

PETROLEUM EXPLORATION AND PRODUCTION SOUTH AFRICA



AN OVERVIEW OF ONSHORE AND OFFSHORE E&P ACTIVITIES AND OPPORTUNITIES

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INTERNATIONAL MEETING FOR APPLIED GEOSCIENCE & ENERGY 28 – 31 AUGUST 2023
GLOBAL ENERGY OPPORTUNITIES PAVILION

Presentation Outline



- Who is Petroleum Agency South Africa?
- Offshore and Onshore E&P Status
- Offshore and Onshore Activities and Opportunities
- Legislative Framework Overview



Who is Petroleum Agency South Africa ? ...



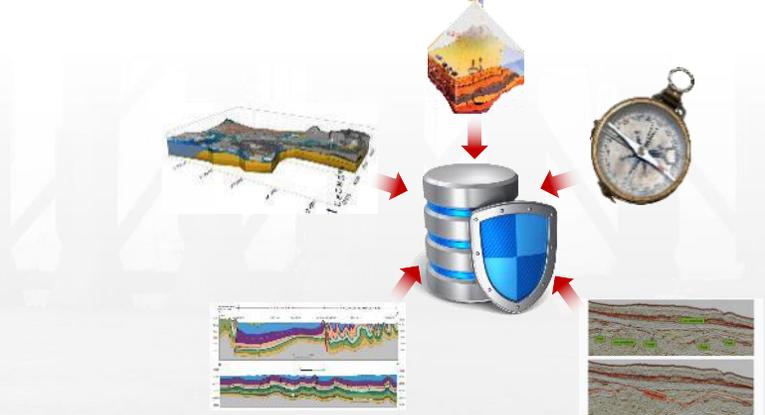
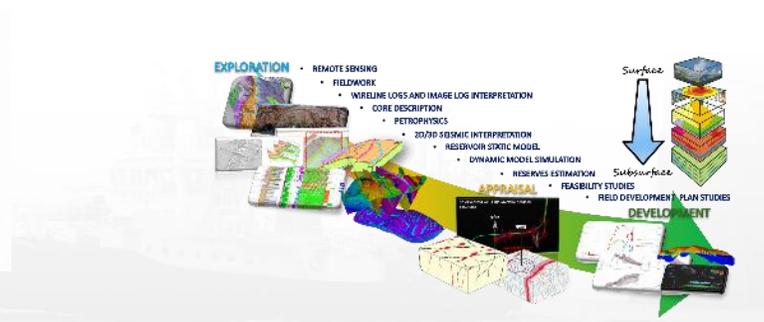
NATIONAL OIL AND GAS REGULATORY AGENCY OF SOUTH AFRICA

Regulations and Licensing

Petroleum Resource Management

Information Management

Communication



Who is Petroleum Agency South Africa ? ...



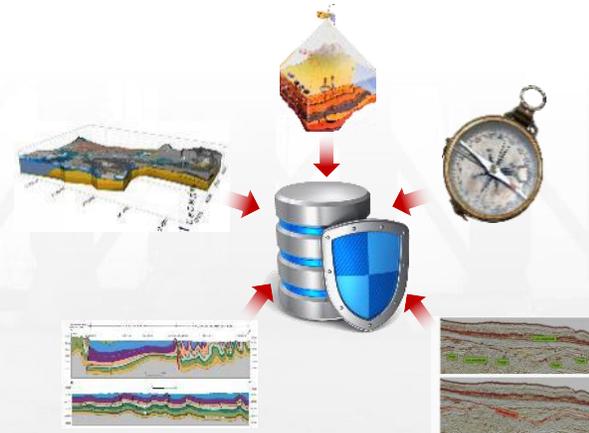
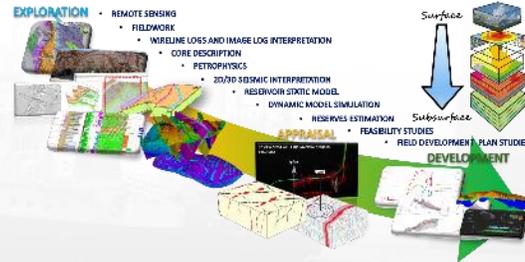
NATIONAL OIL AND GAS REGULATORY AGENCY OF SOUTH AFRICA

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Our Mission

PROMOTE, FACILITATE AND REGULATE EXPLORATION AND SUSTAINABLE DEVELOPMENT OF OIL AND GAS

Who is Petroleum Agency South Africa ? ...



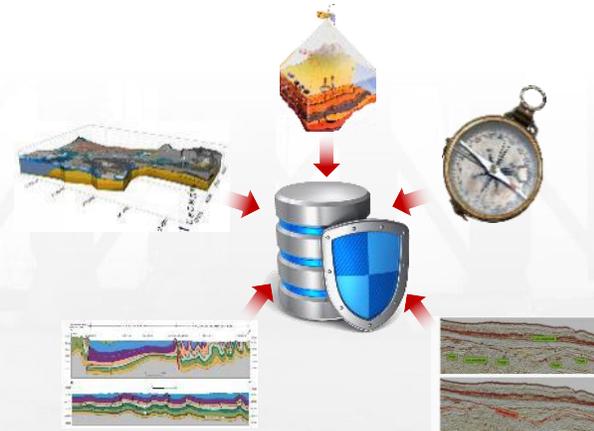
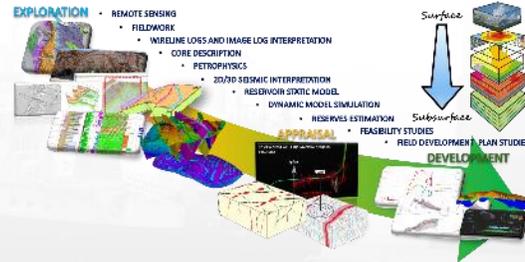
NATIONAL OIL AND GAS REGULATORY AGENCY OF SOUTH AFRICA

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Our Vision

A DIVERSE UPSTREAM INDUSTRY CONTRIBUTING TO ENERGY SECURITY THROUGH SUSTAINABLE GROWTH IN EXPLORATION AND DEVELOPMENT OF OIL AND GAS



