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The Namibia story: cracking the subsurface code, proving the play, and navigating to first oil

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1974–2022: cracking Namibia's code

From gas trap to oil discovery: three breakthroughs that rewrote the basin

The gas trap 1974-1996

- **1974** Chevron's Kudu **GAS** discovery - overmature source rock masks oil potential
- **1987** Soekor E&P's Ibhubesi **GAS** discovery
- **1996** Chevron's 2815/15-1 **GAS** shows

the clue: **DSDP 361** (1975)→ oil-prone source in deepwater

Gas province verdict

Industry walked away

The breakthrough 2012-2014

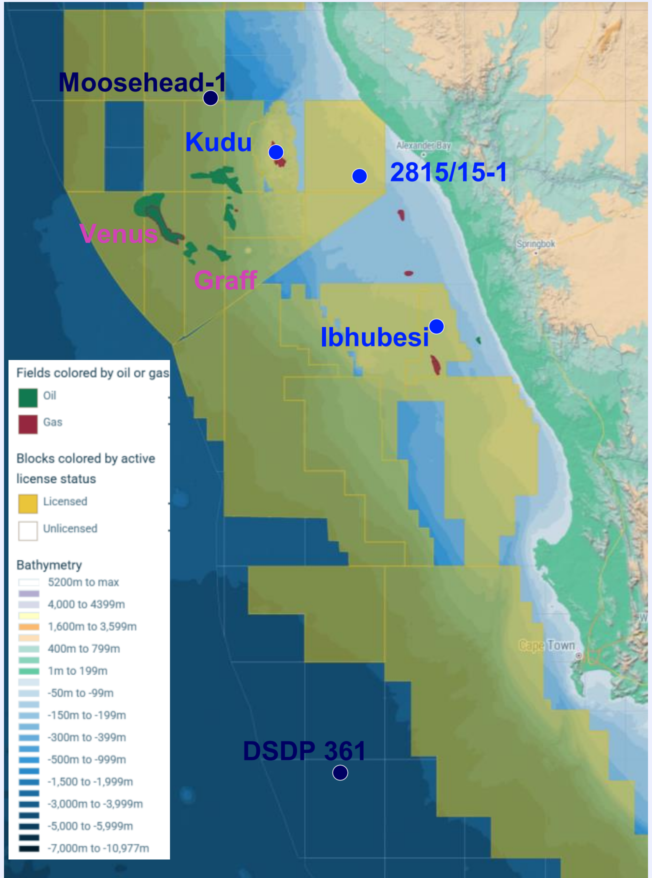
- **2012** first deepwater 2D seismic mapped the play
- **2013** Moosehead-1 (2713/16-1) proved oil prone source rock
- **2014** Hartwig et al. study confirmed high heat flow extends to deepwater

