

# 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



## Taxation on oil production


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

 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)

# 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**

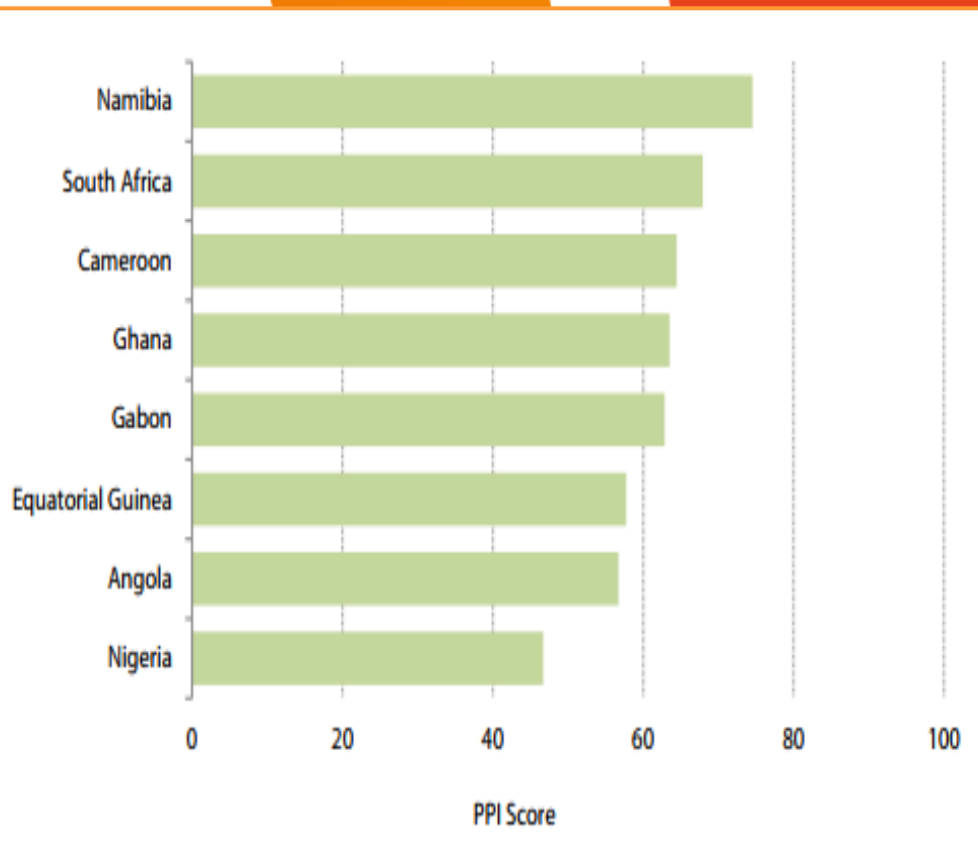
**Commercial  
and  
Marketing**

# 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 &amp; 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



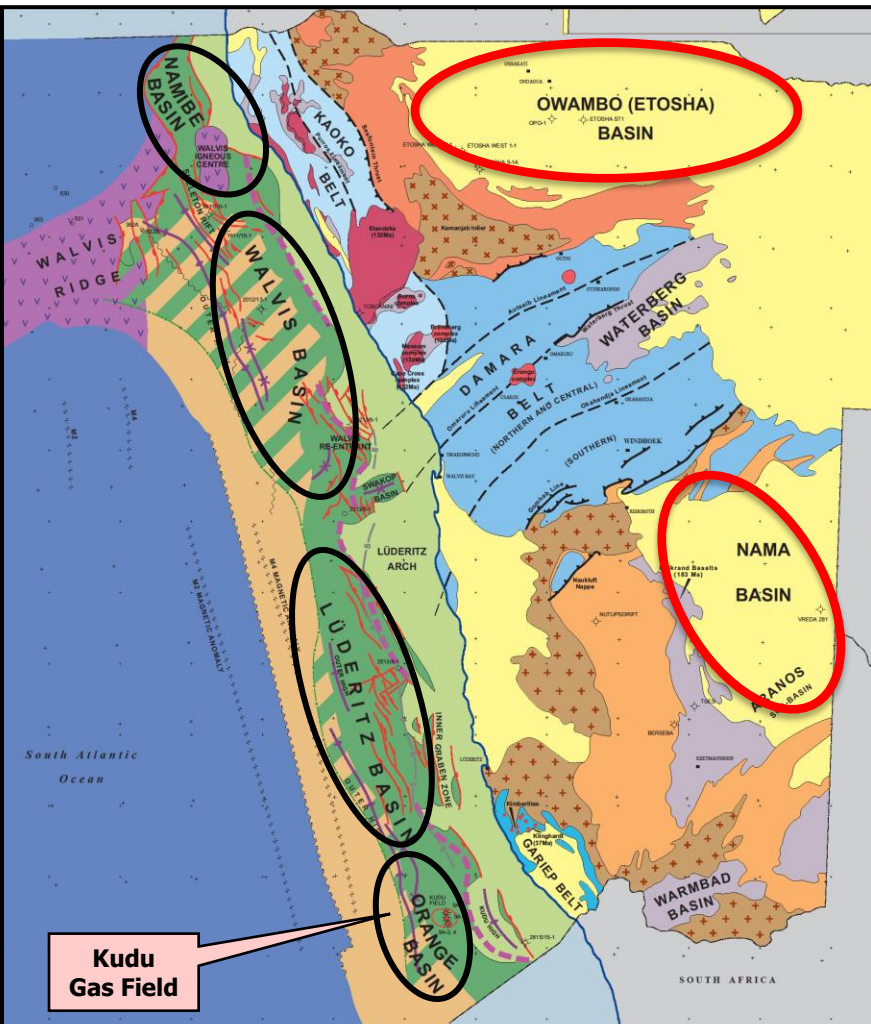