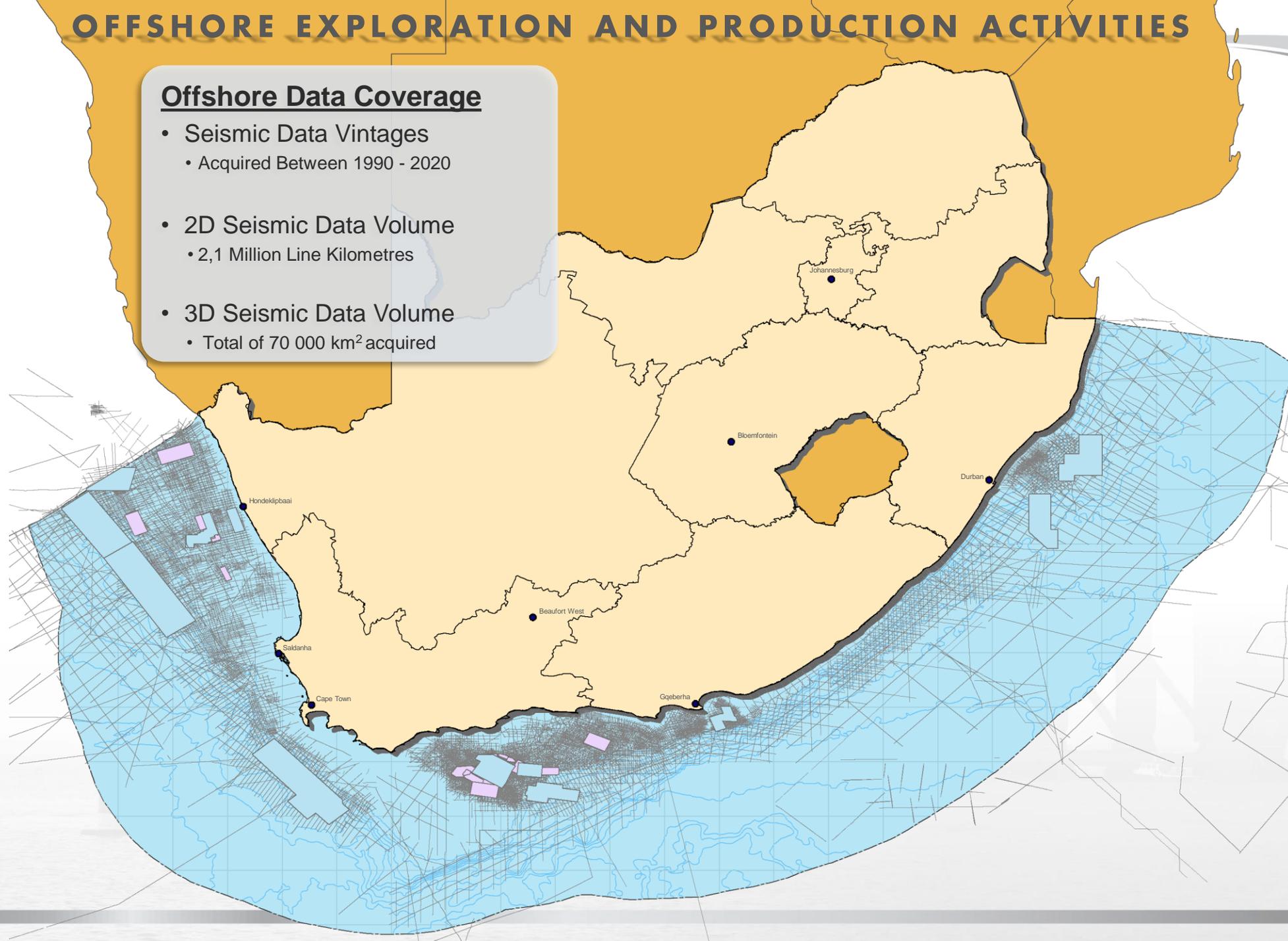
Offshore E&P Status

- ~1 Million km² in extent
- 4500 m Water Depths
- West Coast
 - Orange Basin
- South Coast
 - Greater Outeniqua Basin
- East Coast
 - Zululand Basin
 - Durban Basin



Offshore Data Coverage

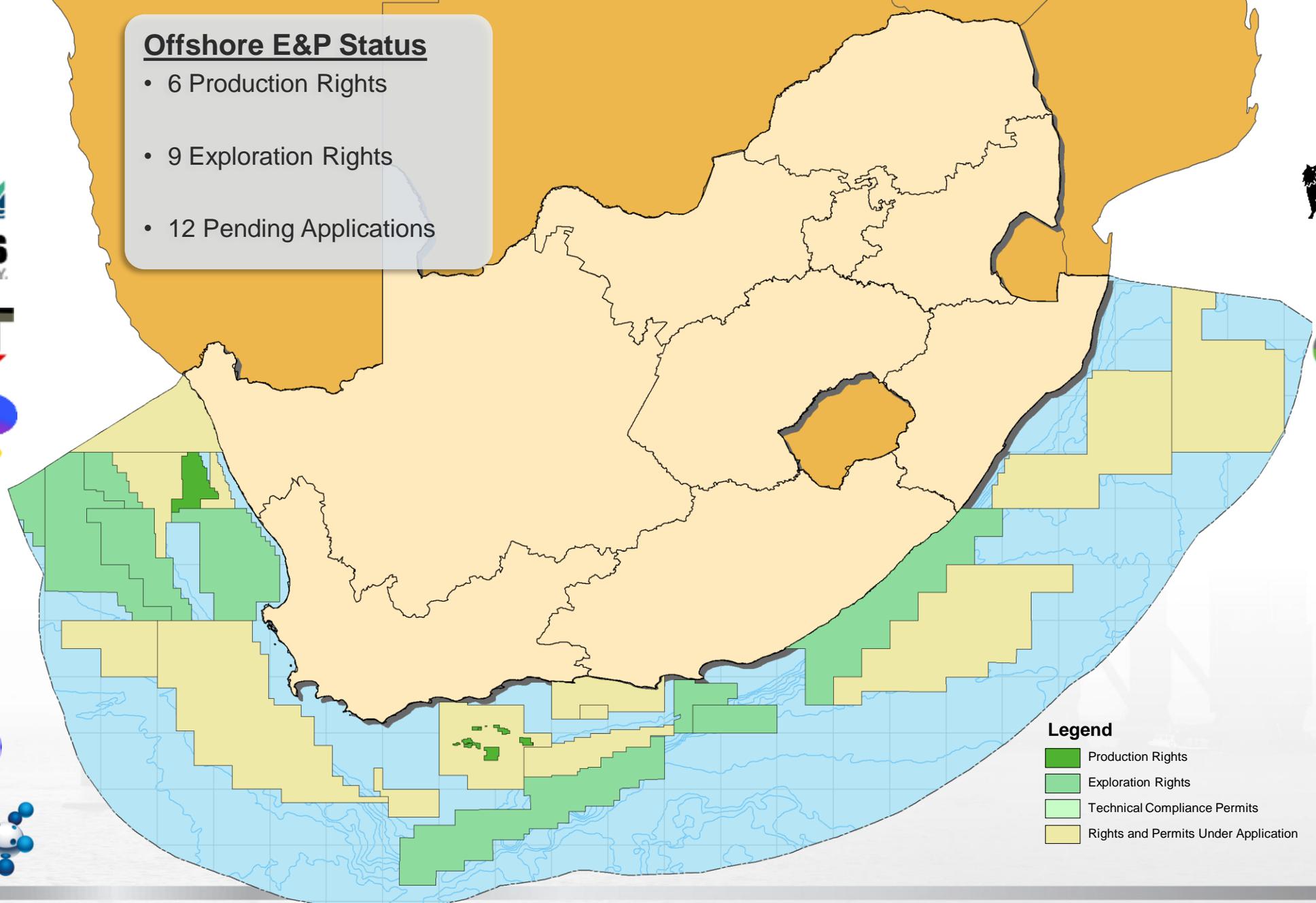
- Seismic Data Vintages
 - Acquired Between 1990 - 2020
- 2D Seismic Data Volume
 - 2,1 Million Line Kilometres
- 3D Seismic Data Volume
 - Total of 70 000 km² acquired



OFFSHORE EXPLORATION AND PRODUCTION ACTIVITIES

Offshore E&P Status

- 6 Production Rights
- 9 Exploration Rights
- 12 Pending Applications



Legend

- Production Rights
- Exploration Rights
- Technical Compliance Permits
- Rights and Permits Under Application