Exploration code cracked

The discovery 2022

- **2022** Shell's Graff and TotalEnergies's Venus play opening discoveries

Basin transformed



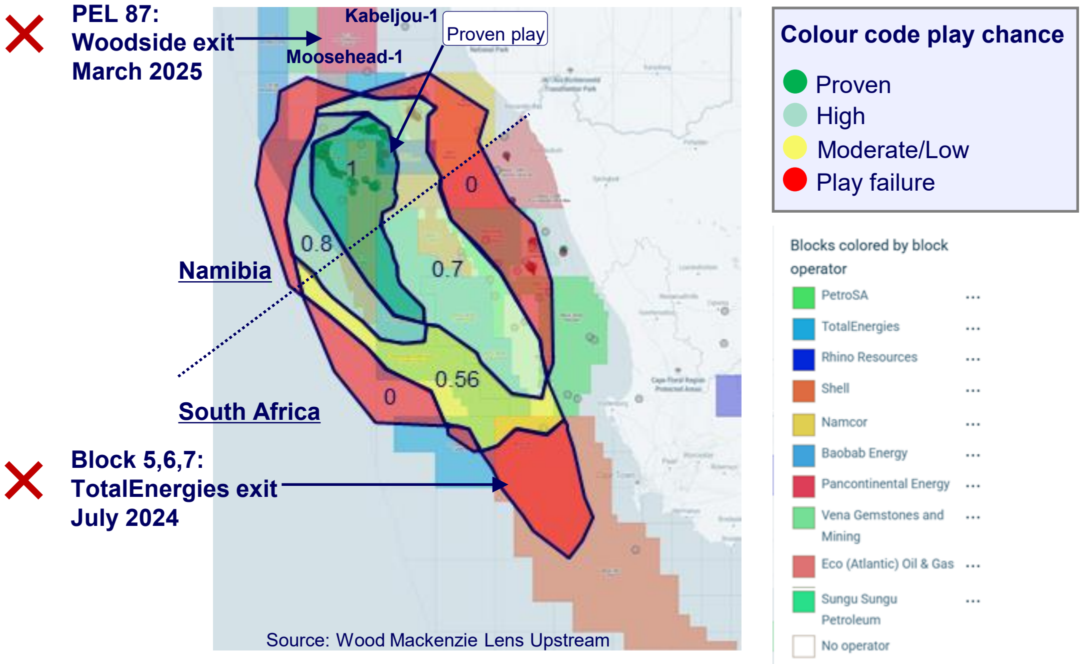
Source Wood Mackenzie Lens Upstream.

Mapping play success and failure in the Orange basin

Our CCRS analysis identifies exploration opportunities and risks, validated by companies' exits

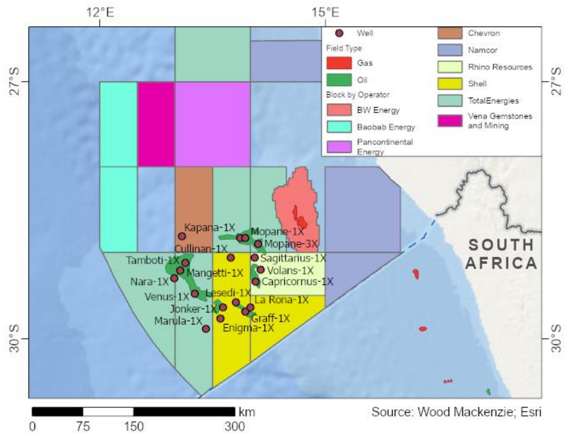
- CCRS map integrates source, reservoir, and seal risk
- Published June 2024 and market validated: TotalEnergies & Woodside exits match our play failure zones
- South Africa opportunity: 70-100% play chance, largely undrilled

Combined Common Risk Segment (CCRS) Map Cretaceous deepwater turbidite play

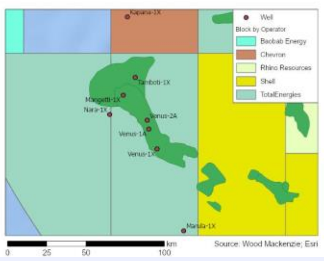


Exploration focus

Four years, 14 discoveries: what 18 exploration wells revealed

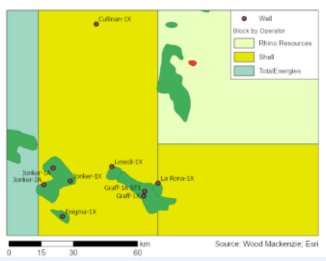


Venus and surroundings



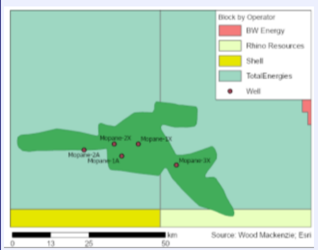
- **2022:** play opening **Venus-1X**
- **2023:** Nara 1X
- **2024: Mangetti 1X**
- **2025: Tamboti 1X**, Marula 1X
- **2025:** Kapana 1X

Jonker-Enigma-Graff complex



- **2022:** play opening **Graff-1X, La Rona-1X**
- **2023: Jonker-1X, Lesedi-1X**, Cullinan-1X,
- **2024: Enigma 1X**

Mopane



- **2024: Mopane-1X, 2X**
- **2025: Mopane 3X**

Sagittarius-Capricornus-Volans

- **2025: Sagittarius 1X, Capricornus 1X Volans 1X**

Venus stands alone.

