

NAMCOR

NATIONAL PETROLEUM CORPORATION OF NAMIBIA (PTY) LTD

Partnering with NAMCOR to Unlock Hydrocarbon Potential Offshore Namibia

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Geoscientist



Outline

-  Overview
-  Sedimentary Basin
-  Exploration Licenses
-  Potential Source Rocks
-  Petroleum Systems and Prospectivity
-  Exploration Database
-  Exploration Opportunities
-  Ongoing Projects
-  Conclusions

Namibia Overview



- 🌍 Democratic state with a multi-party system.
- 🌍 President head of state.
- 🌍 Legally arms; Executive, Judiciary and Legislature powers

Stats

- 🌍 Population: 2.5m (2016 IMF actual)
- 🌍 Land Area: 824,269 sq km
- 🌍 GDP : ~10.27 Billion USD (2016)
- 🌍 GDP per capita: 4,140.46 USD (2016)
- 🌍 GDP growth rate: 1.2% annual change (2016)

Taxation on oil production

- 5% state royalty
- 35% corporate tax
- No capital gain
- IRR > 15%-APT

NAMCOR – Structure

Legally enacted entity established under the Petroleum (Exploration and Production) Act of 1991

Main functions:

- Ensuring optimum exploitation of Namibia's petroleum resources and meaningful Namibian participation in petroleum-related activities
- Marketing and Promotion
- Technical Advisory Services to the Ministry of Mines & Energy

Ownership structure of NAMCOR

Government of the Republic of Namibia

Ministry of Mines and Energy

National Petroleum Corporation of Namibia (Pty) Ltd "NAMCOR"

Upstream

Exploration

Development

**Technical
Adviser**

Downstream

**Supply and
Trading**

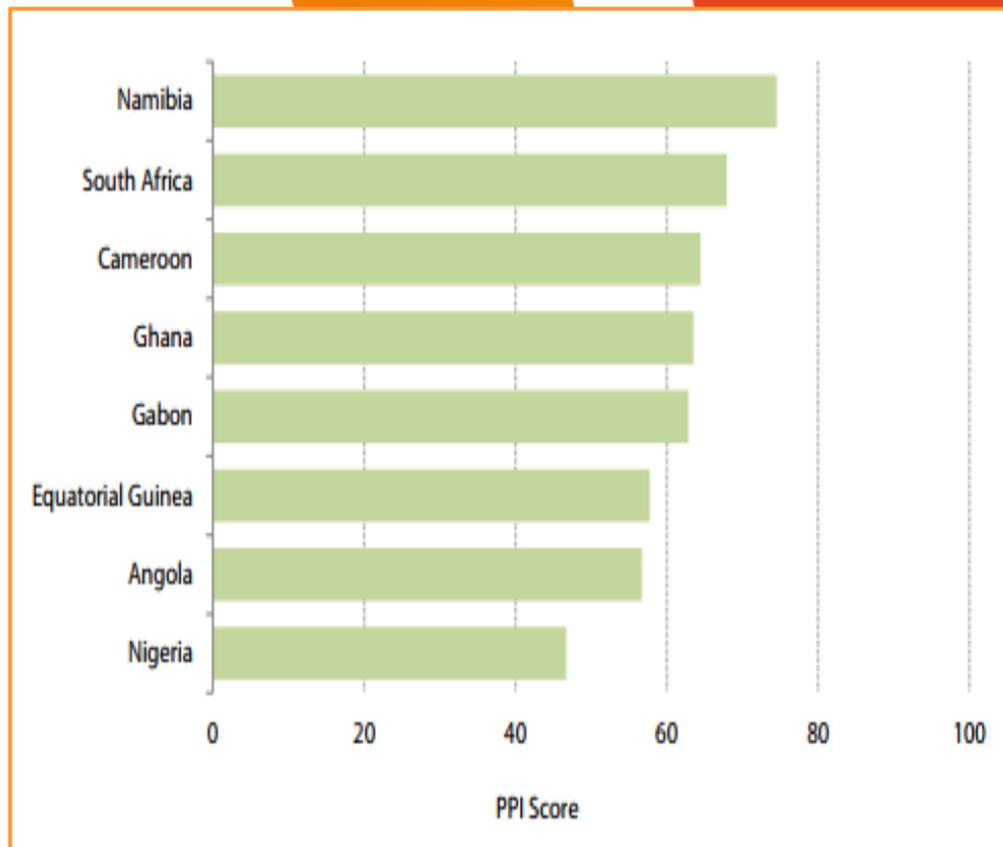
**Commercial
and
Marketing**

NAMIBIA – Global perspective

Country to invest, work and live

Rank	Namibia in World
Democracy Index <i>(Economist Intelligence Unit, 2016)</i>	#71 (165)
Global Peace Index <i>(Institute for Economics & Peace, 2016)</i>	#50 (163)
Low Corruption <i>(Transparency International, 2016)</i>	# 53 (176)
Prospectivity Index <i>(Legatum Institute, 2016)</i>	#68 (149)
Rule of Law Index <i>(World Bank, 2015)</i>	#62 (200)
Press Freedom <i>(Reports without Borders, 2017)</i>	#24 (180)
Worldwide Governance Indicators <i>(World Bank, 2015)</i>	#64 (200)
Economic Freedom <i>(Heritage Foundation, 2017)</i>	#78 (180)

Namibia is ranked as best place for petroleum exploration investment in Africa according to the Global Petroleum Survey 2016



Global Petroleum Survey 2016

Fraser Institute

<https://www.fraserinstitute.org/studies/global-petroleum-survey-2016>

Sedimentary Basins

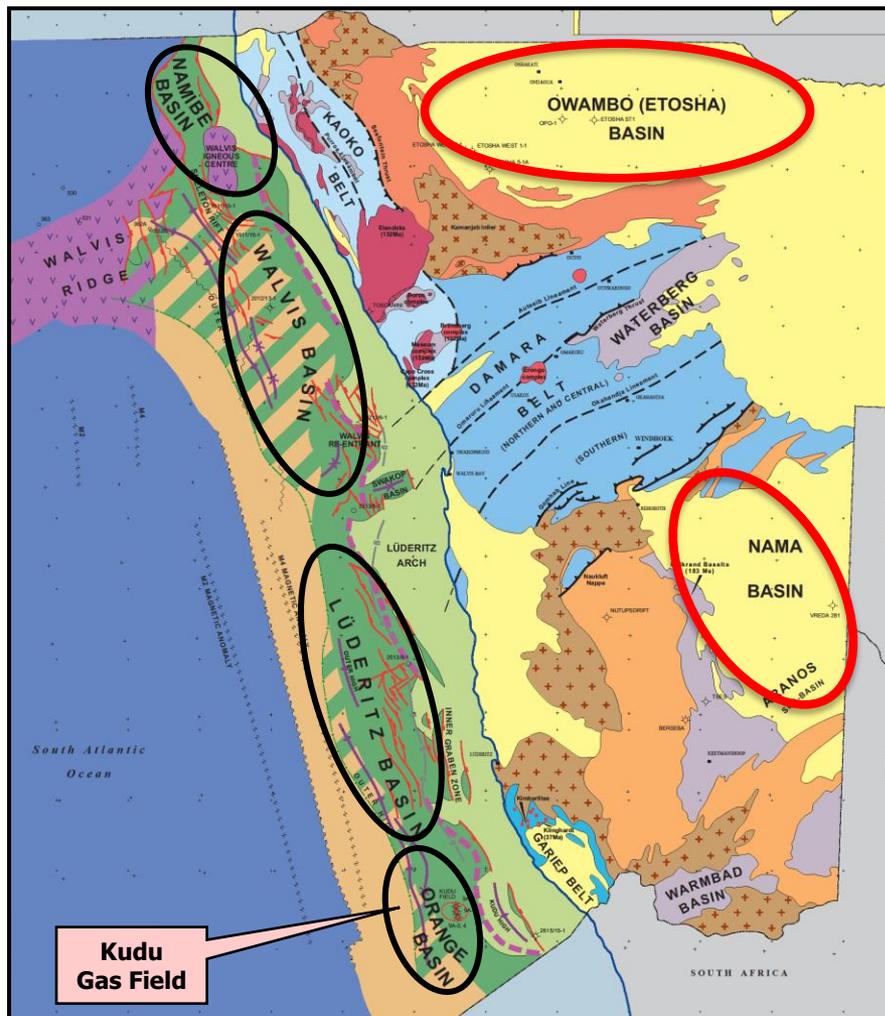
Legend: Offshore Geology

-  Early Cretaceous to Tertiary Drift Section overlying continental basement
-  ?Late Jurassic to Early Cretaceous Syn-rift section
-  Main Area of seaward-dipping reflectors
-  Tentative area of syn-rift section underlying seaward dipping reflectors
-  Walvis Ridge volcanics
-  Oceanic Crust