SUNBIRD ENERGY

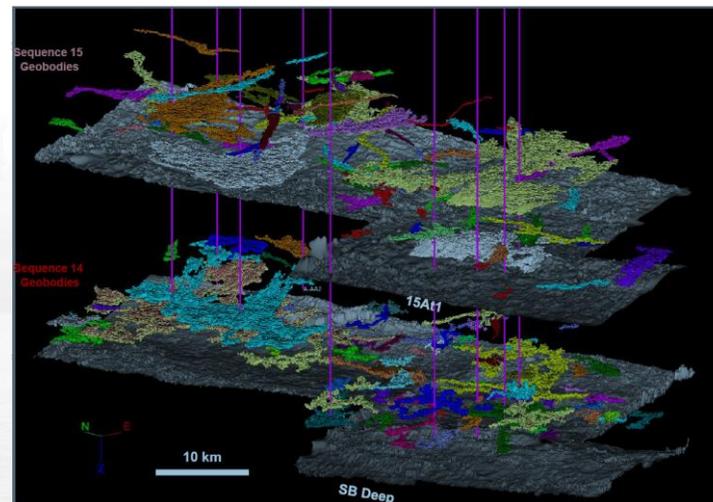
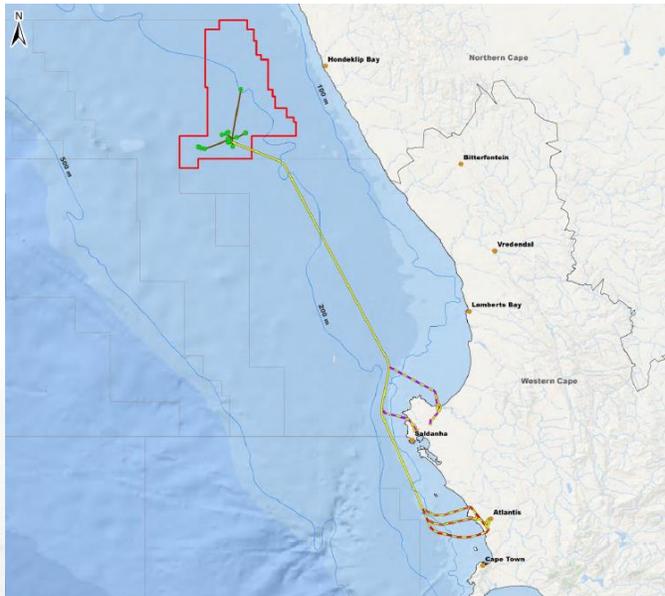
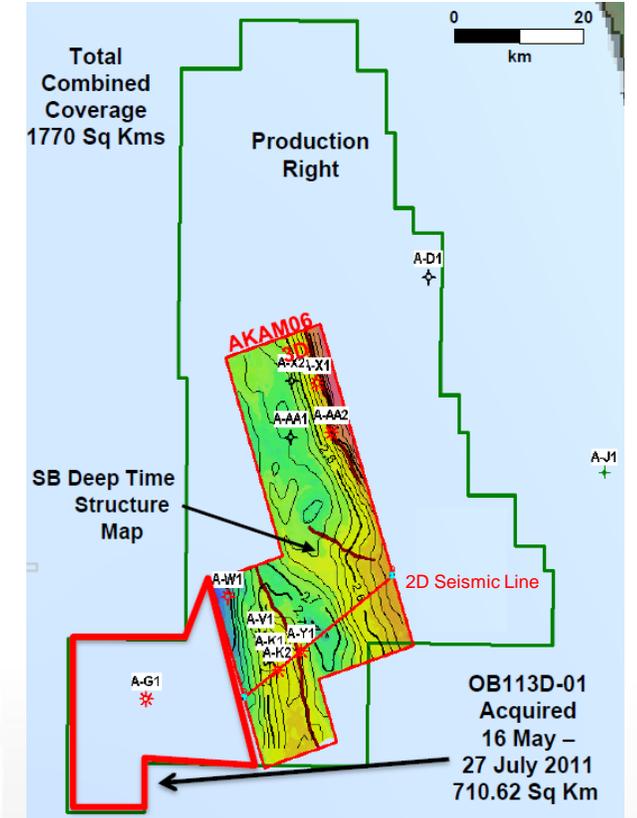
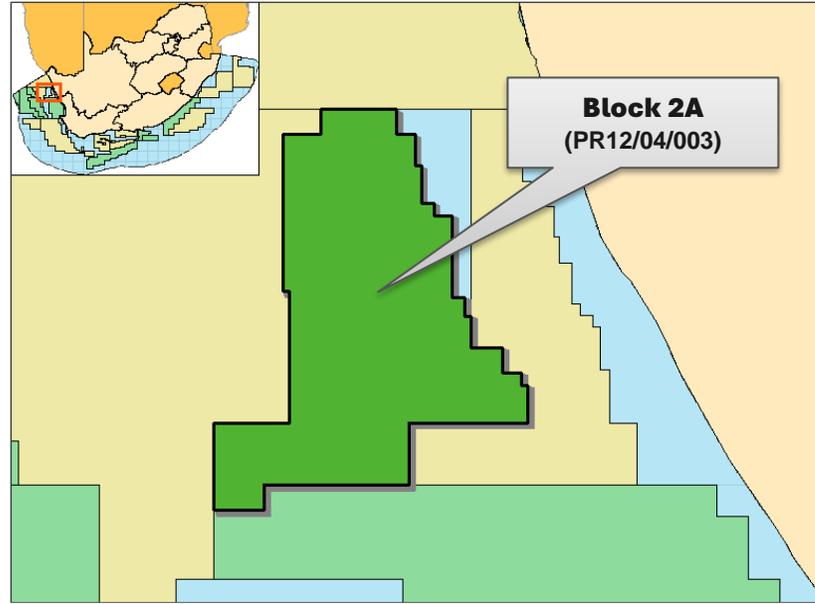
JOINT VENTURE PARTNERS

SUNBIRD ENERGY	PetroSA
76%	24%



BLOCK 2A

- Right Type : PR 003
- Basin : Orange Basin (West Coast)
- Water Depth : Between 200-300 meters
- Extent : 5000 km²
- Play Type : Deltaic Sandstones
- Trap Type : Combined Structural-Stratigraphic
- Resource Type : Wet Gas and Gas Condensate
- Potential Reserves : 0,5 TCF (P50)