All surrounding wells show **reservoir quality degradation in all directions.**

✓ **Only Venus commercial, despite low permeability.**

Shell's challenge

6 wells across 3 plays- **geologically successful**.

✗ **Commercially unviable**: **low permeability,** compartmentalisation

Result: $400M write-off (Q4 2024)

Mopane: multi stacked discovery.

✓ **High permeability + overpressure = exceptional deliverability**

13+ stacked levels: variable fluids, consistent reservoir quality.

PEL 85: Three discoveries, three fairways, three fluid systems.

Capricornus (oil), Volans (rich gas condensate, CGR ~160 bbl/mmcf)

✓ **Both, high permeability and strong deliverability**

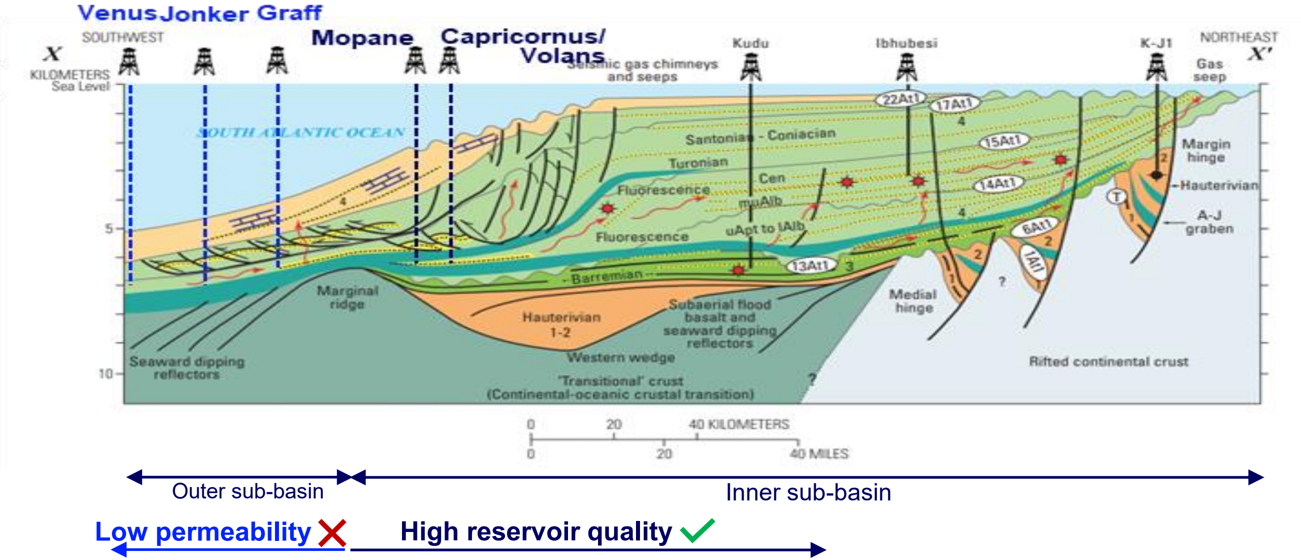
Sagittarius: under evaluation

Permeability is the basin's make-or-break variable

The petrophysical sweet spot formula

Less distal + inner flank location = high-quality reservoir

Schematic stratigraphic cross section through the Orange Basin



Modified from Jungslager (1999), Salomo (2011), Brownfield (2016)

Mopane, Capricornus, and Volans have unlocked the inner sub-basin's potential by proving high-quality reservoirs in the Cretaceous deepwater turbidite targeted.