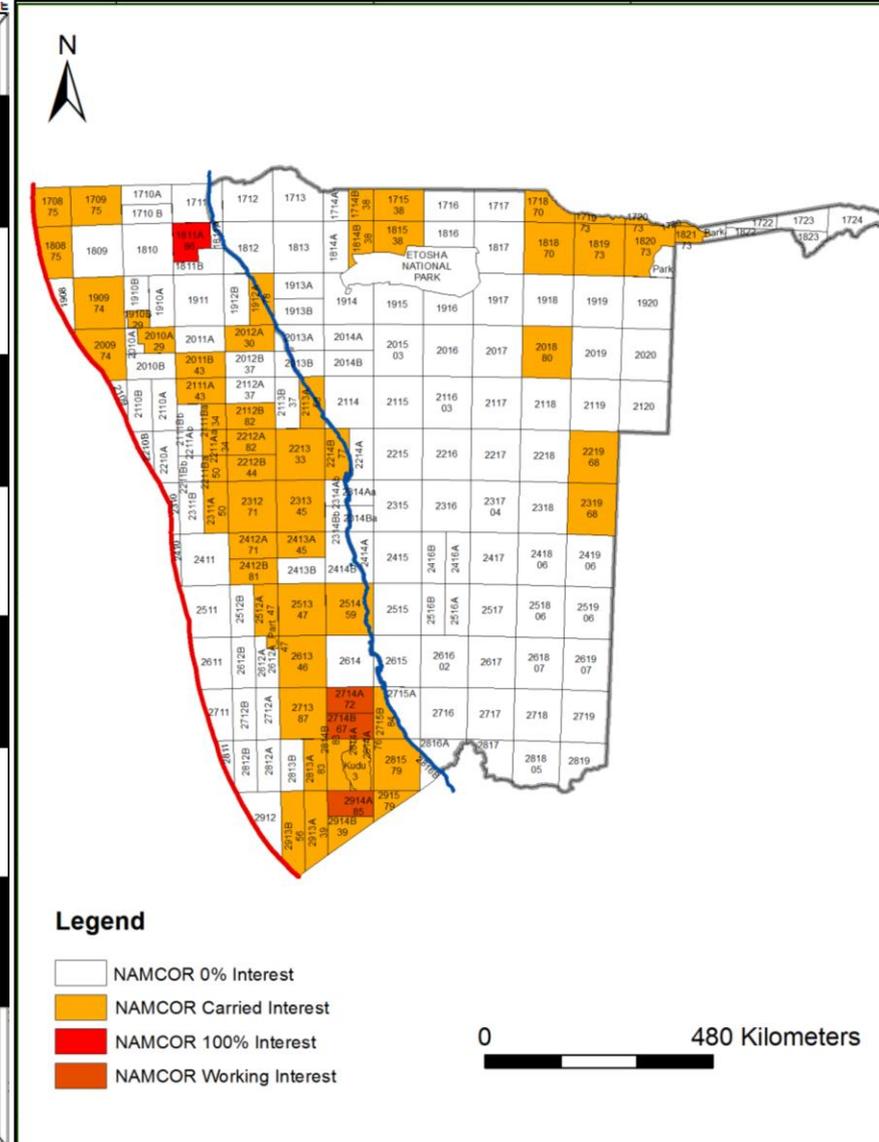
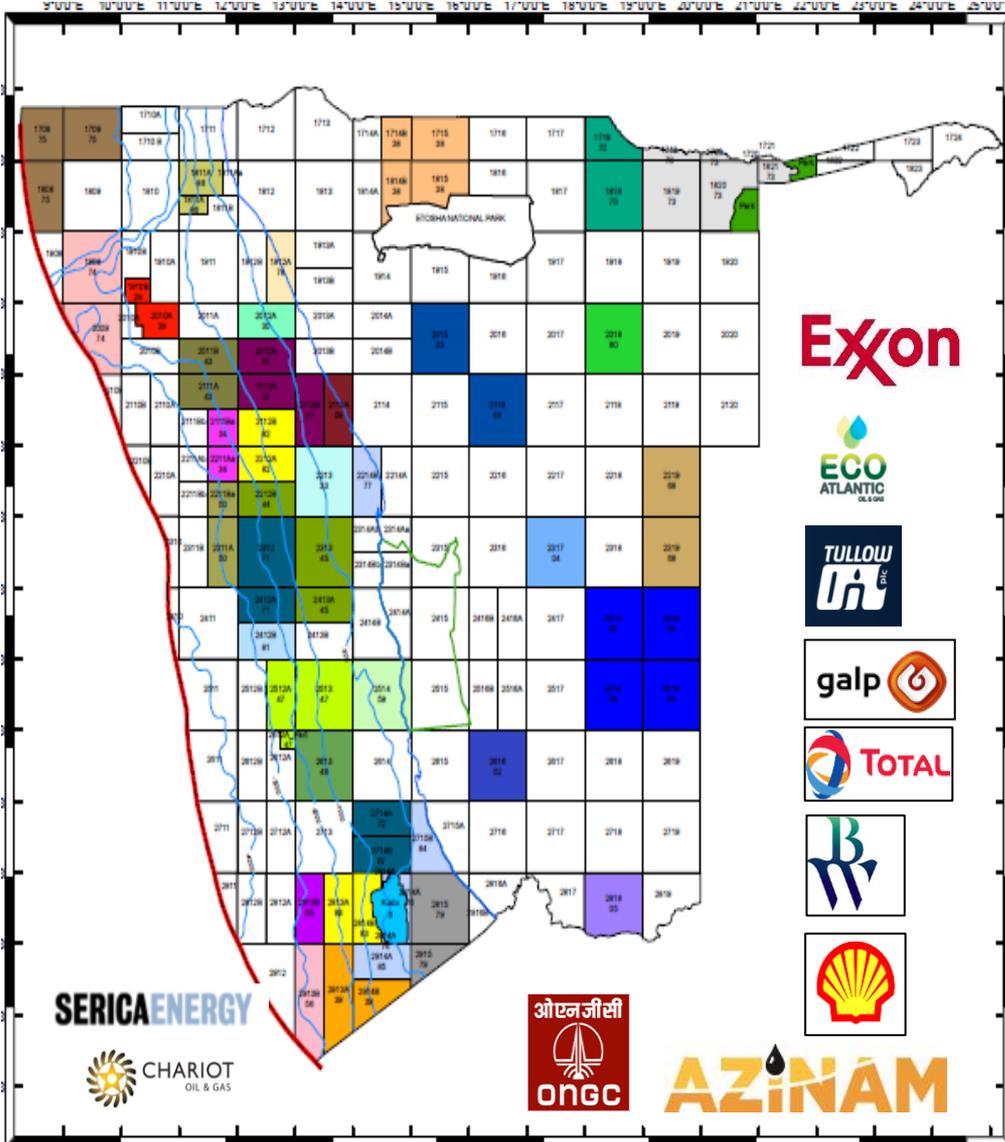
 4 offshore basins