Azinam AZINAM PETROLEUM

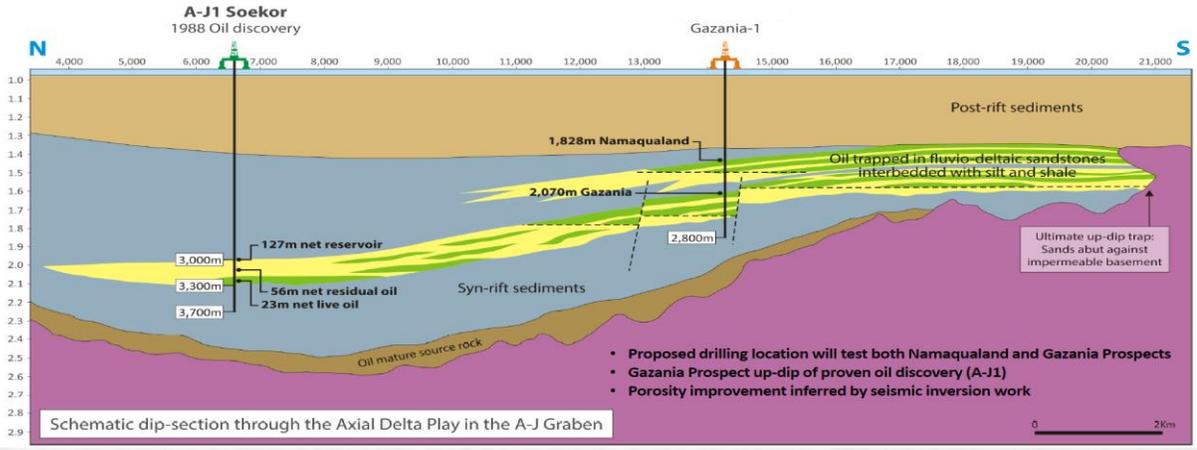
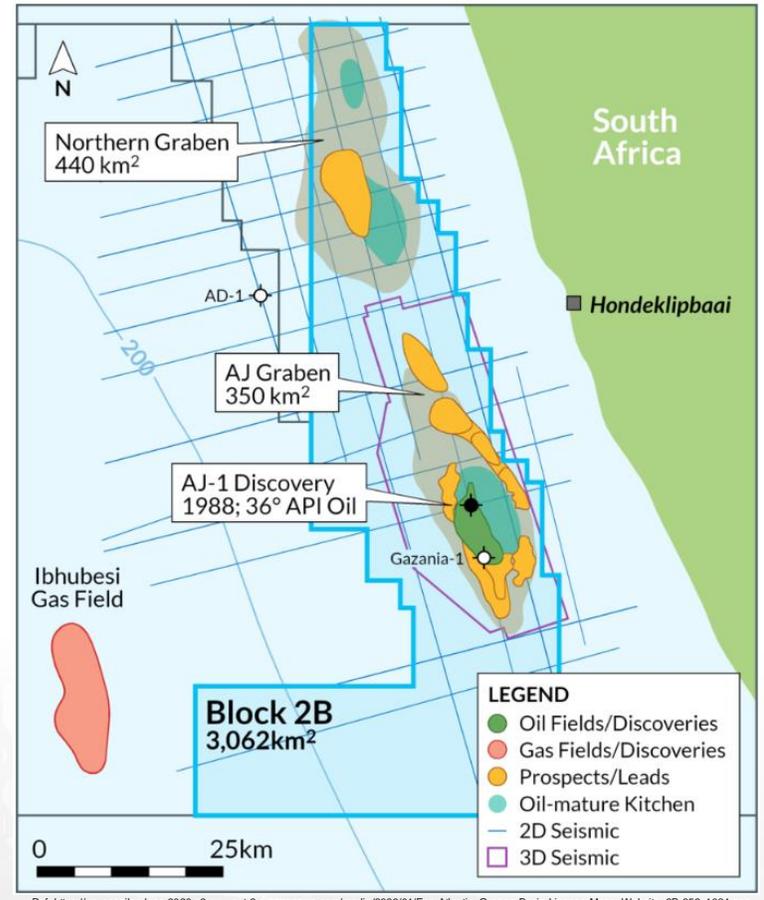
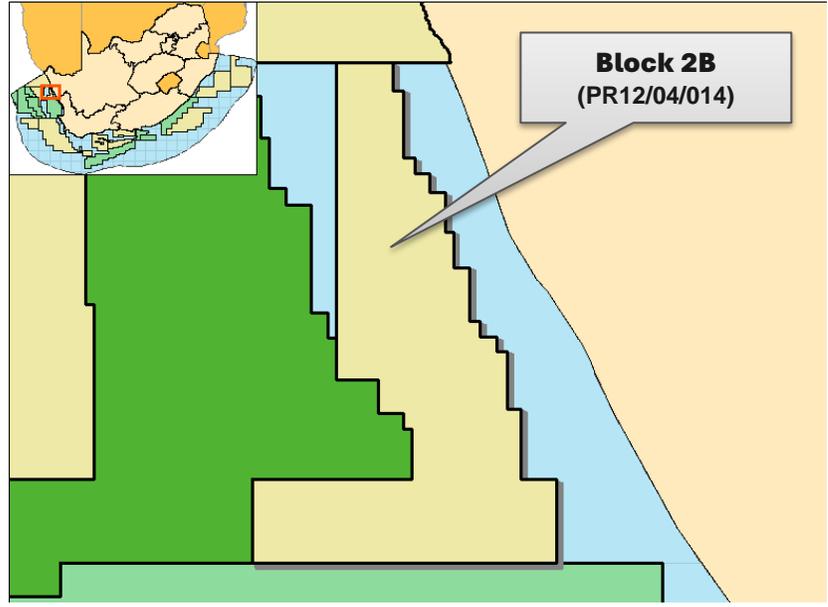
JOINT VENTURE PARTNERS

 Azinam	 Africa Energy	 Panoro Energy	 CROWN ENERGY
50%	27,5%	12,5%	10%



BLOCK 2B

- Right Type : PR 014
- Basin : Orange Basin (West Coast)
- Water Depth : Between 50-200 meters
- Extent : 3062 km²
- Play Type : Syn-rift Sediments/Rift Basin
- Trap Type : Stratigraphic Pinch-out
- Resource Type : Medium to Light Oil (36 API)
Possible Shallow Gas
- Resource Potential : Not Disclosed
(AJ-1: flow 191 bpd (36 API oil))



Ref: <https://images-global.nhst.tech/image/VxdrR0xyODdxTG4SUh5cDdW0Xkd2JBUEdCdmh4b15dU4cDZkYmRyYz0=/nhst/binary/85610f16a684a7ce5a8ea1b2fc23694>



TOTAL ENERGY SA

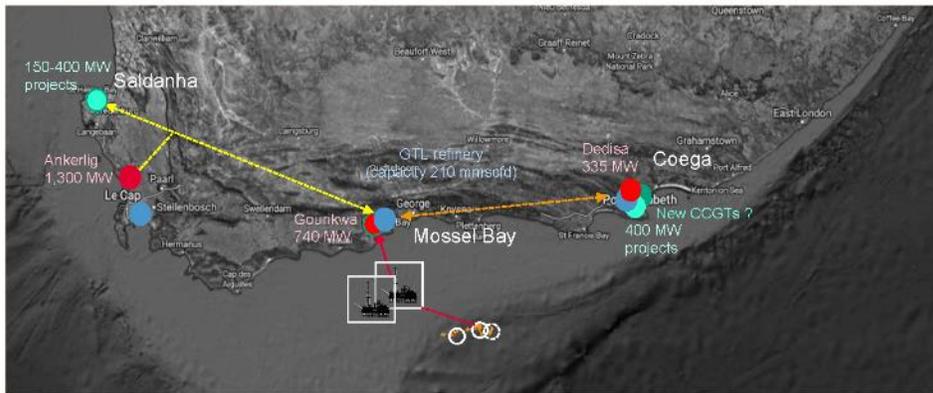
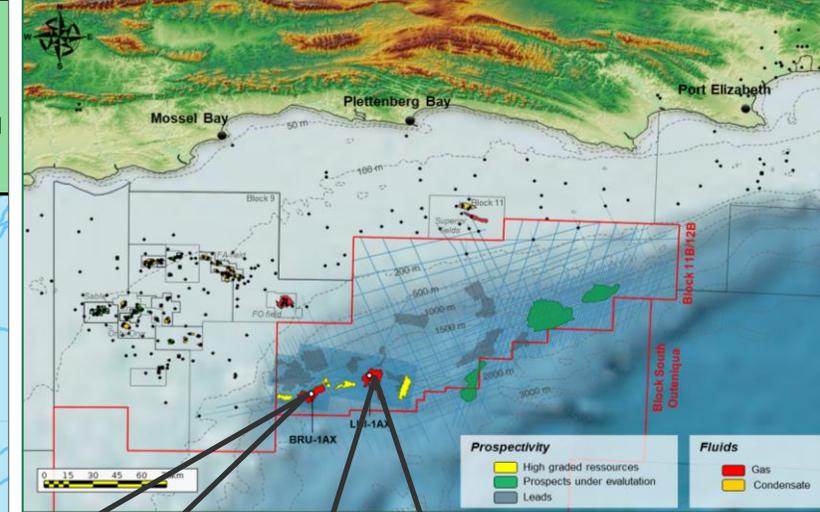
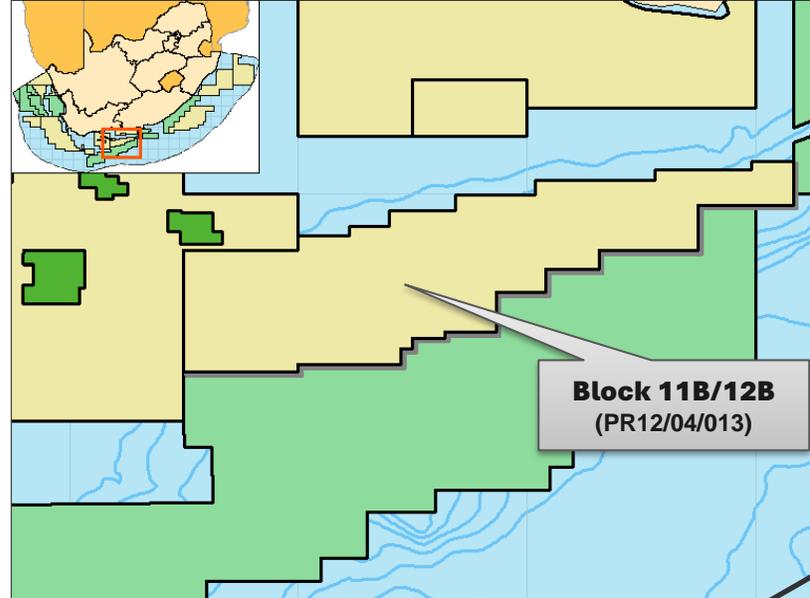
JOINT VENTURE PARTNERS

