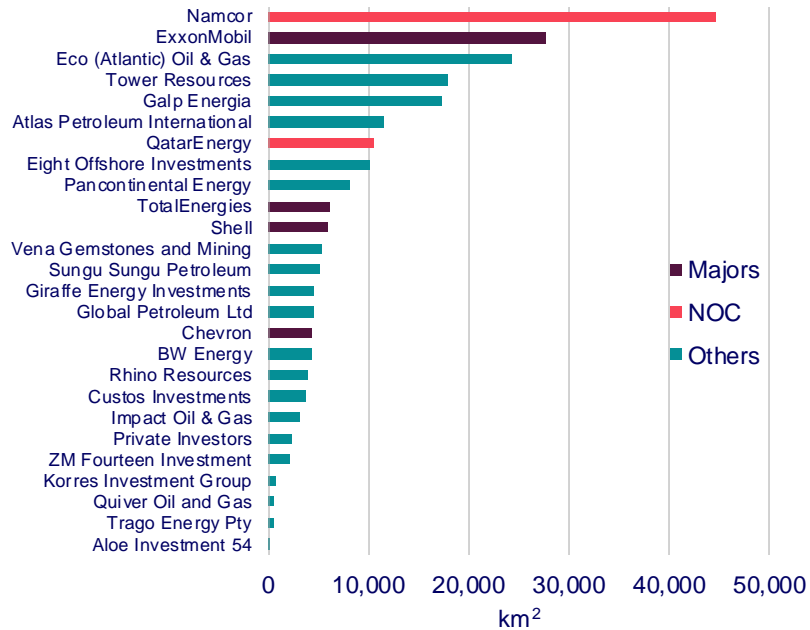
Venus may be the biggest ever oil and gas discovery in Sub-Saharan Africa.



Enormous offshore acreage

230,000 km² licenced acreage offshore Namibia

Net offshore acreage



Fiscal overview – resilient to low oil prices, progressive at high prices



Tax/royalty system with excess profit tax and state equity

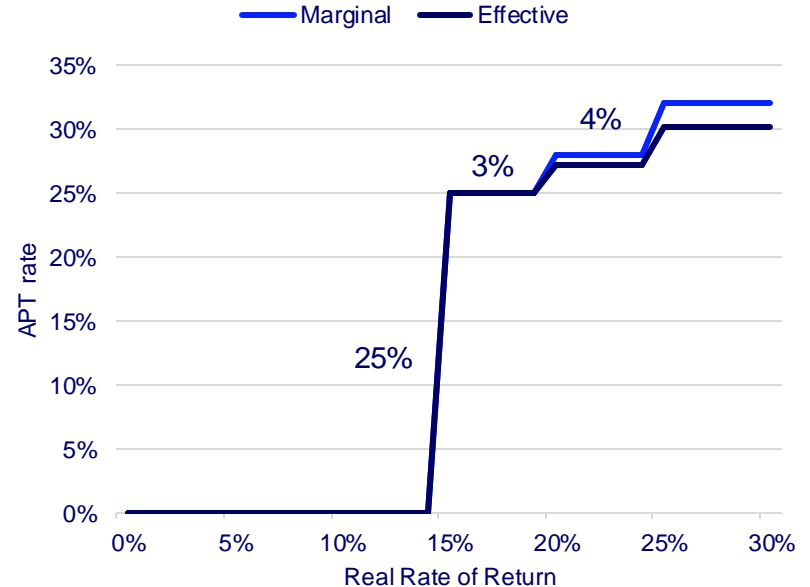
Namibia Simple Concession terms

Ring-fencing at the licence level

Four elements of government take:

1. 5% Royalty (paid in cash)
2. 35% Petroleum Income Tax (PIT)
3. Additional Profits Tax (APT)
 1. 25% to 32% tax rate
 2. Sliding scale linked to the real rate of return above 15%.
 3. Tiers at 15%, 20% and 25% RRR.
4. State Equity 10%
 - Exploration costs carried but not repaid
 - Development costs carried and are re-paid