 2 onshore Basins

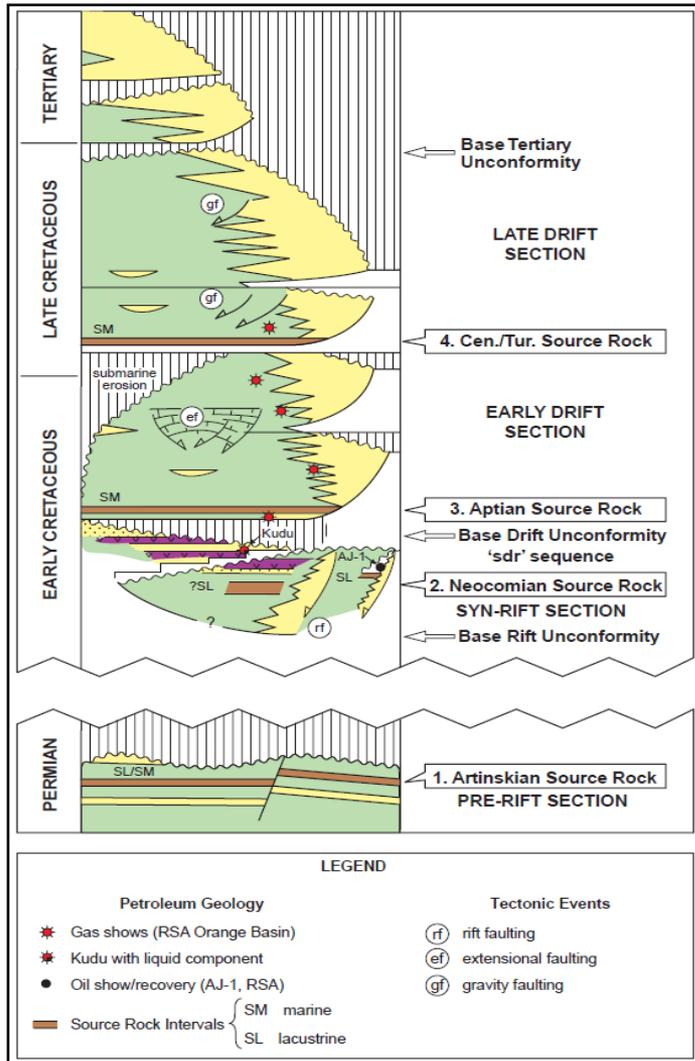
 **One offshore gas discovery**



Exploration Licenses



Potential Source Rocks



Turonian-Cenomanian

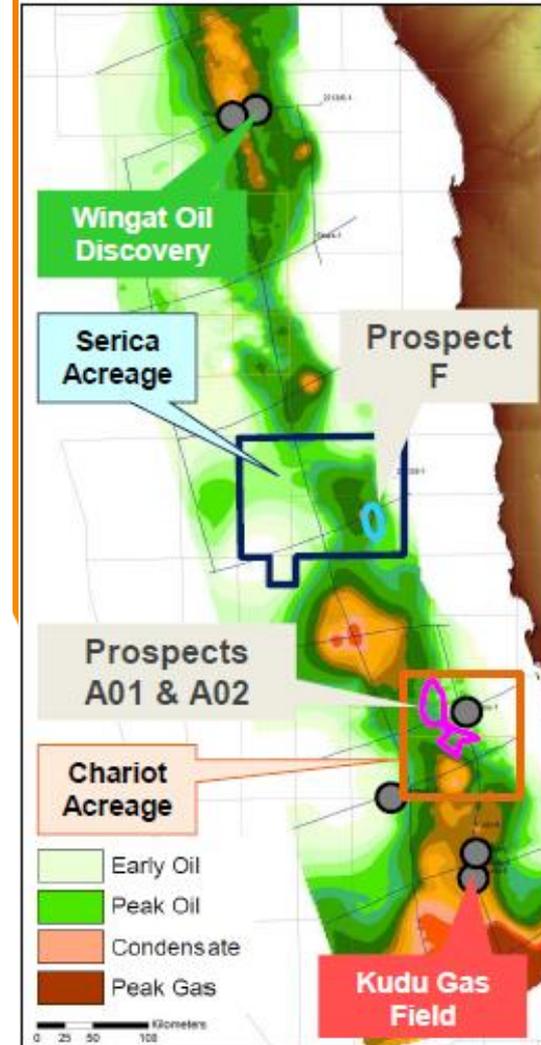
- Proven in Walvis and Orange Basins
- Marine, oil-prone
- Early to late mature
- TOCs up to 10%;

Apto-Albian

- Proven in Walvis (Wingat-1 & Murombe) and Orange Basin (Kudu)
- Marine, oil and gas-prone
- Early to Late mature
- 2 % TOC proven in the Kudu field