45%	10%	25%	20%

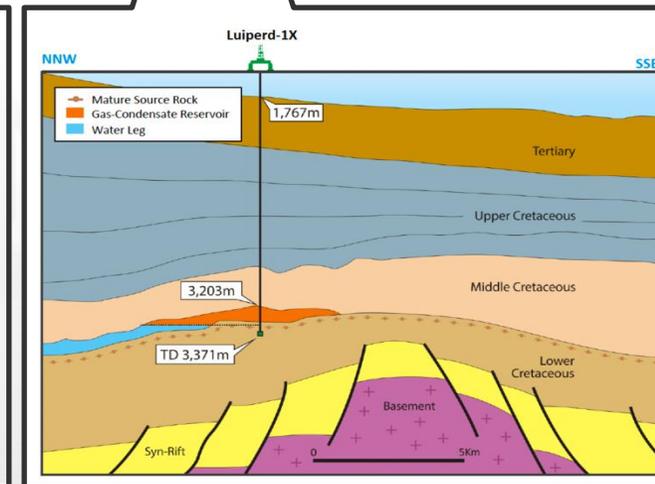
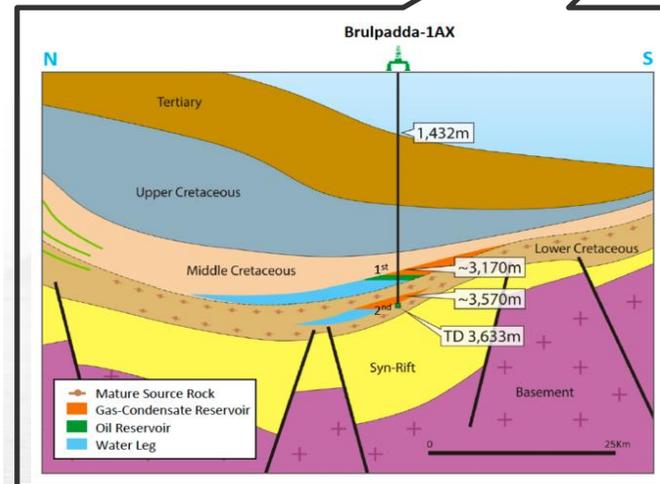


BLOCK 11B/12B

- Right Type : PR 013
- Basin : Southern Outeniqua Basin (South Coast)
- Water Depth : Between 500-2000 meters
- Extend : 18 734 km²
- Play Type : Submarine Fan Complex
- Trap Type : Stratigraphic and Basement Drape
- Resource Type : Gas Condensate
Medium to Light Oil
- Estimated Reserves : 1 Billion Barrel Oil Equivalent



- Emergency Power tender
- New CCGT ?
- Industrial Gas Demand
- CCGT
- Existing Gas Pipelines
- Projected Gas Pipelines Part of Padavissie Development
- Projected Gas Pipelines to be developed by South African Authorities seen as **necessary**
- Projected Gas Pipelines to be developed by South African Authorities seen as **potential**



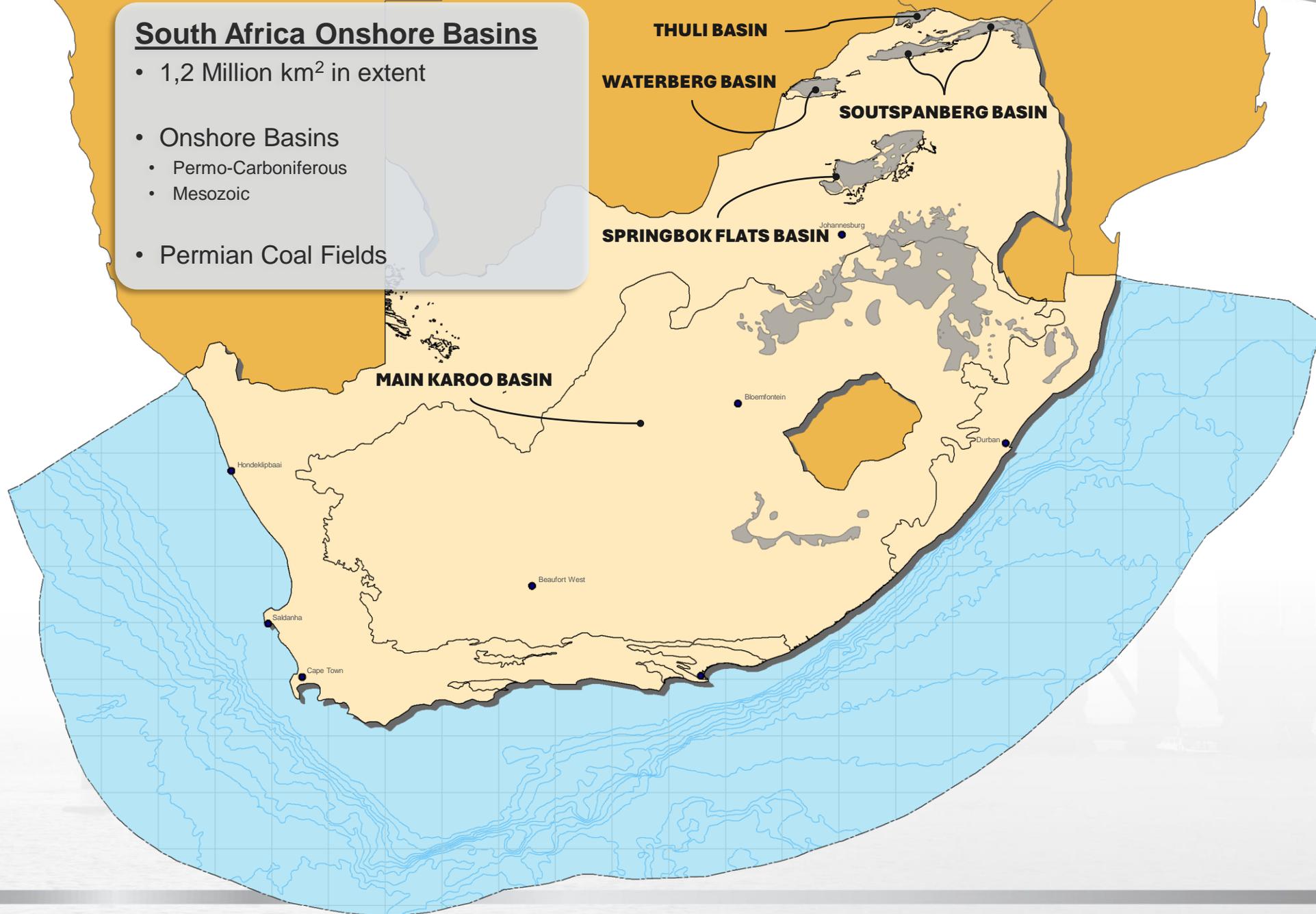
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South Africa Onshore Basins