Additional Profits Tax



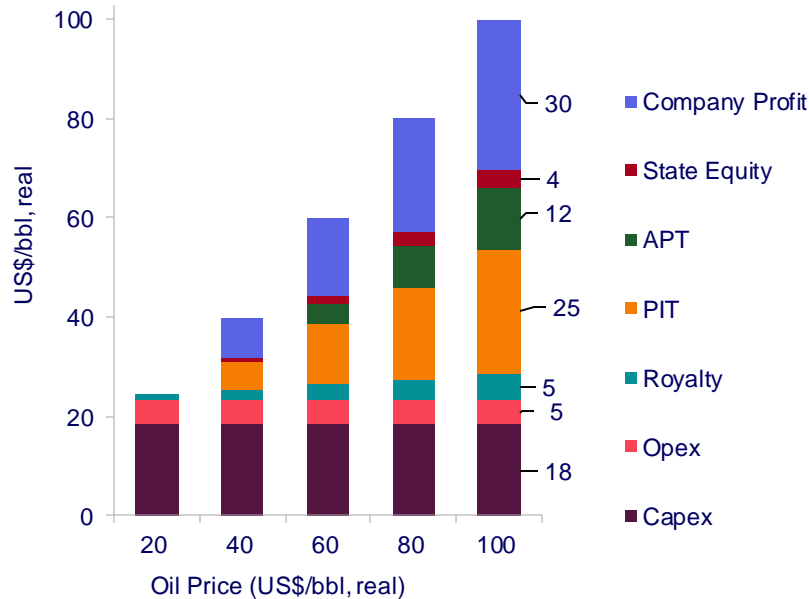
Namibia Simple Concession terms

Fiscal terms consistent with risk/reward profile of frontier ultra deepwater

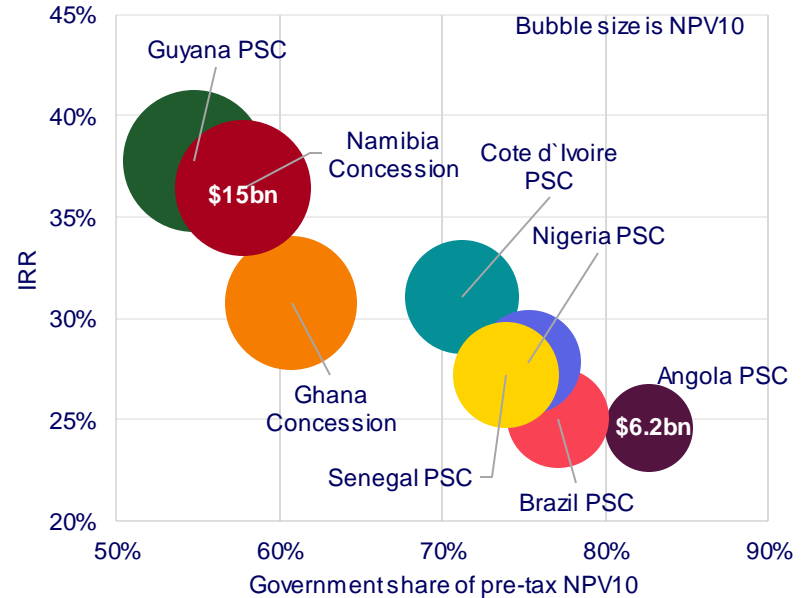


However, basin de-risking means that tougher terms for new acreage are possible in future

Namibia: oil split of the barrel



Fiscal benchmarking: Namibia vs peers (Venus model)