4 offshore basins



2 onshore Basins

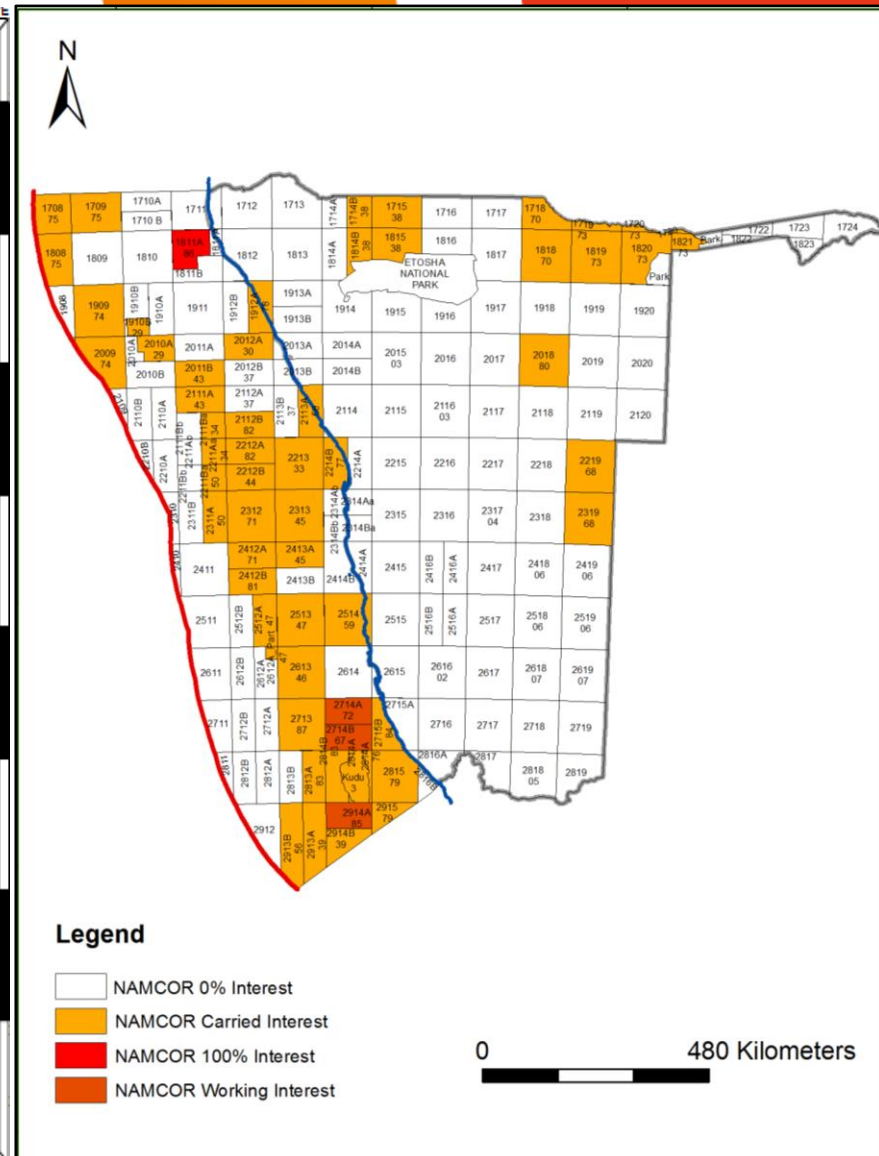
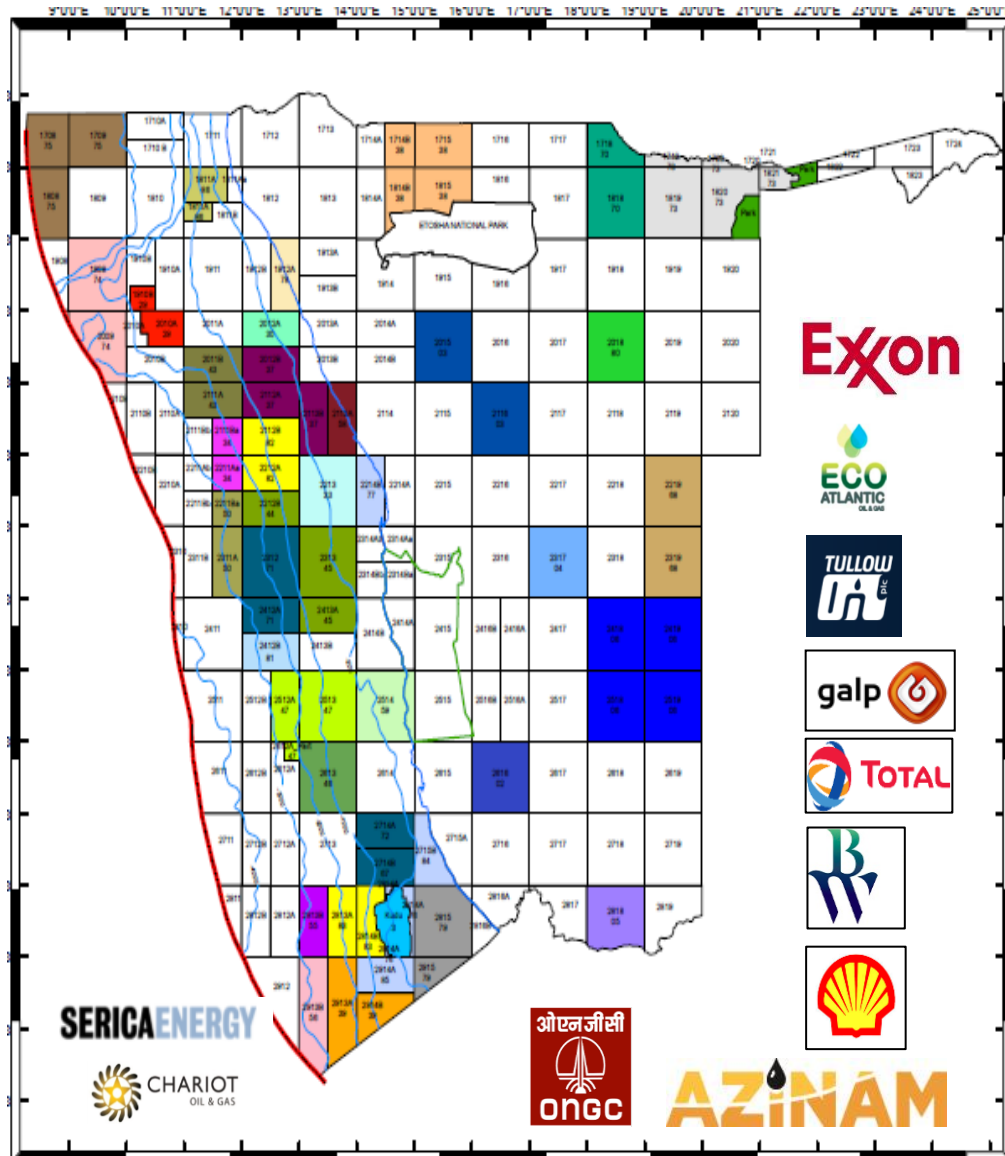


**One offshore gas discovery**

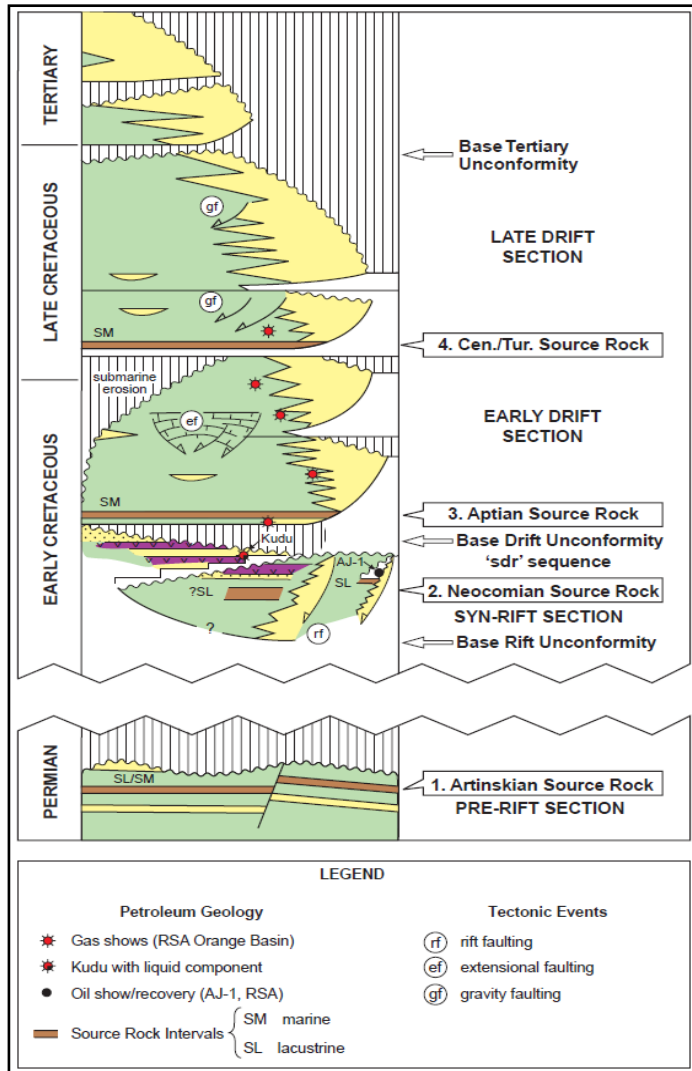




# Exploration Licenses



# Potential Source Rocks



## Turonian-Cenomanian

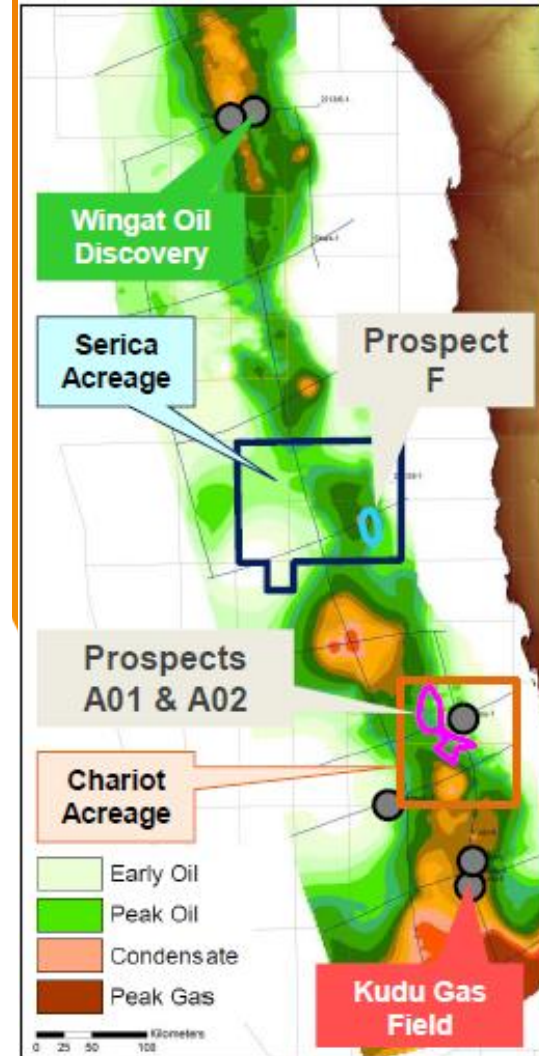
- Proven in Walvis and Orange Basins
- Marine, oil-prone
- Early to late mature
- TOCs up to 10%;