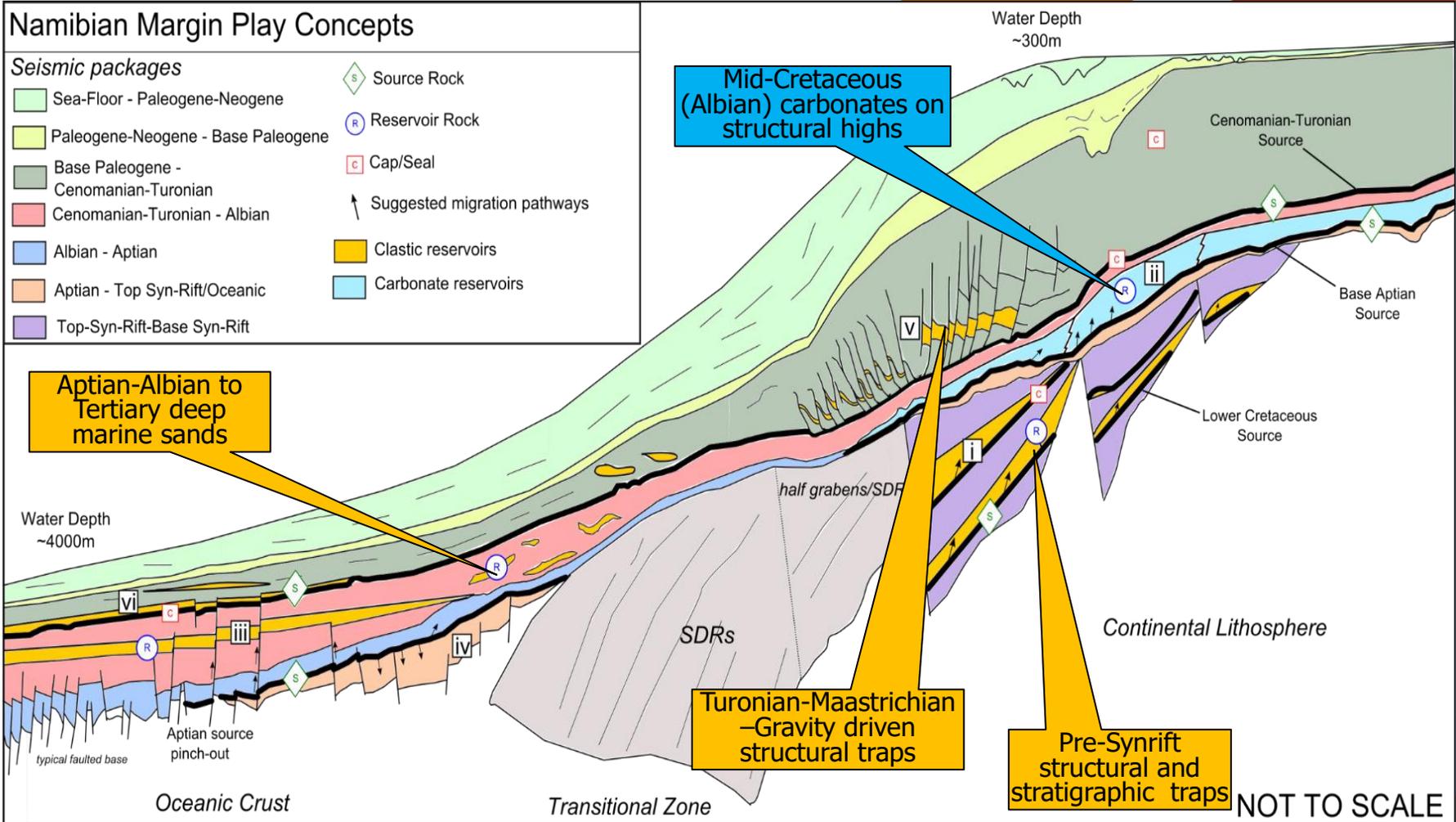
Neocomian, syn-rift

- Proven in Orange Basin, South Africa (A-J1 well)
- Lacustrine, oil-prone



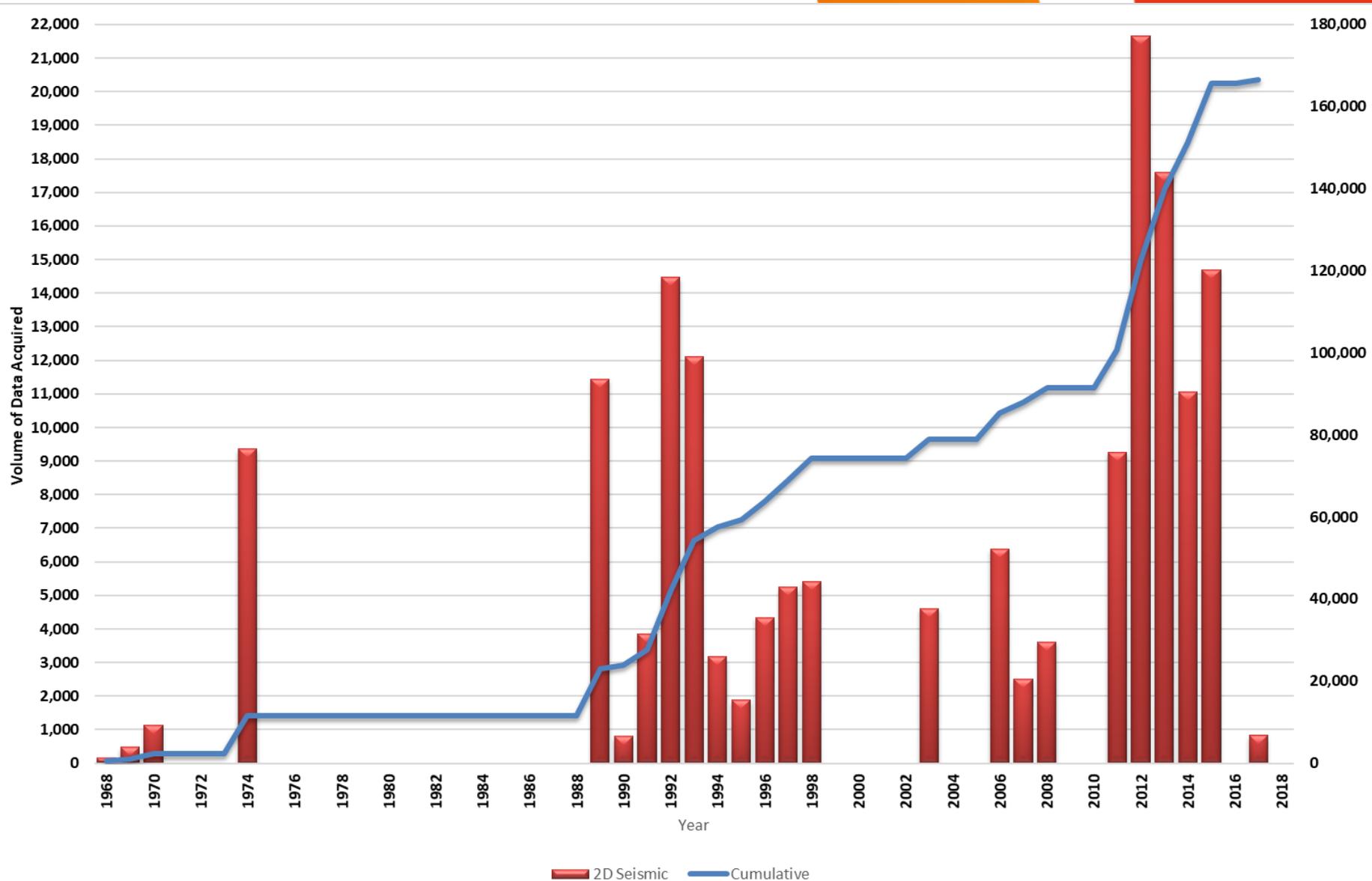
Aptian Source Rock Maturity (after Chariot, APPEX 2016)

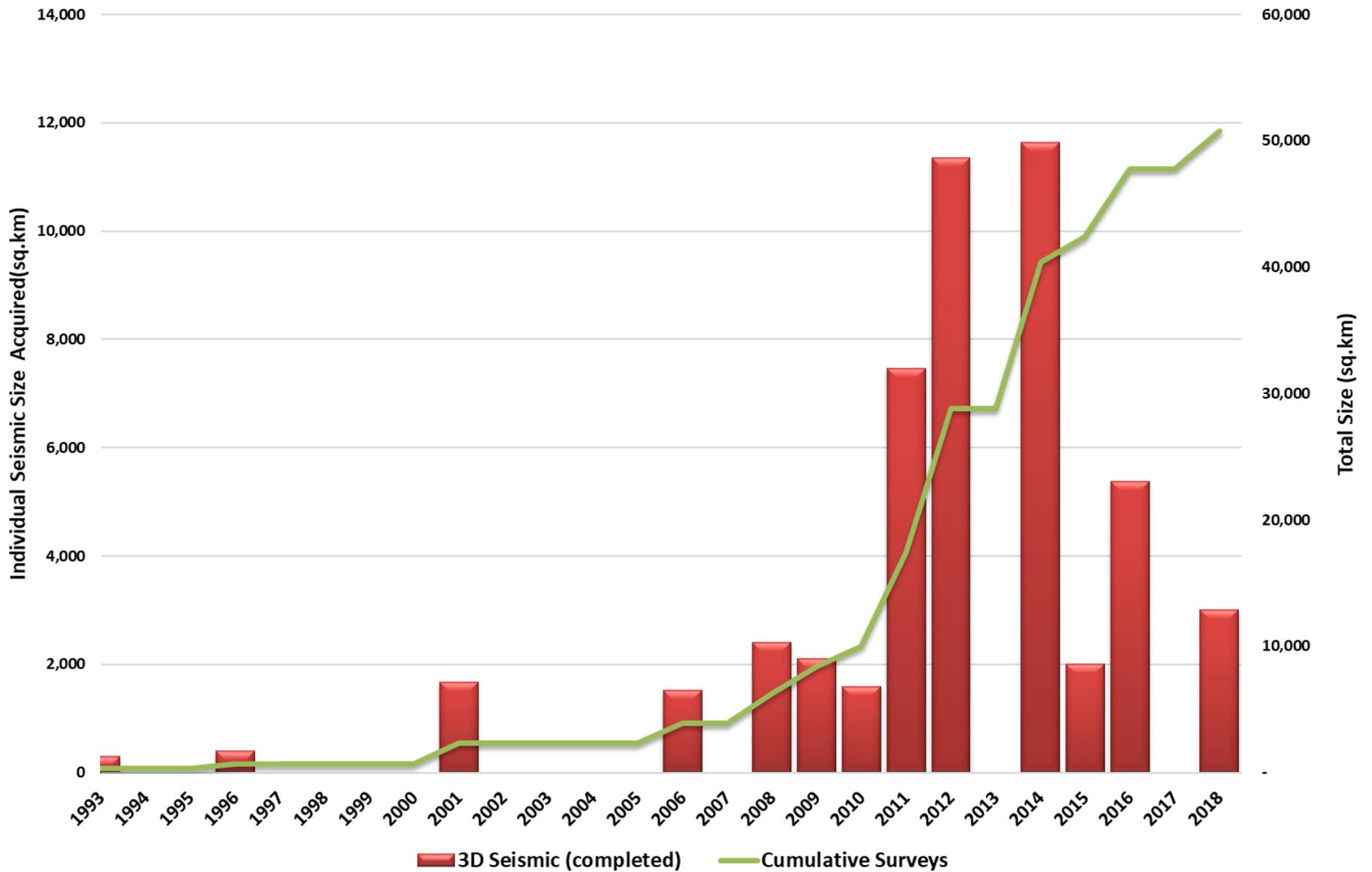
Petroleum Systems and Prospectivity



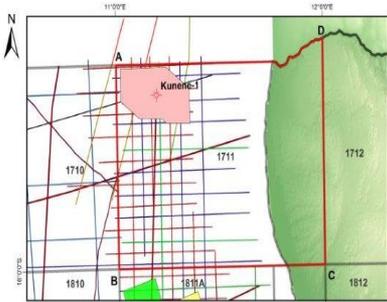
(After PGS, 2014)