Key Differentiator: Unlike TotalEnergies' and Shell's deeper-water finds with low permeability, these discoveries sit in the inner flank of the outer high shaped by the seaward dipping reflectors.

Venus, Mopane, and Capricornus: navigating three geological realities

Low permeability. Fluid variability. Fast-track eligibility.

Venus: one main reservoir but low permeability rock

A single, 600 km^2, 80-120-metre-thick reservoir lobe technically challenging: critically low permeability (<10 mD) and high GOR.

Mopane: a complex giant oil, gas and condensate structure

A massive turbidite complex: 13+ stacked Cretaceous levels, mostly unexplored. Exceptional flow rates (14,000 boe/d tested), high permeability, and overpressured reservoirs.

The key challenge? Understanding what lies in the undrilled layers.

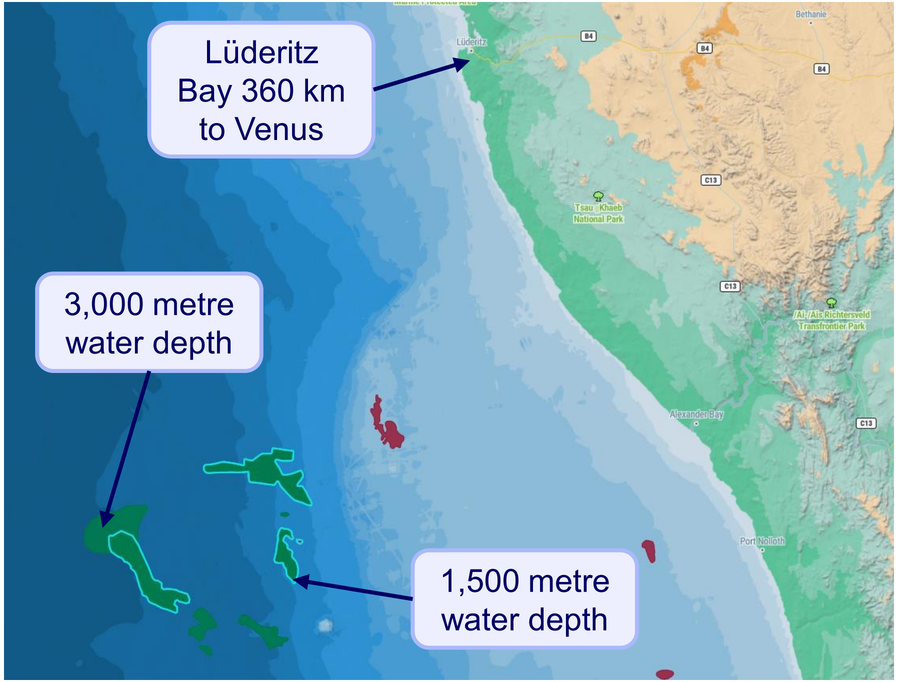
Capricornus: fast-track development eligible

All key metrics align: 38 metres of net pay, 37°API oil, and exceptional 11,000 b/d tested well productivity. Minimal complexity, maximum development readiness.

Development activity will focus on oil first

Major greenfield project and local infrastructure challenges must be overcome for a multiple FPSO future

- **Location**
  - Ultra deep water will impact subsea design & costs
  - Seabed topography and distance could impact any pipelines to shore
  - Met ocean conditions are at the extreme boundary of oil and gas operations
  - Shoreline is largely national park or protected status
- **Technical**
  - Low permeability reservoirs
  - High GOR limits oil recovery as gas handling takes up facility space
- **Infrastructure & market**
  - Limited energy infrastructure in country including ports, yards, storage, warehouses, fabrication, training facilities
  - No established local gas market