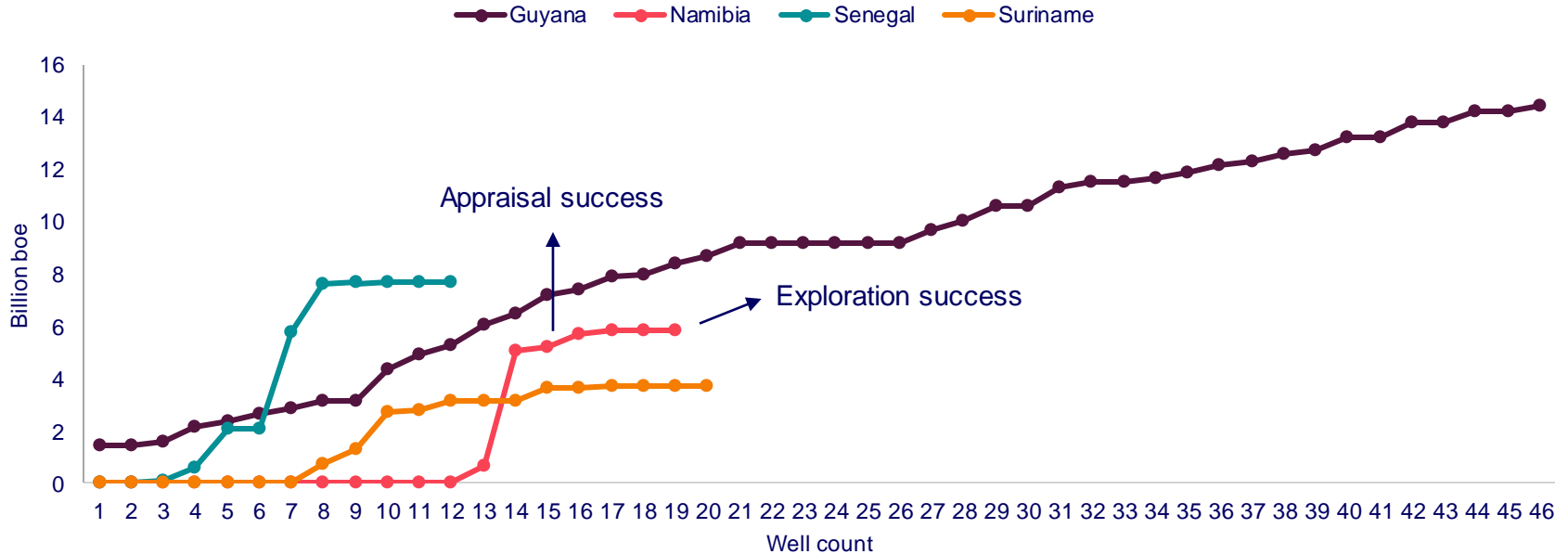
Source: Wood Mackenzie Global Economic Model

Namibia is on trend with other frontier exploration provinces



6 billion boe discovered after six exploration wells; more well results are expected in 2023