Seismic Databases



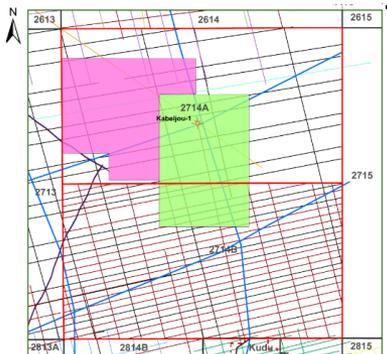


Exploration Opportunities



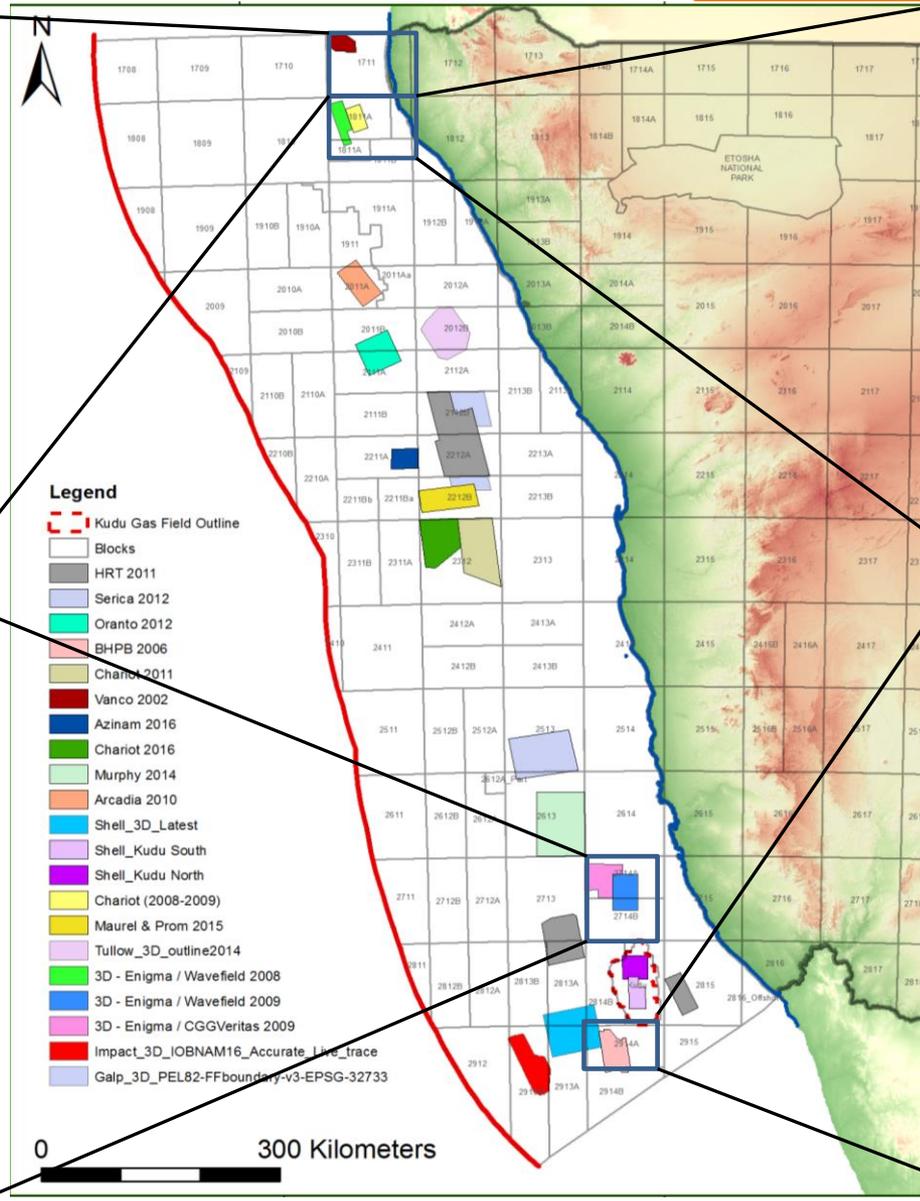
Licence Status

Water Depth	100-2,000m
Block	1711
Operator	NAMCOR negotiated
Location	Namibe Basin
Licence Award	Awaiting government award
Block Size	6,573 sq.km



Licence Status

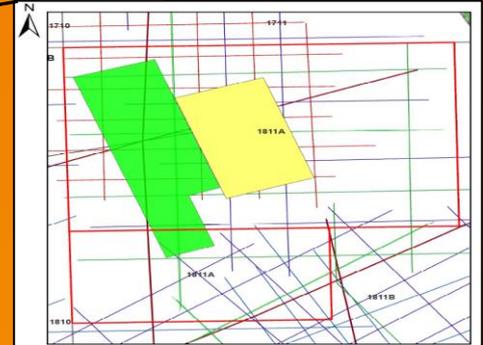
Water Depth	200-1,000m
Block	2714A&B
Operator	NAMCOR 67%
Partners	Quiver 33%
Location	Orange Basin
Block Size	10,945 sq.km



Legend

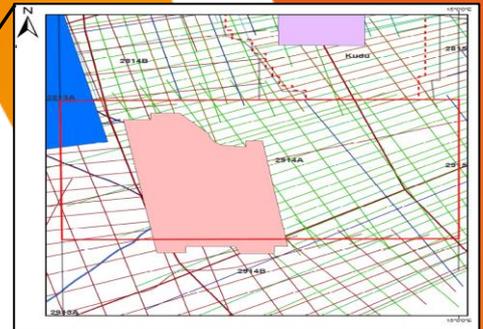
- - - Kudu Gas Field Outline
- Blocks
- HRT 2011
- Serica 2012
- Oranto 2012
- BHPB 2006
- Chariot 2011
- Vanco 2002
- Azinam 2016
- Chariot 2016
- Murphy 2014
- Arcadia 2010
- Shell_3D_Latest
- Shell_Kudu South
- Shell_Kudu North
- Chariot (2008-2009)
- Maurel & Prom 2015
- Tulloo_3D_outline2014
- 3D - Enigma / Wavefield 2008
- 3D - Enigma / Wavefield 2009
- 3D - Enigma / CGGVeritas 2009
- Impact_3D_IOBNAM16_Accurate Live_trace
- Galp_3D_PEL82-FFboundary.v3-EPG-32733

0 300 Kilometers



Licence Status

Water Depth	200-2,600m
Block	1811A
Operator	NAMCOR
Location	Namibe Basin
Licence Award	August 2017
Block Size	5,865 sq.km