## 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

## Namibian Margin Play Concepts

### Seismic packages

Sea-Floor - Paleogene-Neogene

Paleogene-Neogene - Base Paleogene


Base Paleogene -  
Cenomanian-Turonian

Cenomanian-Turonian - Albian

Albian - Aptian

Aptian - Top Syn-Rift/Oceanic

Top-Syn-Rift-Base Syn-Rift


 Source Rock

 Reservoir Rock

 Cap/Seal

 Suggested migration pathways

 Clastic reservoirs

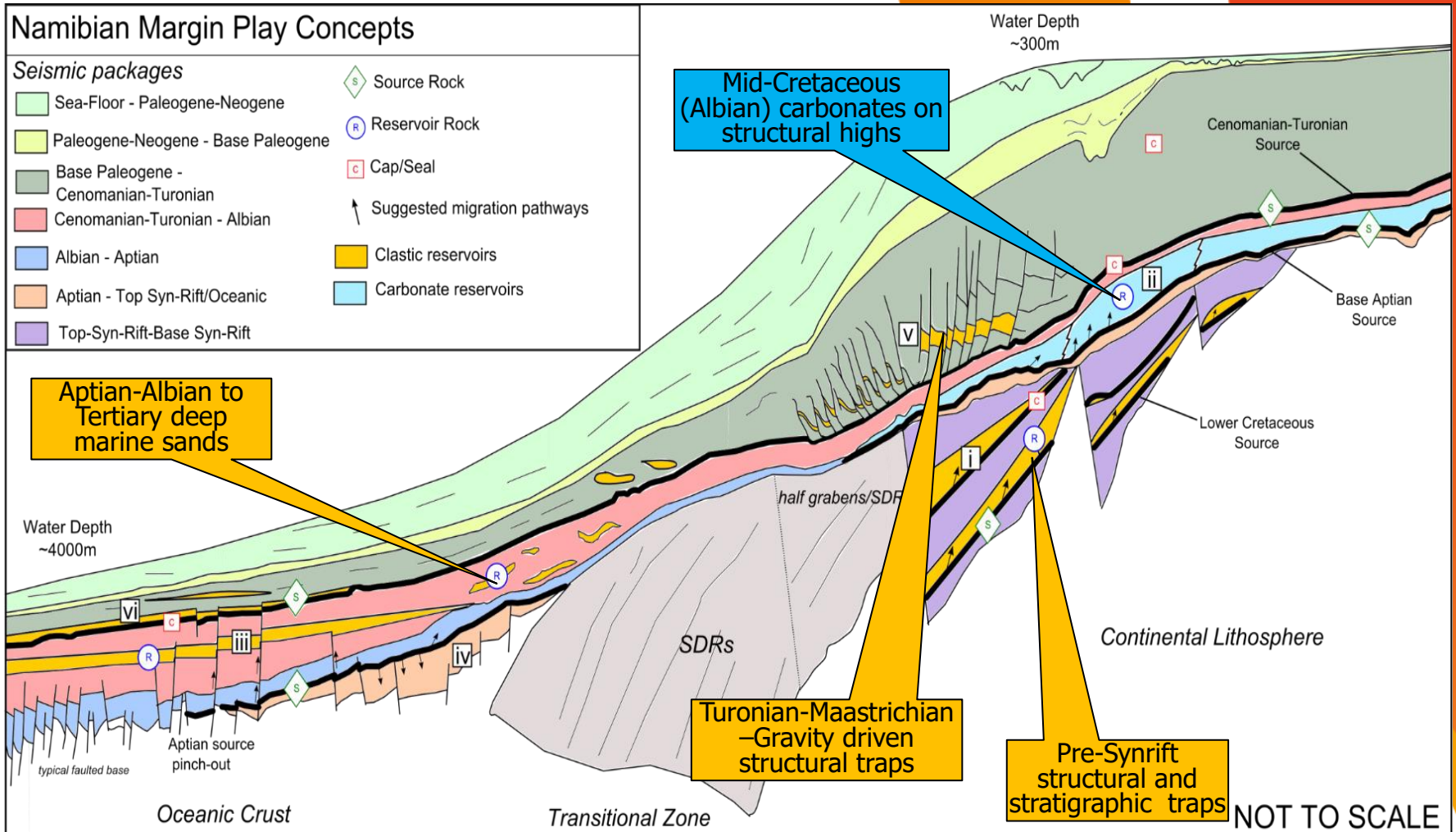