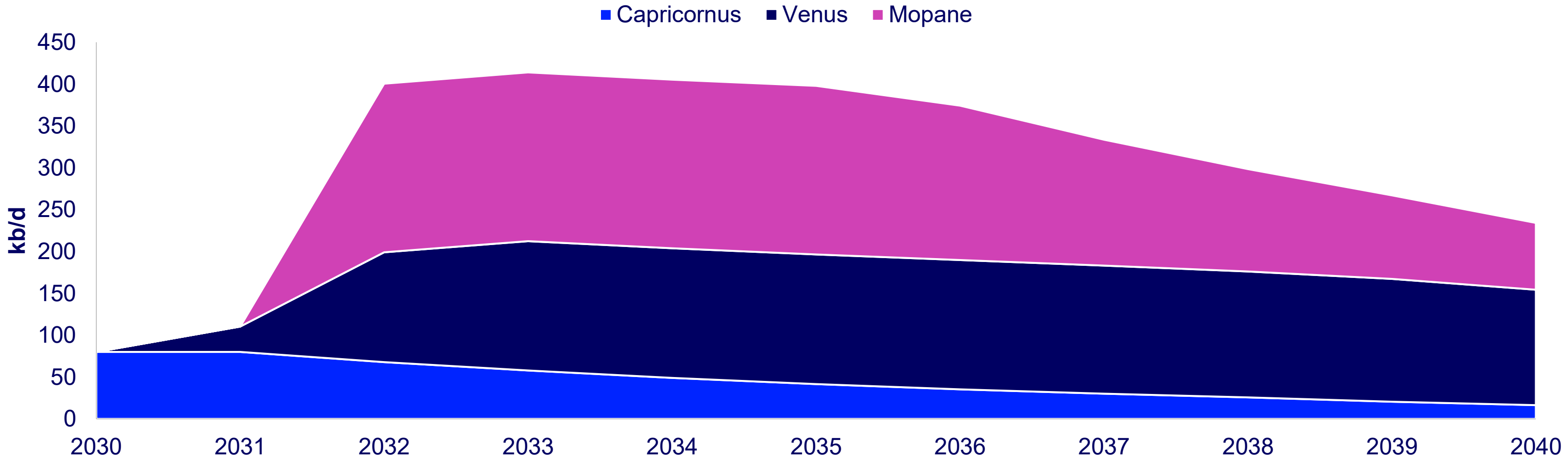


Source: Wood Mackenzie Lens Upstream, mapbox.com

Namibia could be SSAs third top oil producer behind Nigeria and Angola

The scale of upstream investment will be unprecedented for Namibia

Namibia liquids production

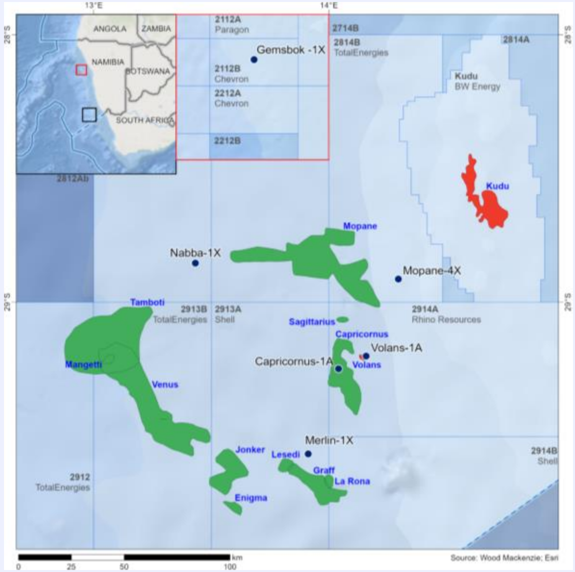


Source: Wood Mackenzie

Milestones and next steps

Shell, Rhino, TotalEnergies, Chevron lined up for 2026 drilling

Drilling plans



- Merlin-1X
- Capricornus-1A and Volans-1A
- Mopane-4X
- Nabba-1X
- Gemsbok-1X

Development milestones

- **Venus** project approval
- **Mopane** appraisal, definition of project scope and size
- **Capricornus/Volans** appraisal and development concept, definition of project scope and size
- **Lüderitz port** expansion consultations, design completion and construction tenders

Thank you

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