Licence Status

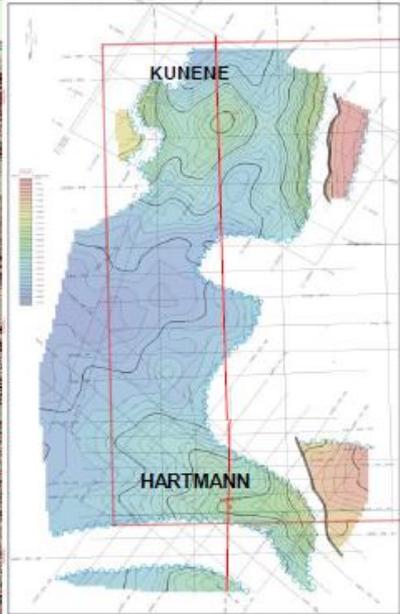
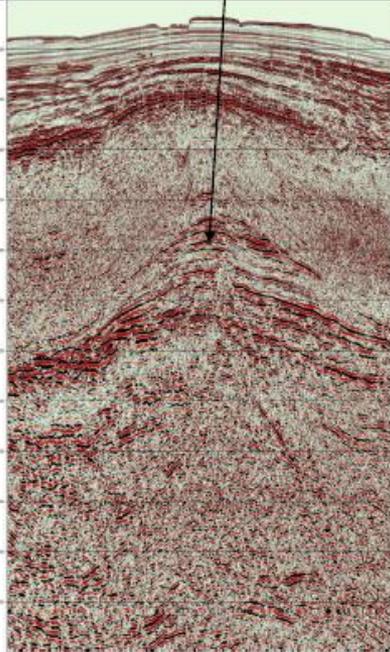
Water Depth	200-1000m
Block	2914A
Operator	Rhino Resources 55%
Partners	NAMCOR 30% (10% Carried and 20% WI) and Korres 15%
Location	Orange Basin
Block Size	5,000 sq.km

BLOCK 1711



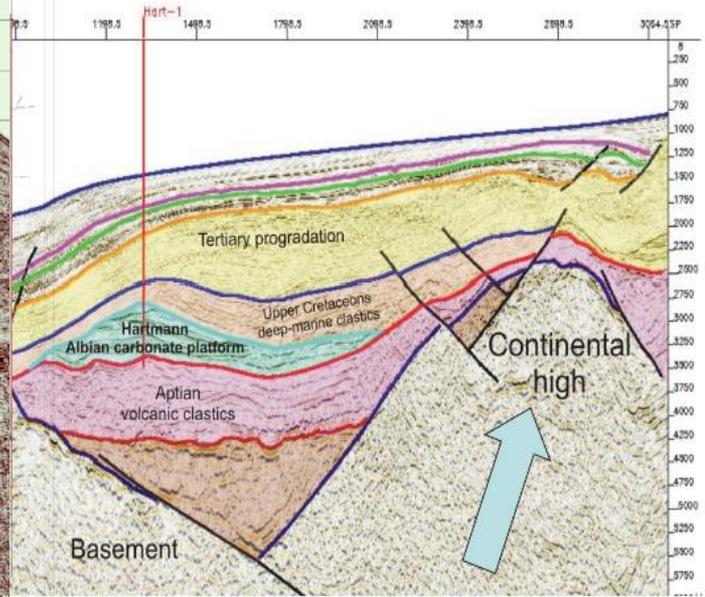
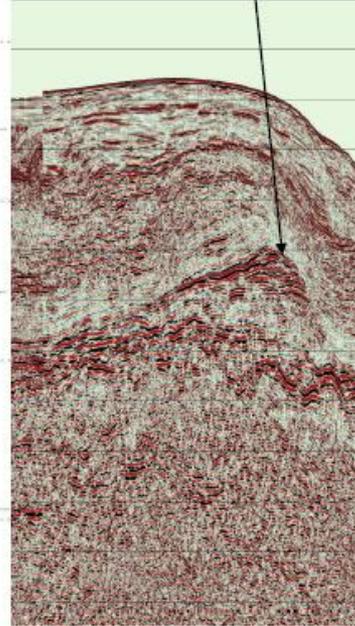
Kunene-Hartmann - comparison

KUNENE



Structural Chart Reflecting Horizon. Top Albian

HARTMANN

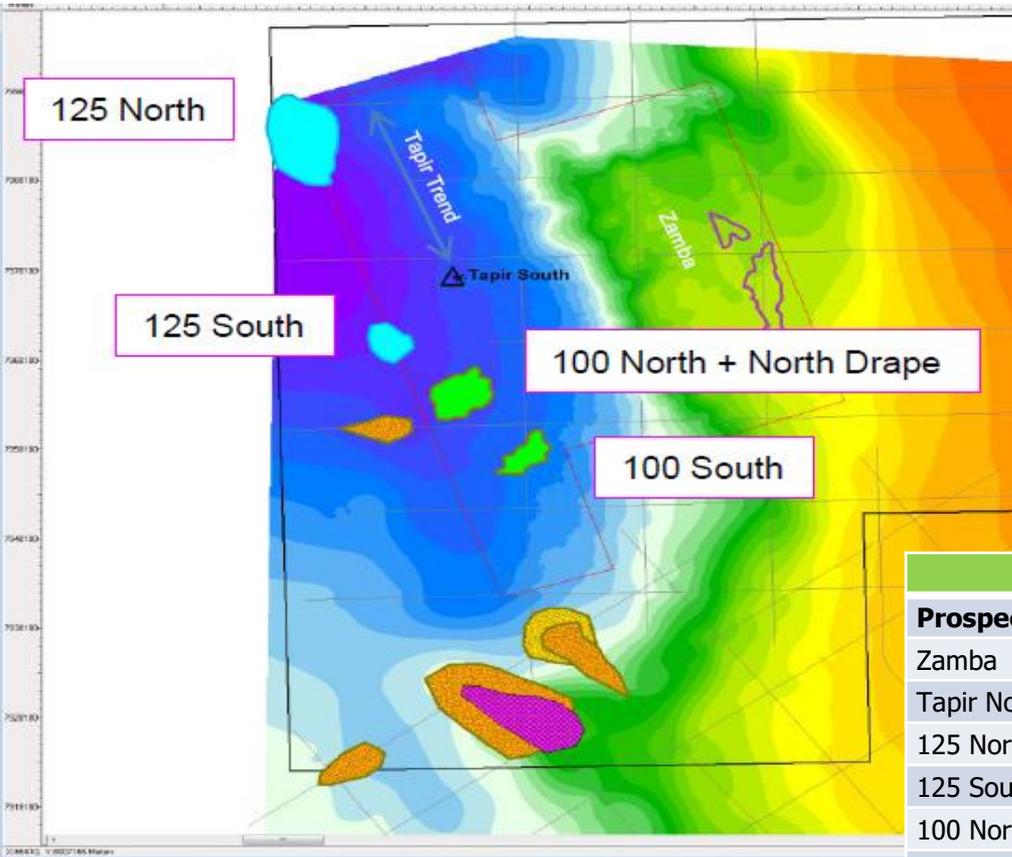


After Sintez, 2008

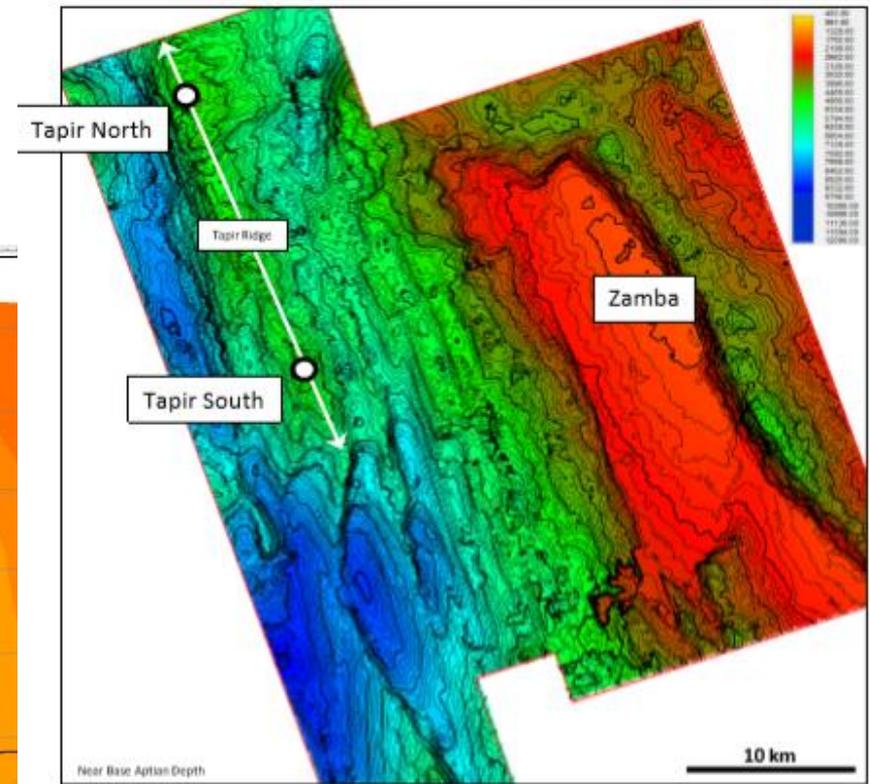
Potential Targets

Prospect	Reservoir	Lead Age
Kunene	Cretaceous Carbonates	Albian
Hartmann	Cretaceous Carbonates	Albian