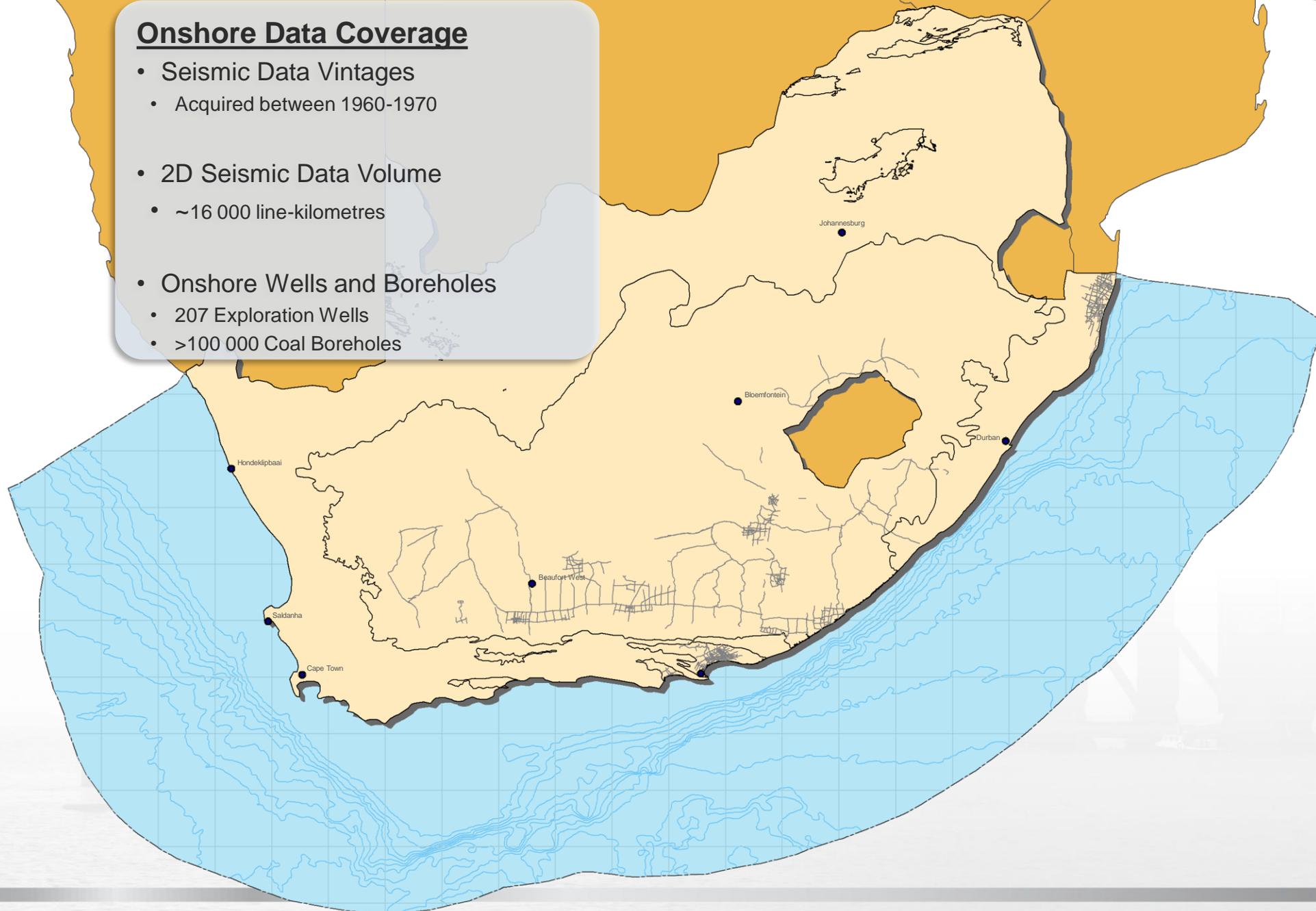
- 1,2 Million km² in extent
- Onshore Basins
 - Permo-Carboniferous
 - Mesozoic
- Permian Coal Fields





Onshore Data Coverage

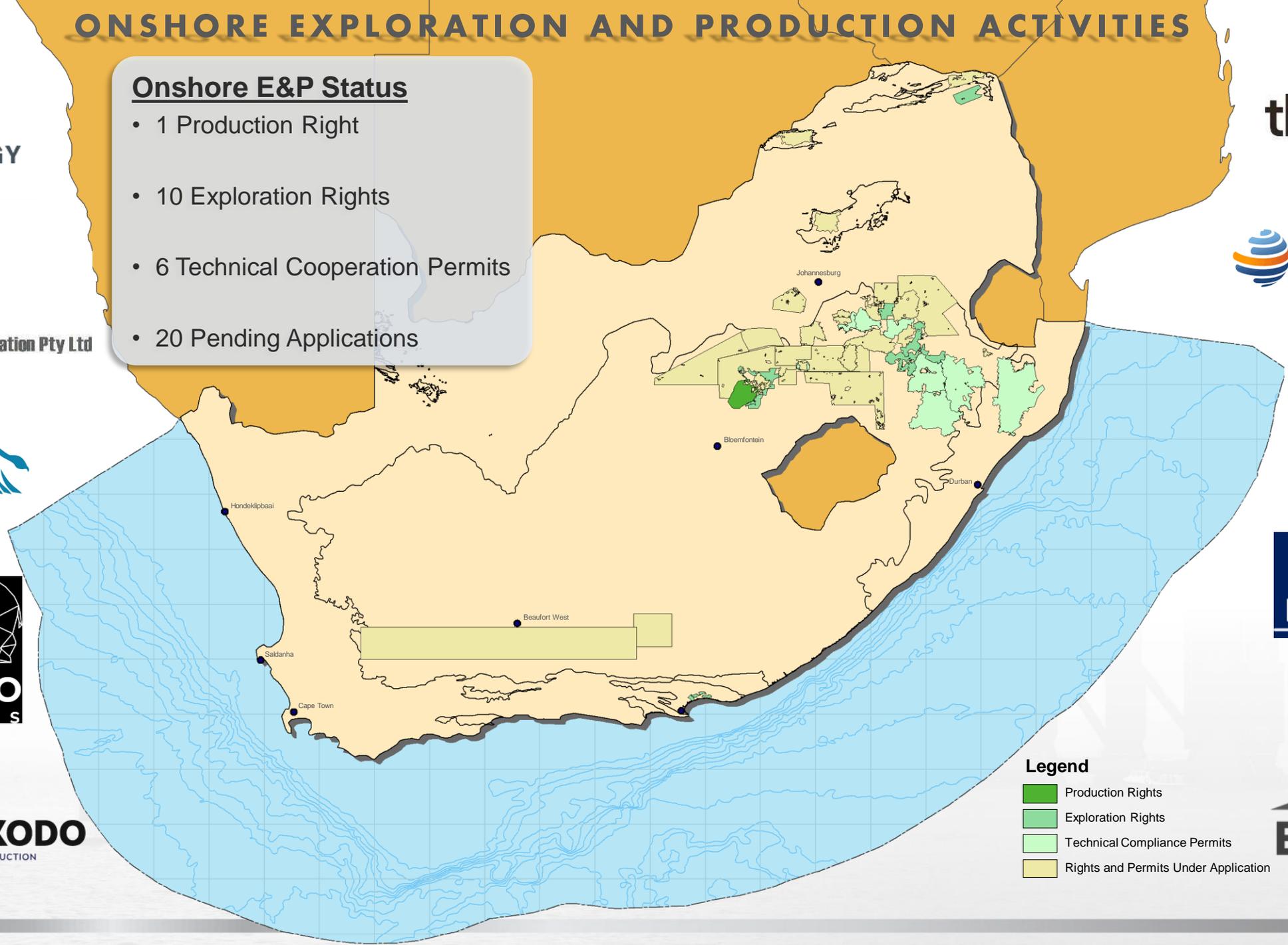
- Seismic Data Vintages
 - Acquired between 1960-1970
- 2D Seismic Data Volume
 - ~16 000 line-kilometres
- Onshore Wells and Boreholes
 - 207 Exploration Wells
 - >100 000 Coal Boreholes