 Carbonate reservoirs

Aptian-Albian to  
Tertiary deep  
marine sands

Mid-Cretaceous  
(Albian) carbonates on  
structural highs

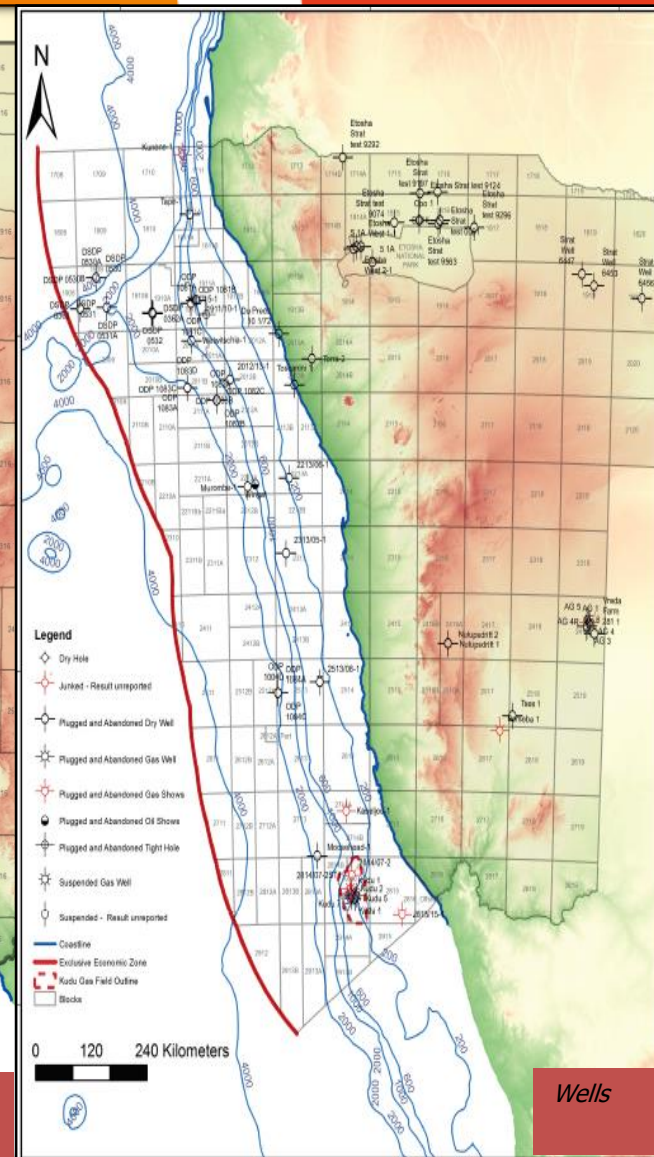
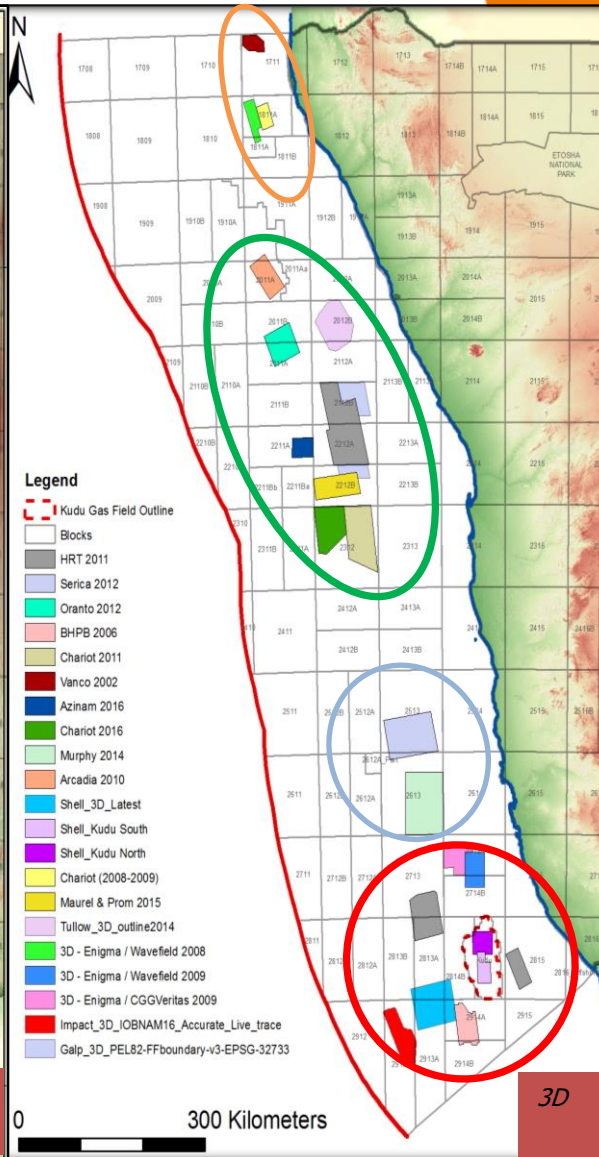
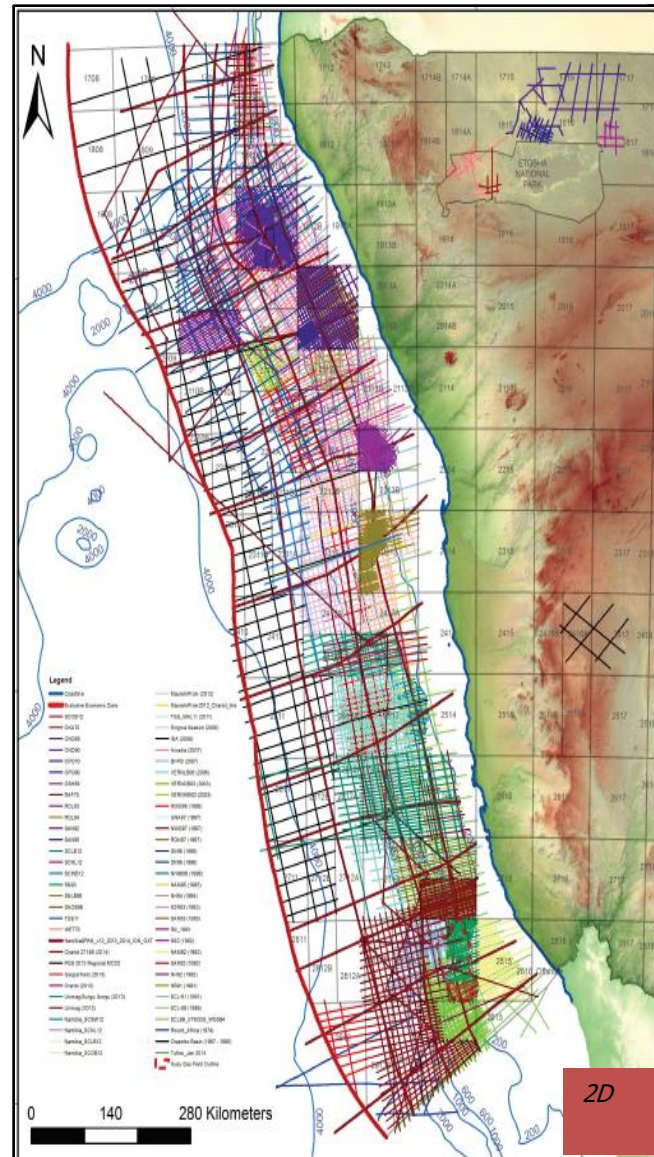
Turonian-Maastrichtian  
-Gravity driven  
structural traps

Pre-Synrift  
structural and  
stratigraphic traps

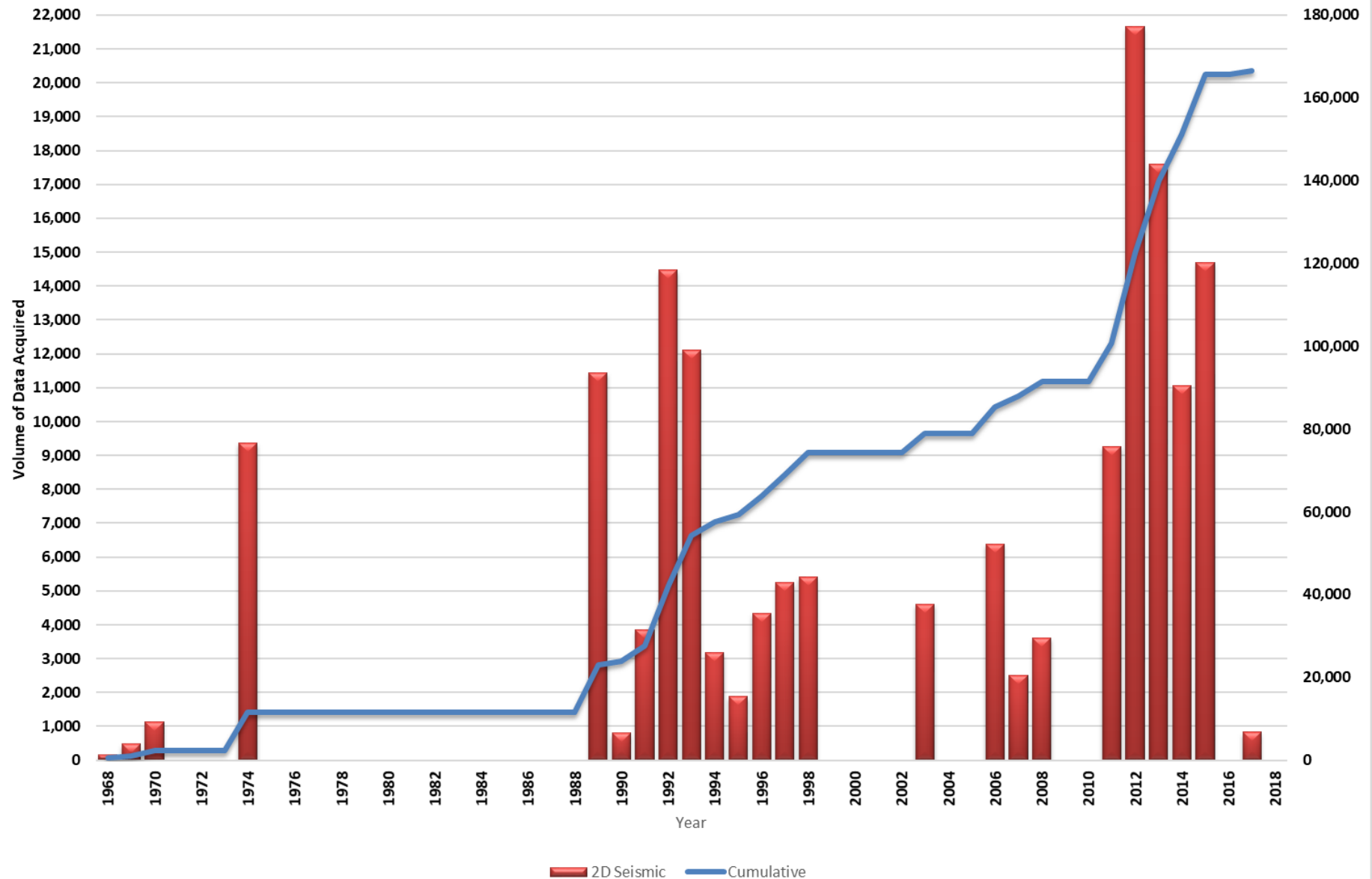


(After PGS, 2014)