BLOCK 1811A

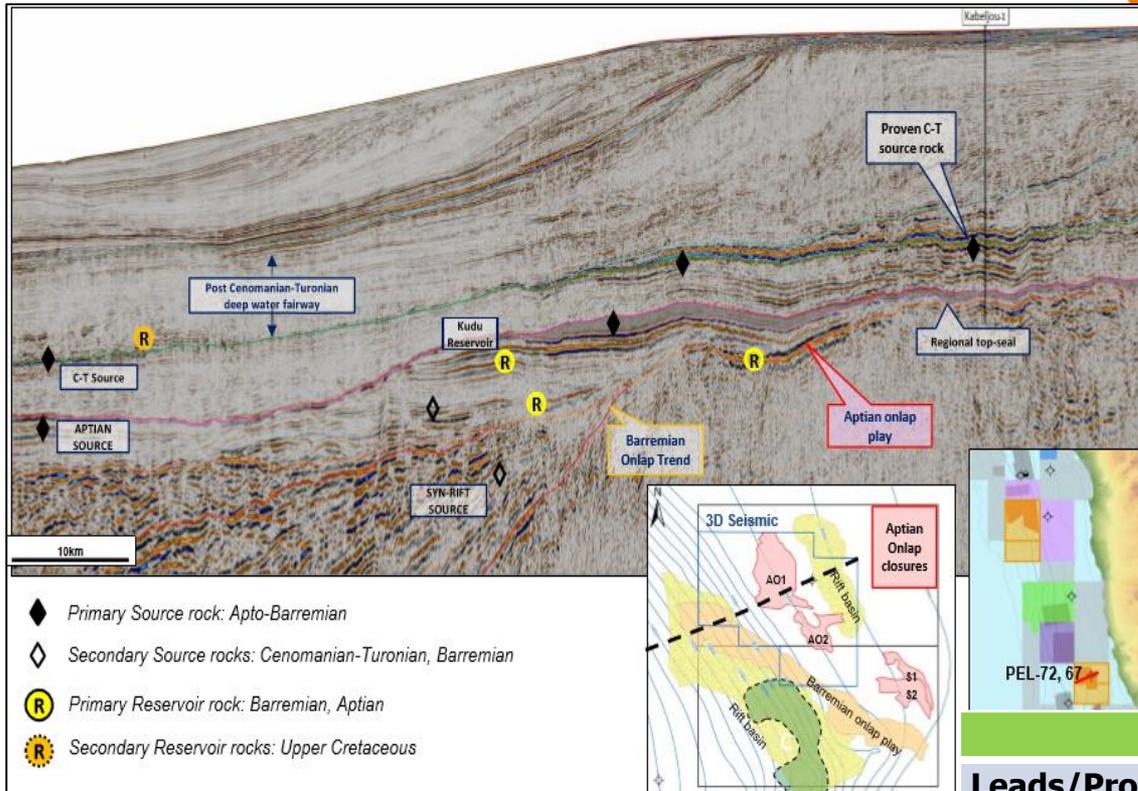


Prospect and leads Polygons (After Chariot, 2013)

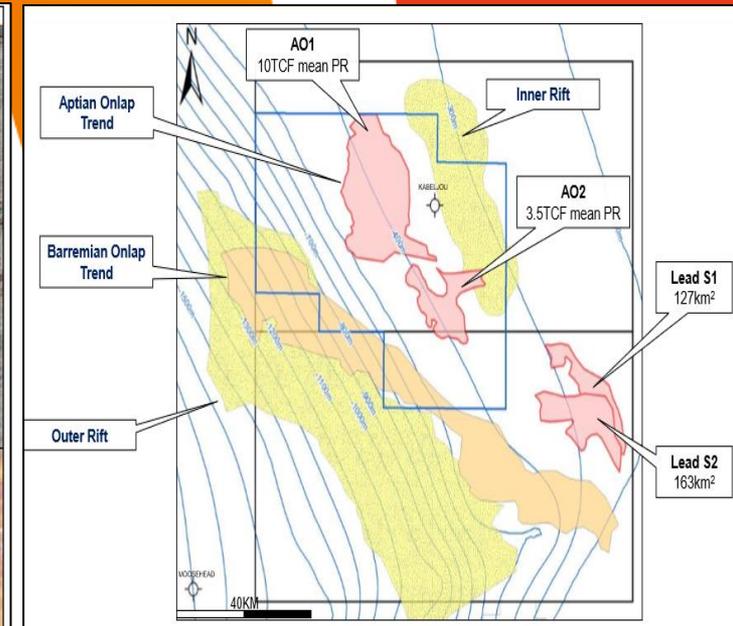


Potential Targets		
Prospect	Reservoir	Lead Age
Zamba	Cretaceous Carbonates	Albian
Tapir North	Cretaceous Carbonates	Albian
125 North	Cretaceous Carbonates	Aptian
125 South	Cretaceous Carbonates	Aptian
100 North + North Drape	Cretaceous Carbonates	Albian
100 South	Cretaceous Carbonates	Albian
Potential Clastic basin floor fans + channels	Cretaceous Clastic(channels +Basin floor fan)	Late Cretaceous

BLOCK 2714A&B



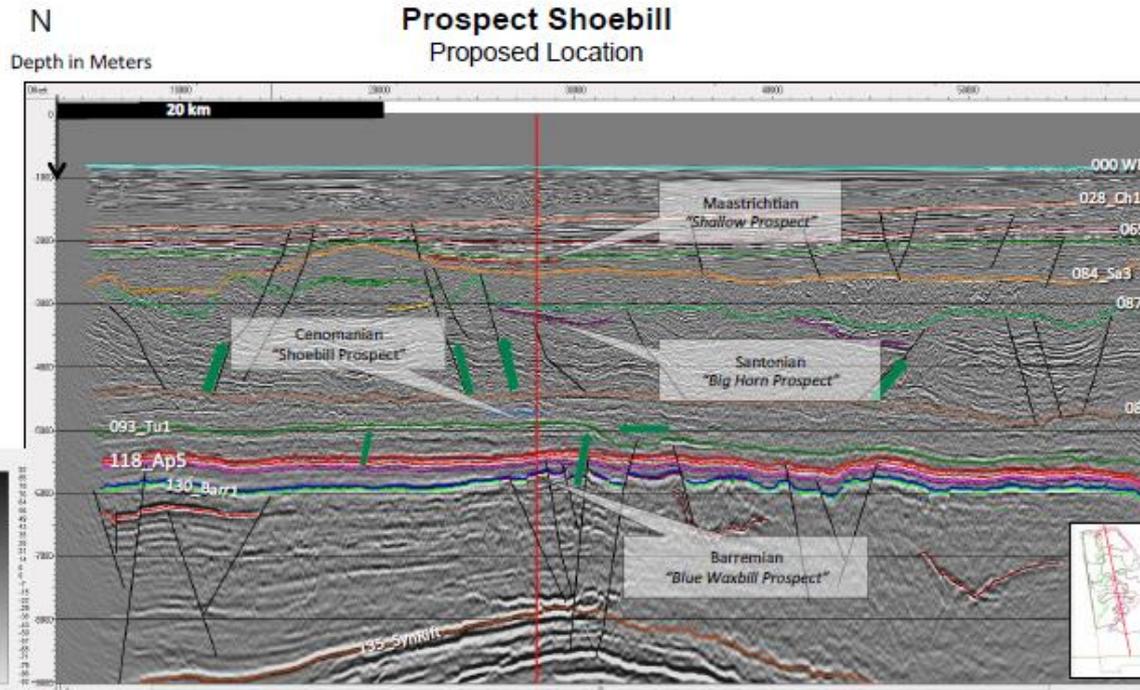
(After Chariot, 2017)