Creaming curves for similar frontier deepwater hotspots

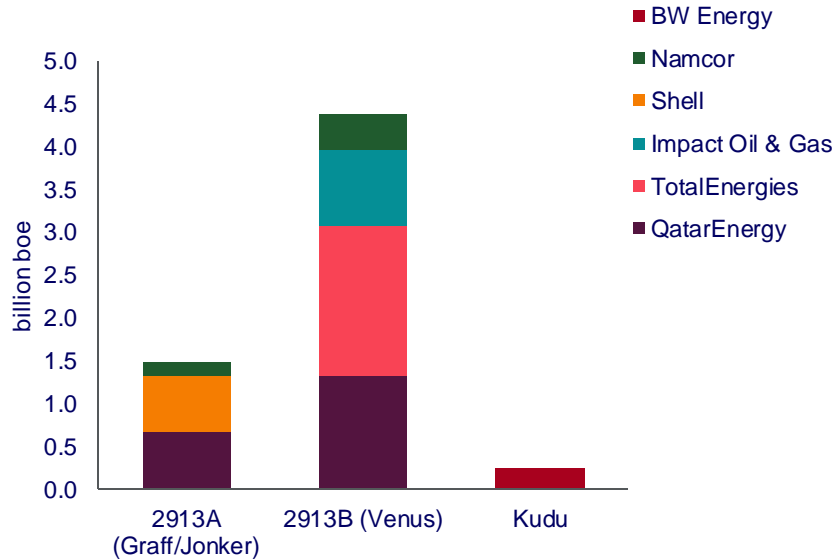




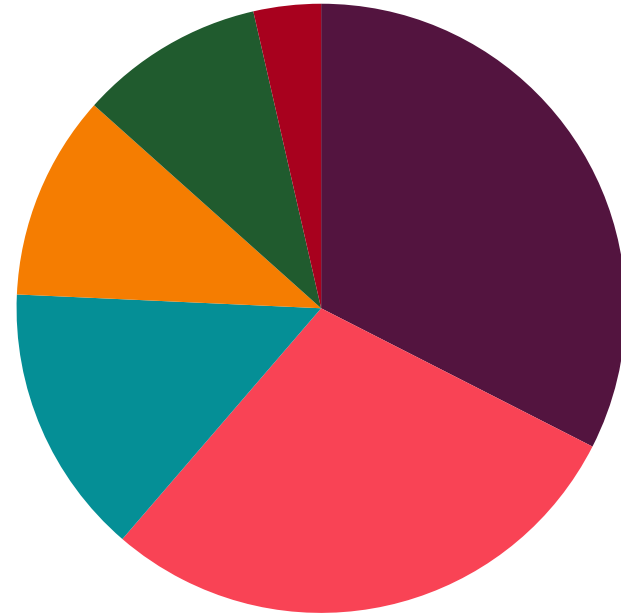
Namibia is an emerging core region for Shell and TotalEnergies

But it's QatarEnergy that has the most resources. Major IOCs expected to swoop on minnows.

Resources by block



Resources by company (Total is 6 billion boe)



The Orange Sub-basin is undergoing intensive exploration and appraisal



Appraisal and well tests will clarify the scale and quality of resource base

2022

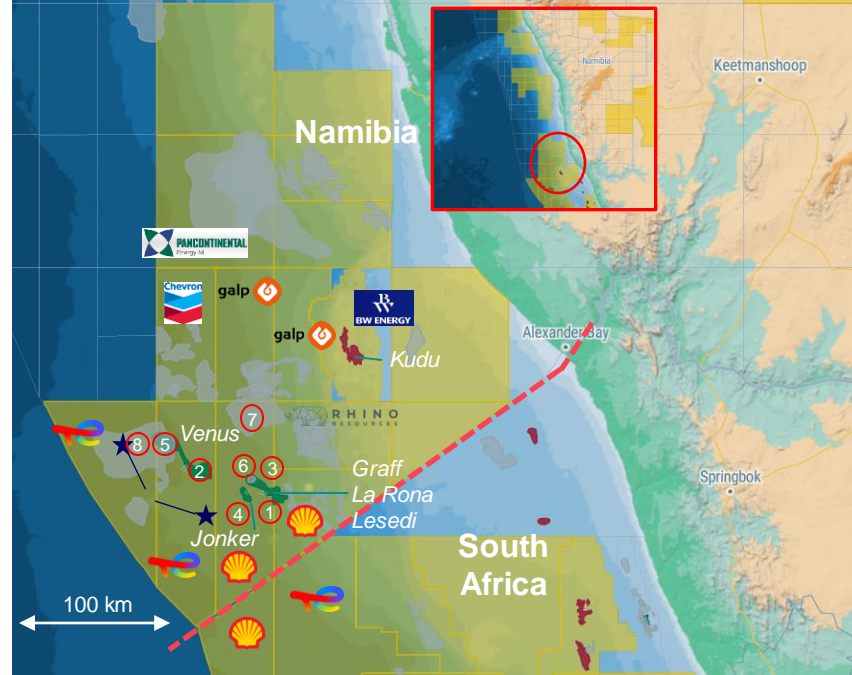
Completed/spudded wells

- ① Basin opening Graff-1 oil & gas discovery
- ② Quickly followed by Venus discovery
- ③ Shell drilled La Rona-1 well on Graff structure
- ④ Shell discovers standalone Jonker
- ⑤ TotalEnergies completed Venus-1A appraisal well
- ⑥ Shell makes Lesedi find close to Graff
- ⑦ Shell Cullinan-1X well dry hole to the north of block
- ⑧ TotalEnergies Nara dry hole west of Venus