ONSHORE EXPLORATION AND PRODUCTION ACTIVITIES

Onshore E&P Status

- 1 Production Right
- 10 Exploration Rights
- 6 Technical Cooperation Permits
- 20 Pending Applications



Legend

- Production Rights
- Exploration Rights
- Technical Compliance Permits
- Rights and Permits Under Application



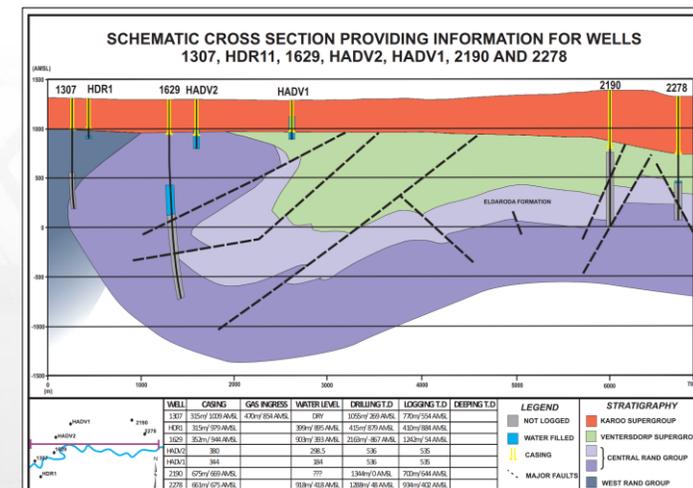
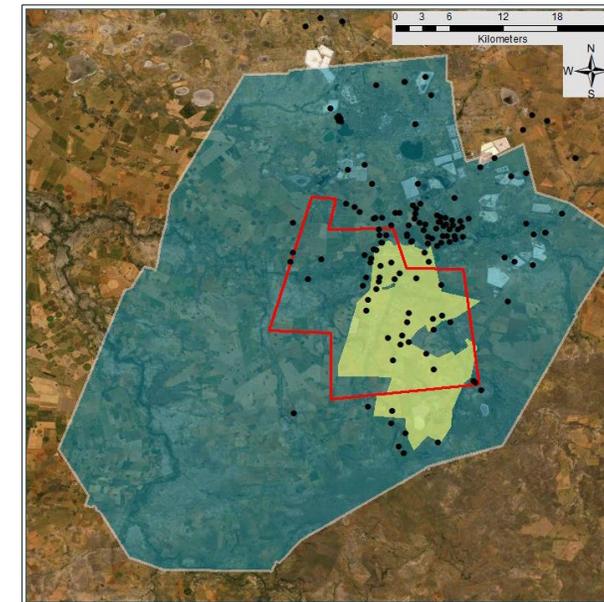
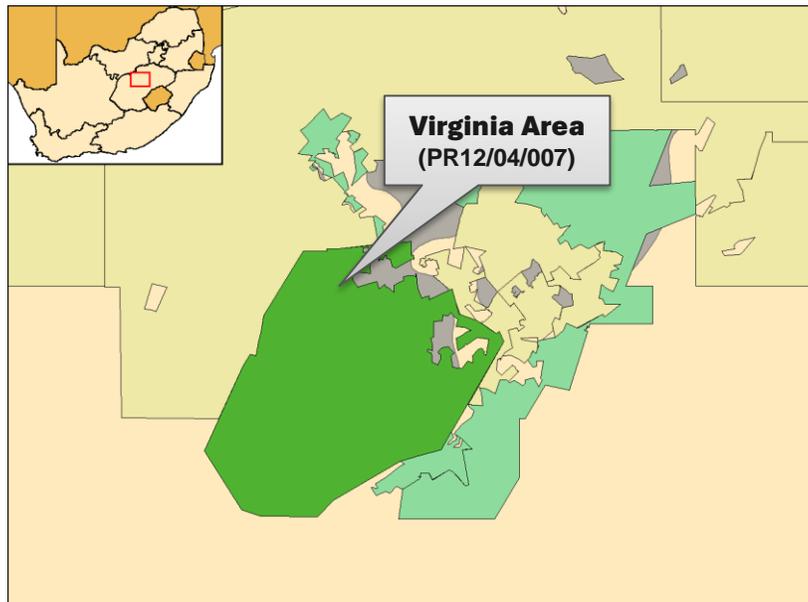


TETRA 4



Virginia Area

- Right Type : PR 007
- Basin : Northern Karoo Basin
- Extent : 1513 km²
- Play Type : Biogenic Gas
- Trap Type : Fracture Basement/ Faults
- Resource Type : Dry Gas and Helium (radiogenic)
- Reserve Estimate : 407 BCF (2P) – Methane
13 BCF (2P) - Helium