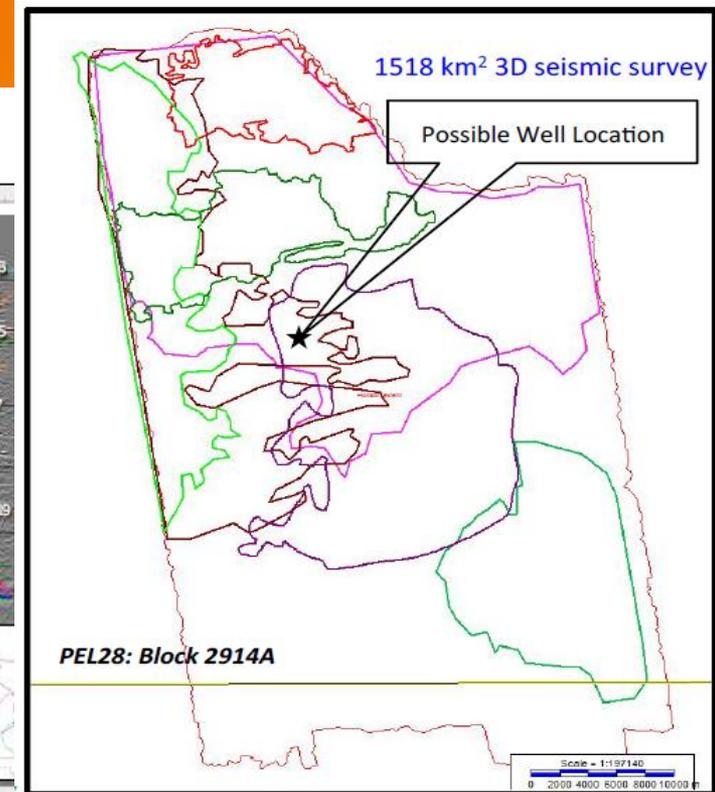
Potential Targets

Leads/Prospects	Reservoir	Lead Age
Inner Rift	Lower Cretaceous sandstone	Barremian or Older (Lower Cretaceous)
Barremian Onlap Play	Lower Cretaceous sandstone	Barremian
Aptian Onlap Play	Cretaceous sandstone	Aptian

BLOCK 2914A



Prospect and leads Polygons (After HRT, 2012)



Potential Targets

Prospect	Reservoir	Lead Age
Shoebill	Cretaceous Turbidites	Cenomanian
Blue Waxbill	Cretaceous Turbidites	Barremian
Scops Owl	Cretaceous Turbidites	Aptian
Guineafowl	Cretaceous Turbidites	Barremian

Ongoing projects

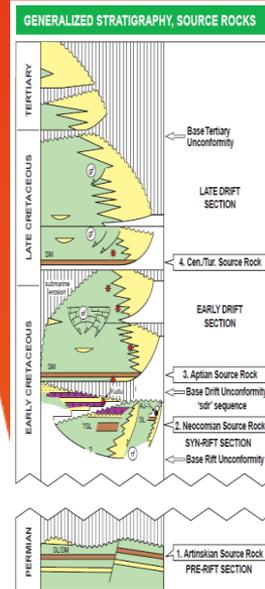
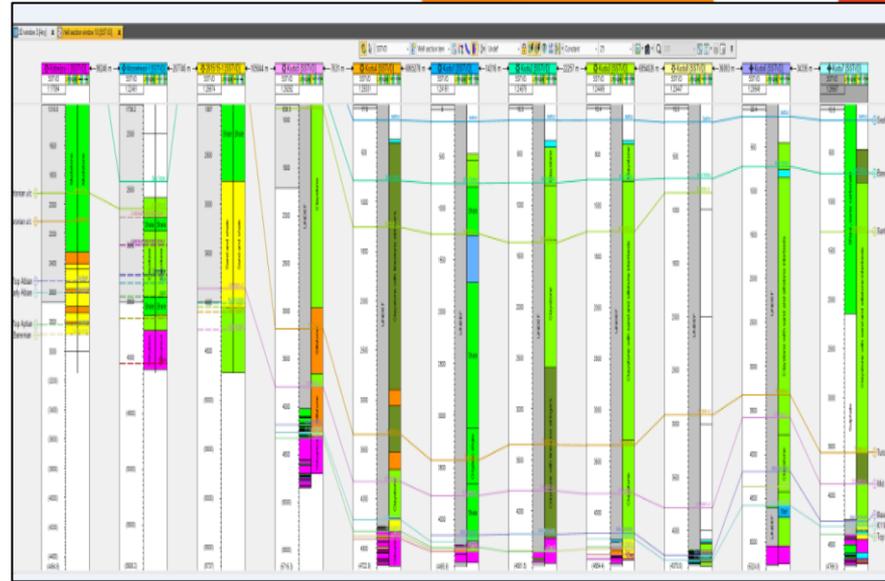
Prospect Inventory Project

- ✓ Updated lithological chart of Orange Basin
- ✓ Update regional tectonostratigraphic interpretation of Orange basin
- ✓ Play definition and play concepts
- ✓ Regional Stratigraphy update

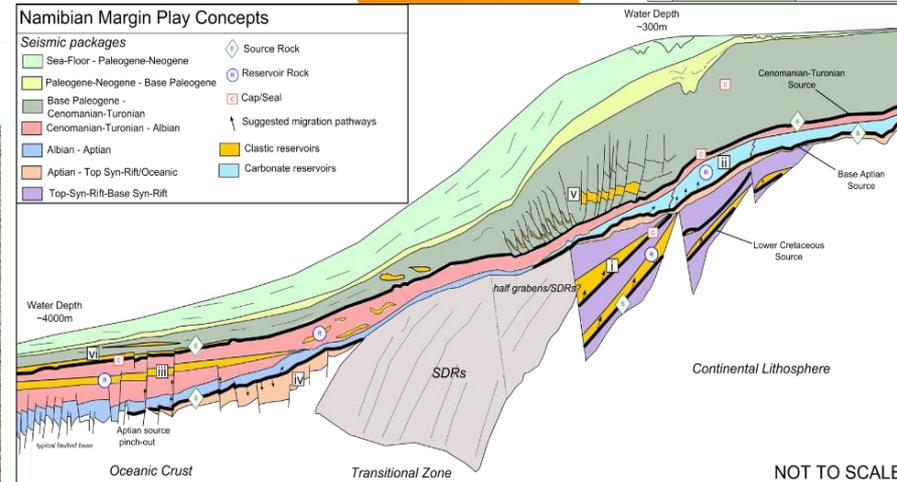
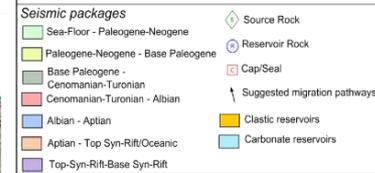
Core logging analysis

3D Multi-client Survey

Syn-rift Play Project



Namibian Margin Play Concepts



(After PGS, 2014)

Conclusions

- 🌟 Number 1 investment destination in Africa
- 🌟 Favourable fiscal regime/incentives in Africa
- 🌟 Attract major IOC to explore offshore Namibia
- 🌟 Excellent geodatabase available to make sound investment decisions and improve geological understanding
- 🌟 Opportunity to access underexplored high-potential frontier basin with minimal commitments
- 🌟 Proven offshore petroleum system from drilled wells
- 🌟 NAMCOR repositioning its exploration strategy by acquiring its own assets
- 🌟 Significant equity and operatorship available in 2 blocks
- 🌟 Farm-out opportunities are available

Thank you

**For more information visit NAMCOR's booth
16**

or

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NAMCOR

EXPLORING & FUELLING NAMIBIA