2023

Planned well testing & drilling

- TotalEnergies flow test on Venus-1A
- Shell is appraising the Jonker discovery with two wells (and one flow test)
- TotalEnergies to drill Venus North and Mangetti-1X wells
- Galp will drill 2 exploration wells on Block 2813A
- Chevron may drill a well, pending seismic analysis
- Woodside may drill a well, pending seismic analysis

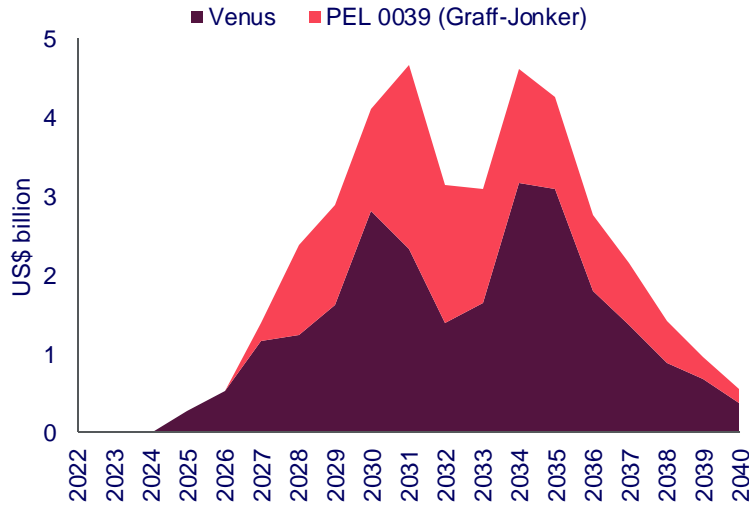


The scale of upstream investment will be unprecedented for Namibia



The operators will adopt a multi-phased development concept focusing on oil initially

Namibia development expenditure (real terms)



Development approach

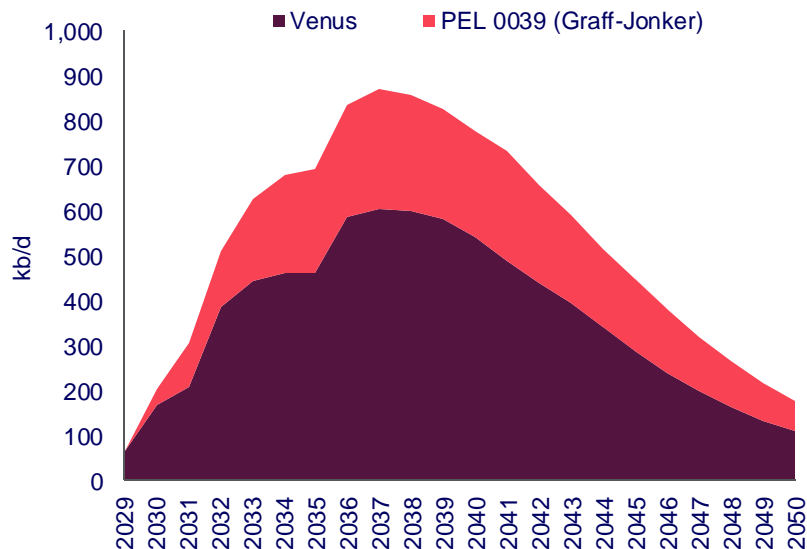
- Newly converted FPSOs will be leased in the initial phase, followed by new-build FPSOs
- Vessel sizes will be between 120 kb/d to 240 kb/d
- Gas re-injection may be preferable initially to benefit from higher oil returns
- Up to 190 subsea wells could be drilled on the fields (comprising producers, water and gas injectors)
- Initial oil phase at Jonker and perhaps Kudu for gas



Oil production will could surpass 500 kb/d within a decade

Gas monetisation will be a major complexity

Early oil potential from Graff & Venus



Gas to come later as challenges are multiple



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Europe +44 131 243 4477
Americas +1 713 470 1700
Asia Pacific +65 6518 0888
Email contactus@woodmac.com
Website www.woodmac.com

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