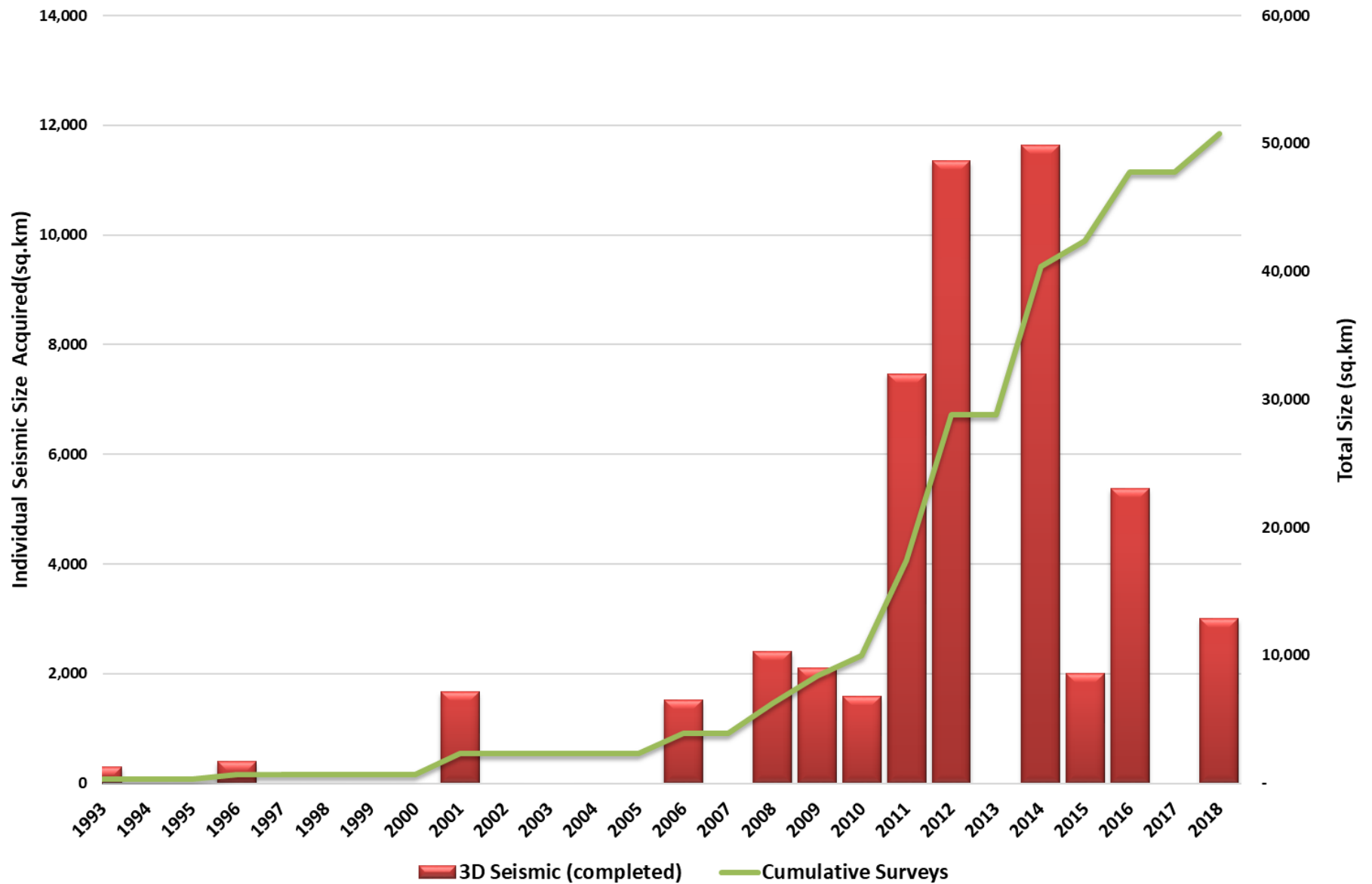
# Exploration Databases



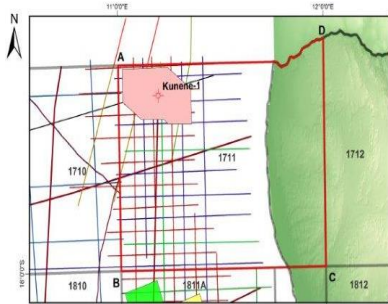
# Seismic Databases





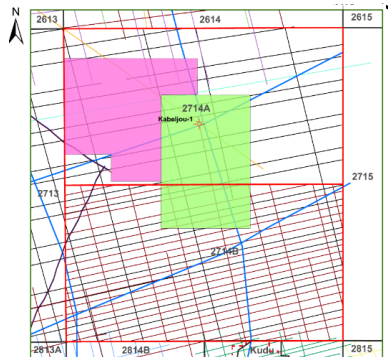


# Exploration Opportunities



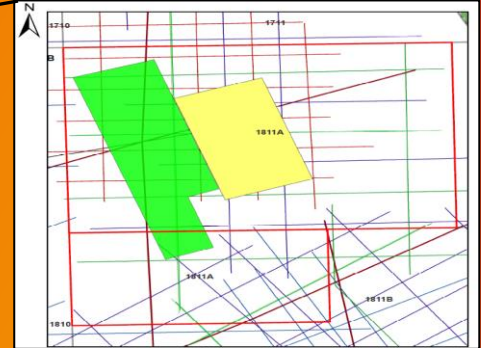
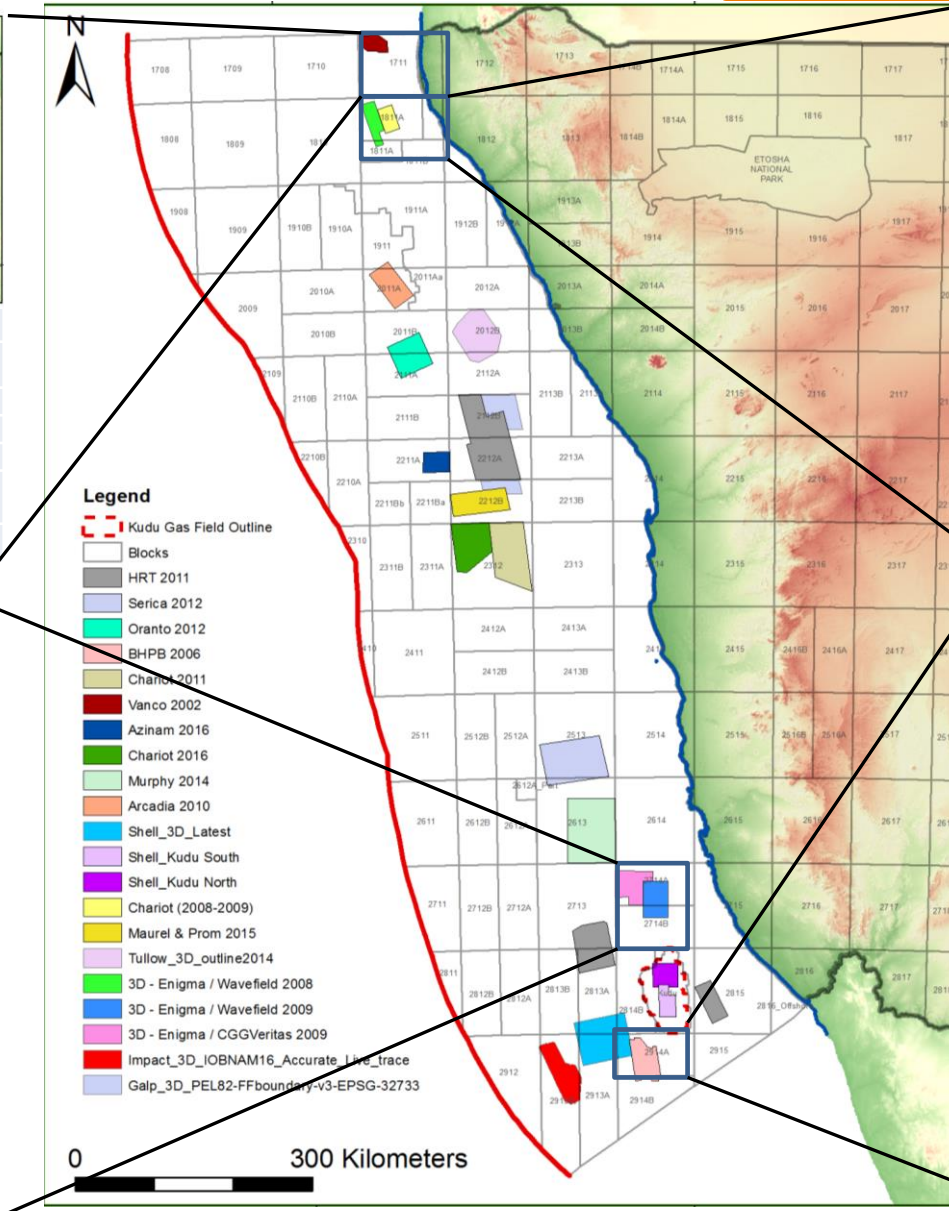
## Licence Status

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



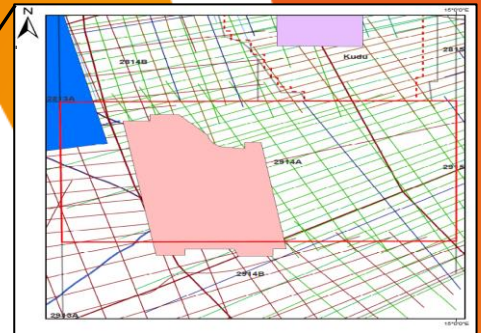
## Licence Status

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



## 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

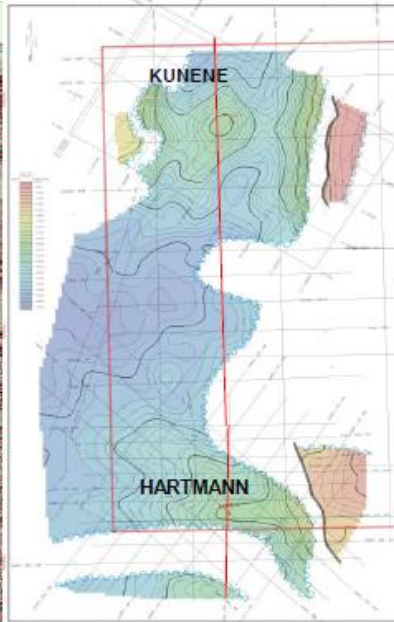
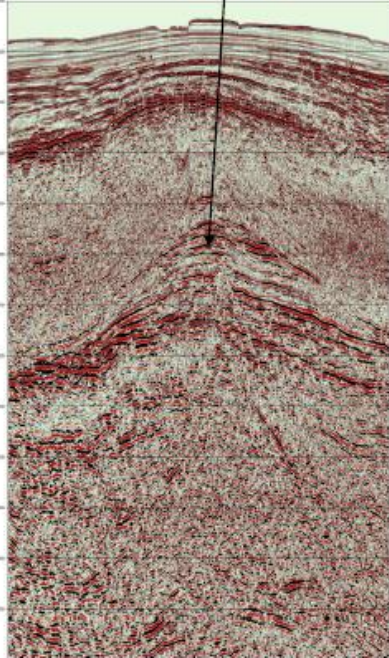


# BLOCK 1711



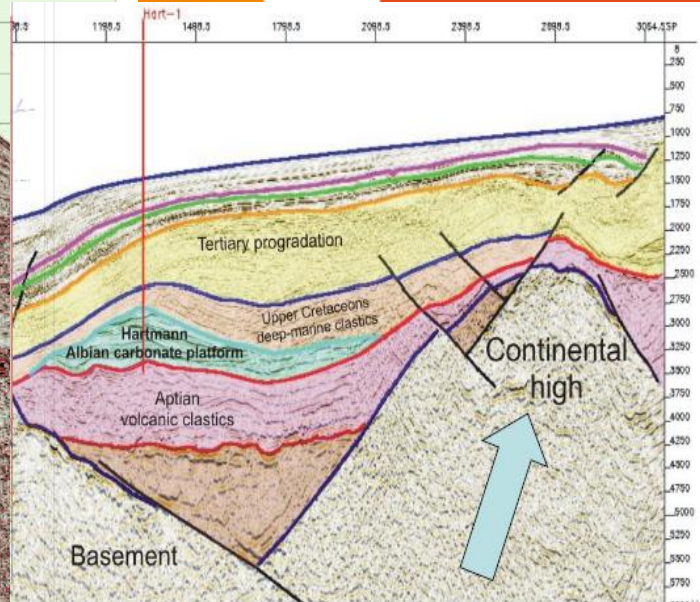
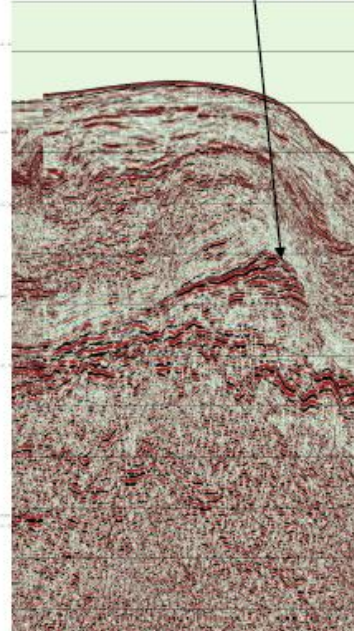
## Kunene-Hartmann - comparison

KUNENE



Structural Chart Reflecting Horizon. Top Albian

HARTMANN



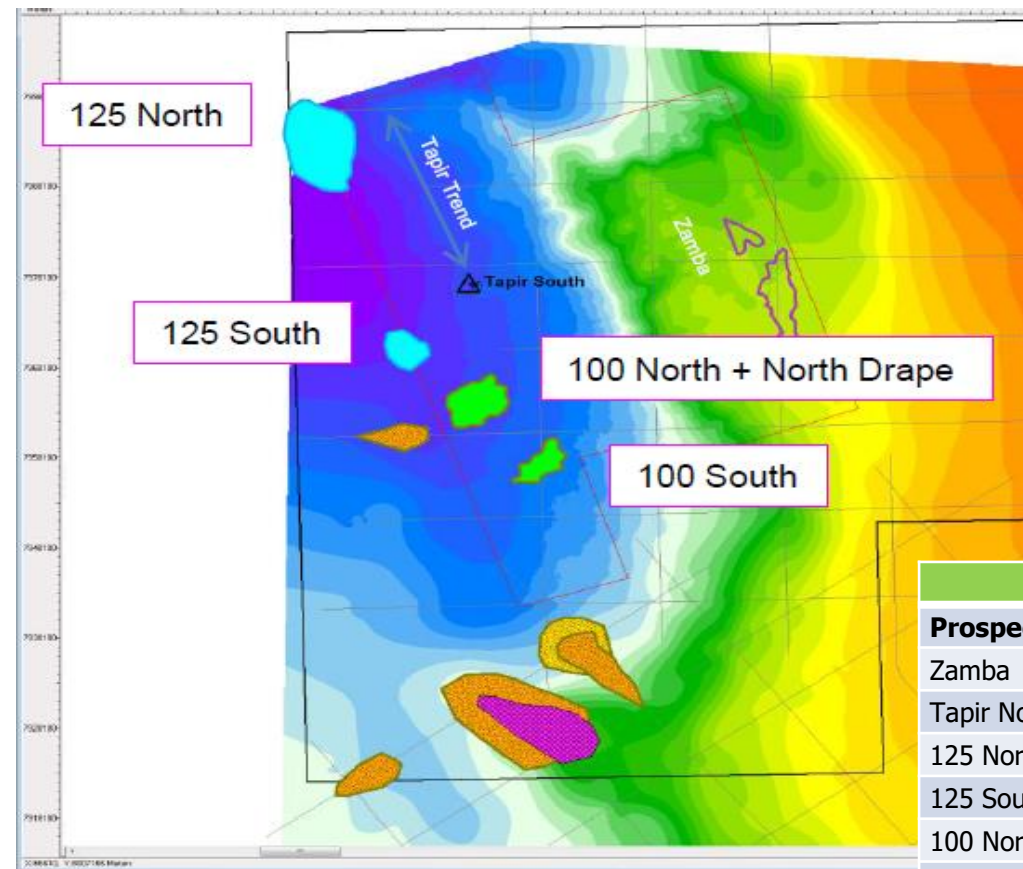
After Sintez, 2008

### Potential Targets

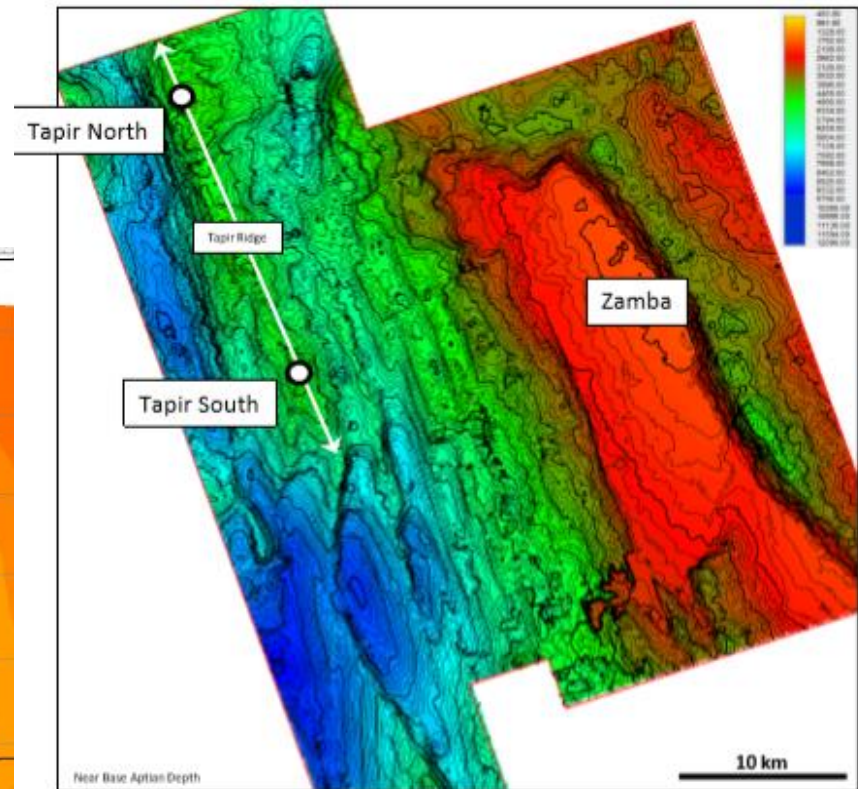
Prospect	Reservoir	Lead Age
Kunene	Cretaceous Carbonates	Albian
Hartmann	Cretaceous Carbonates	Albian



# BLOCK 1811A

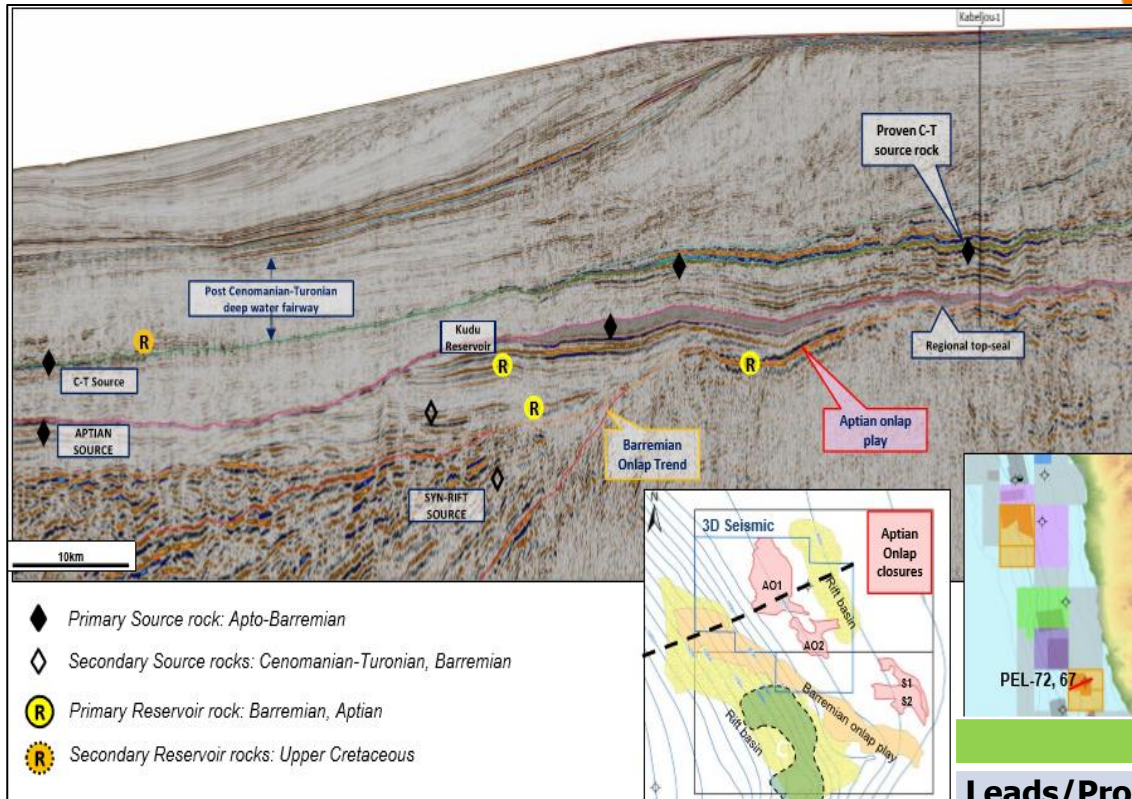


*Prospect and leads Polygons (After Chariot, 2013)*

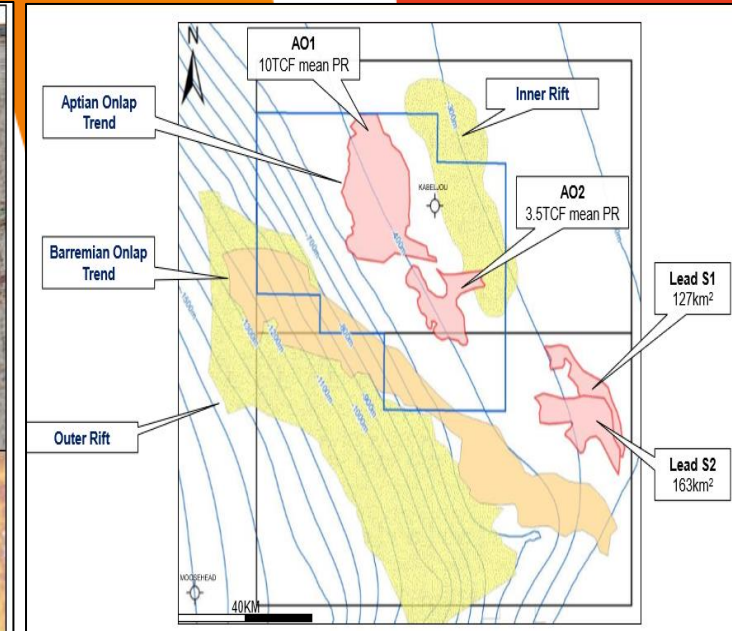


Potential Targets		
Prospect	Reservoir	Lead Age
Zamba	Cretaceous Carbonates	Albian
Tapir North	Cretaceous Carbonates	Albian
125 North	Cretaceous Carbonates	Aptian
125 South	Cretaceous Carbonates	Aptian
100 North + North Drape	Cretaceous Carbonates	Albian
100 South	Cretaceous Carbonates	Albian
Potential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

# BLOCK 2714A&B



(After Chariot, 2017)

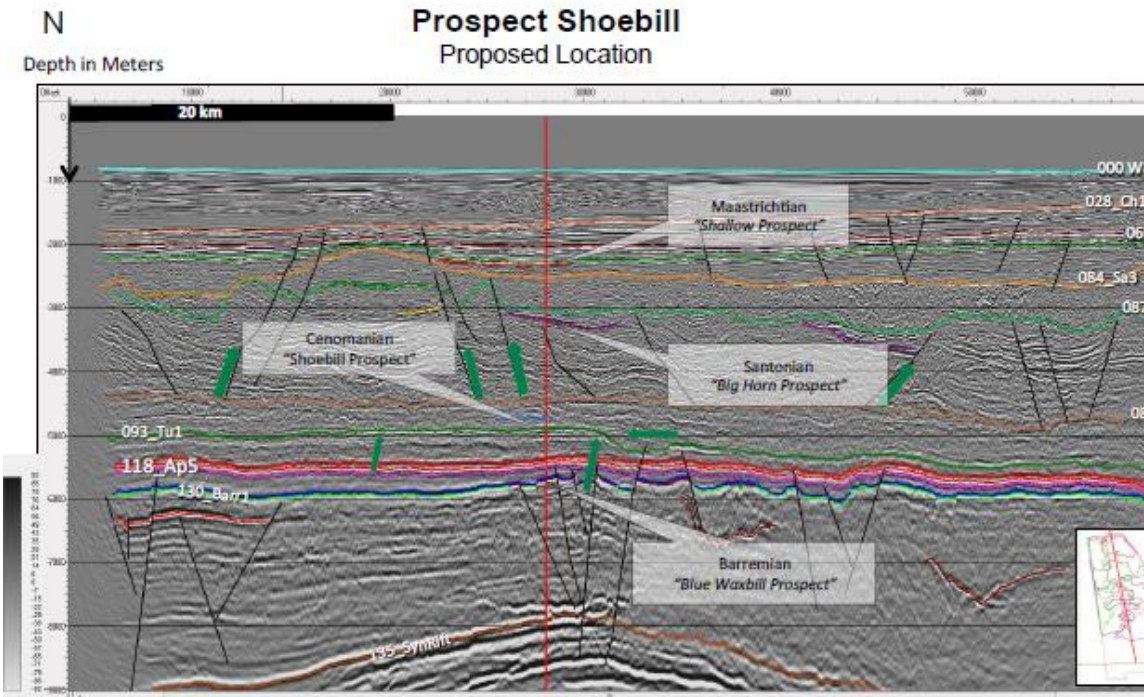


## Potential Targets

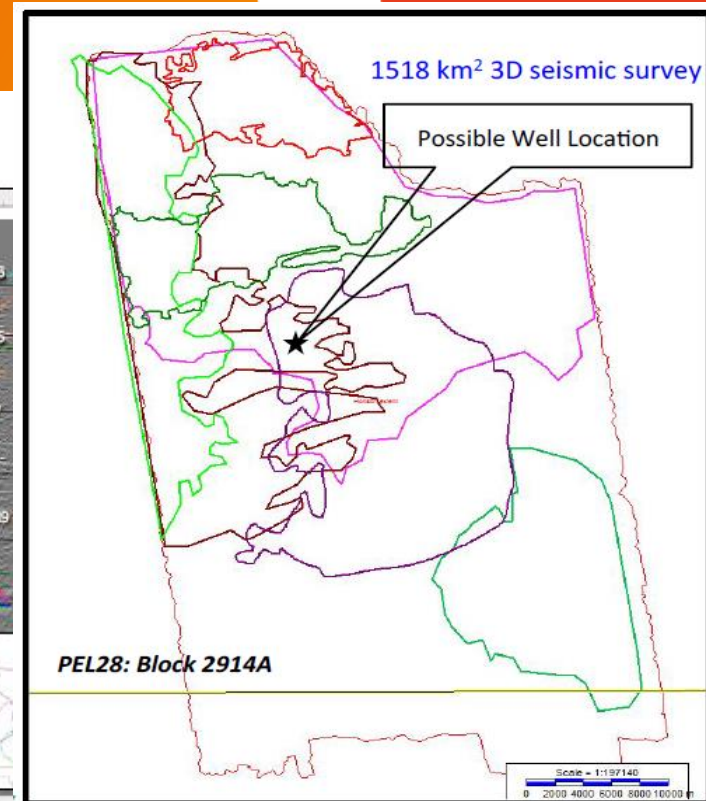
Leads/Prospects	Reservoir	Lead Age
Inner Rift	Lower Cretaceous sandstone	Barremian or Older (Lower Cretaceous)
Barremian Onlap Play	Lower Cretaceous sandstone	Barremian
Aptian Onlap Play	Cretaceous sandstone	Aptian



# 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

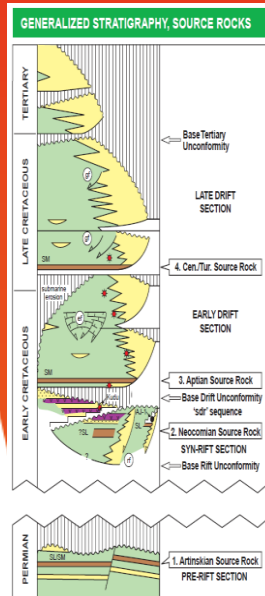
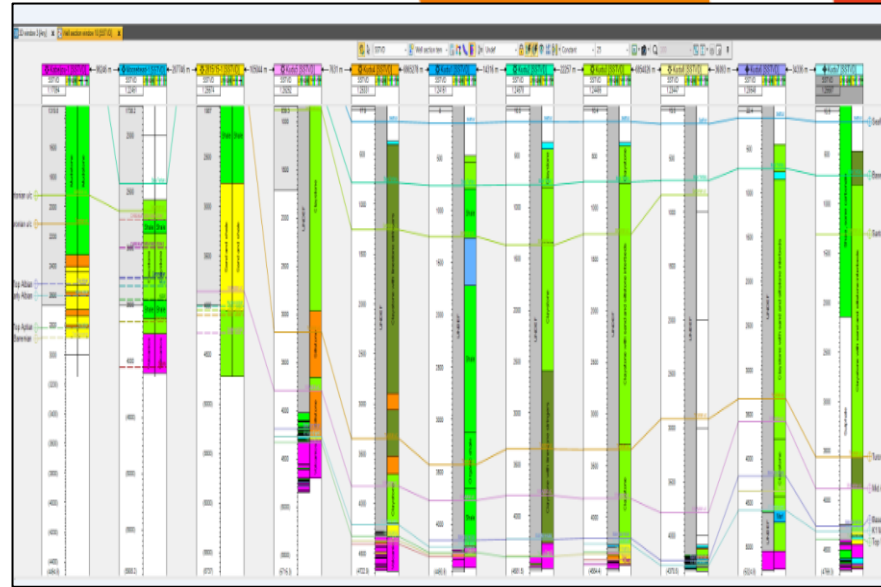
## Prospect Inventory Project

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

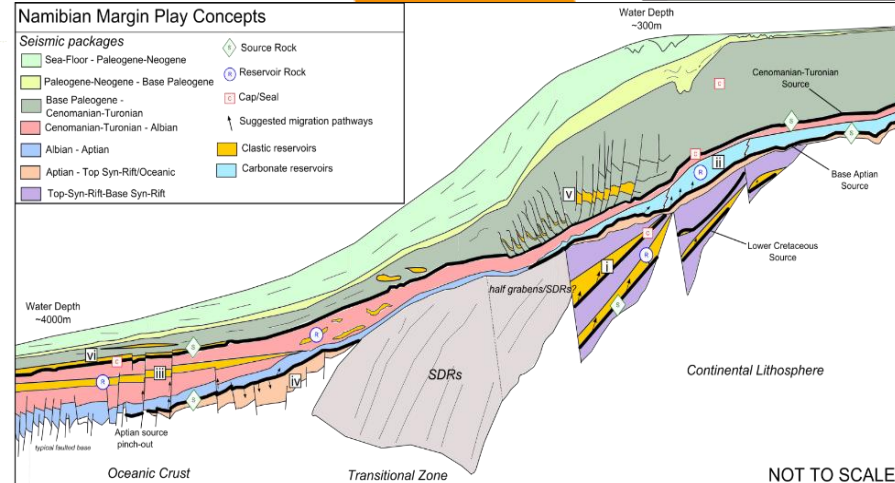
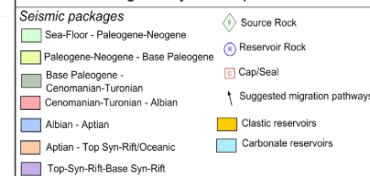
## Core logging analysis

## 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