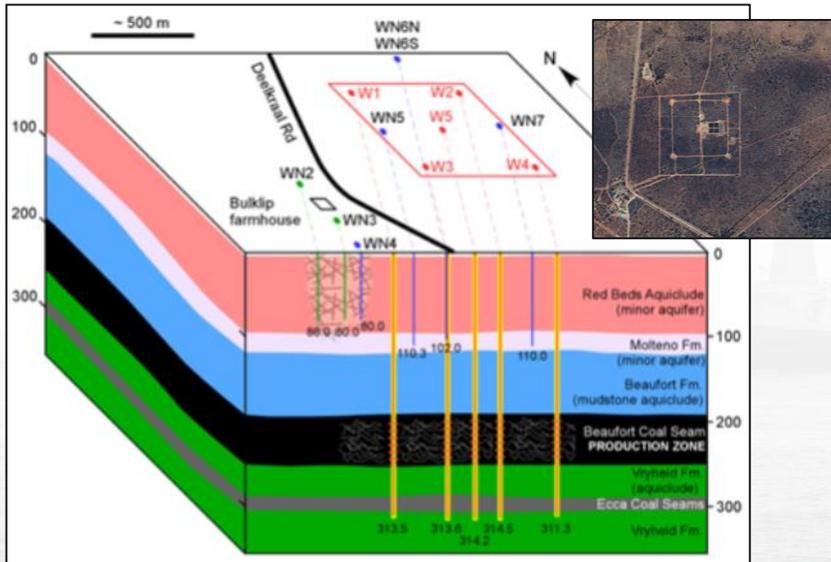
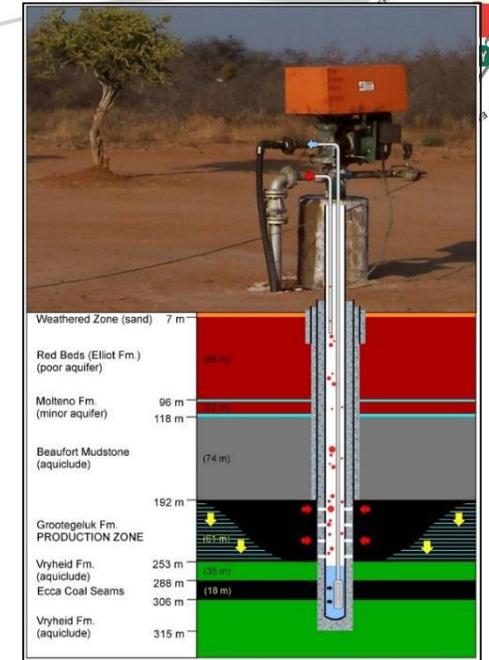
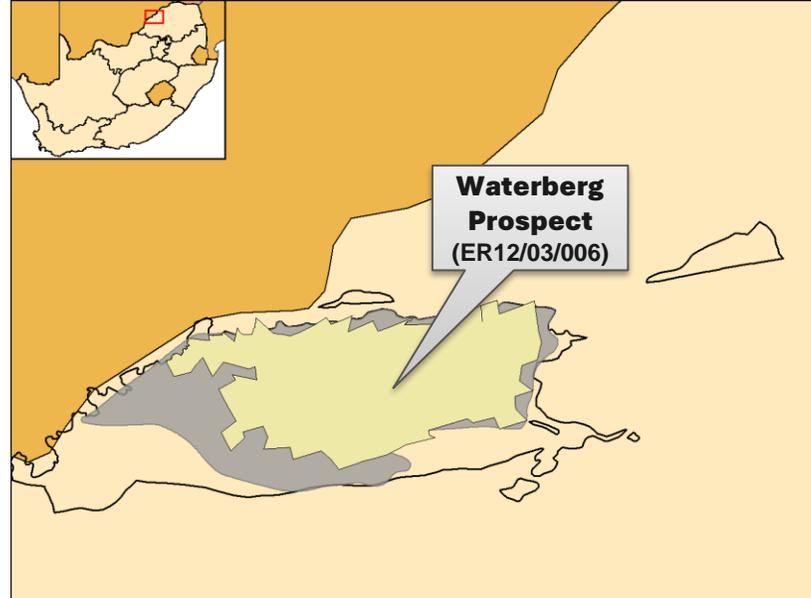




THUNGELA RESOURCES

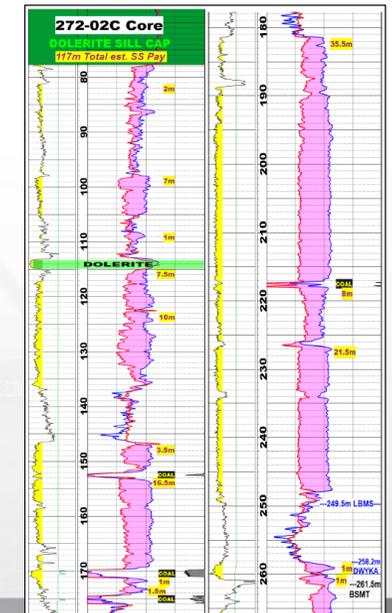
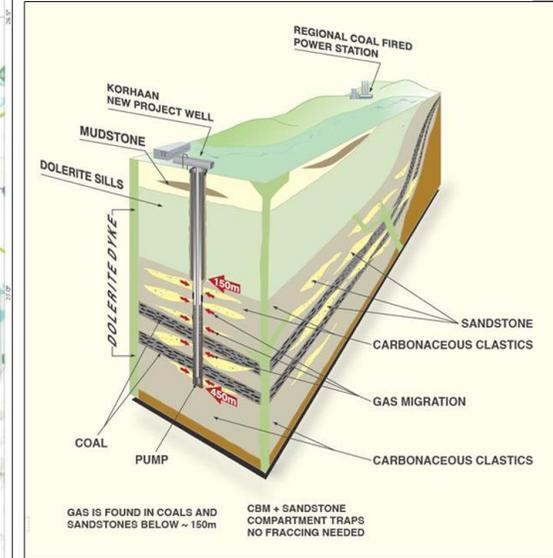
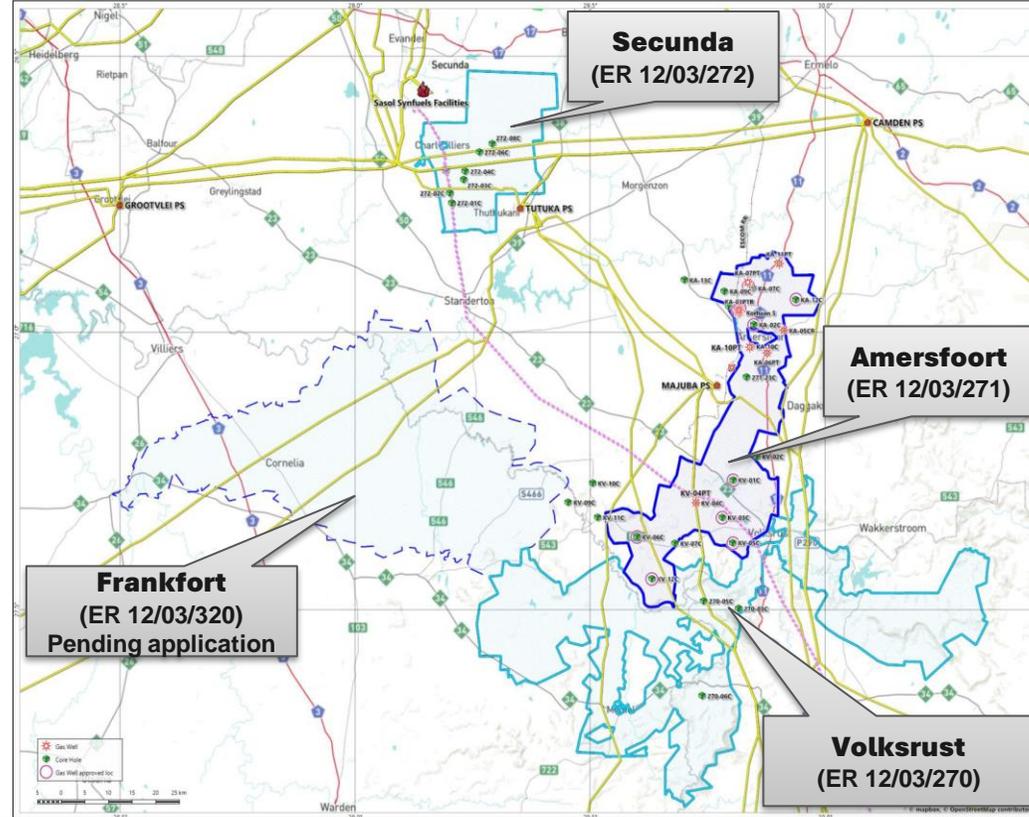
Lephalale Basin

- Right Type : ER 006
- Basin : Northern Karoo Basin, Lephalale Basin
- Extent : 1338 km²
- Play Type: : Coal Bed Methane
- Trap Type : Adsorption and Hydrodynamic
- Resource Type : Dry Gas
- Reserve Estimate : 1 Tcf (2P)



Ermelo and Secunda Region

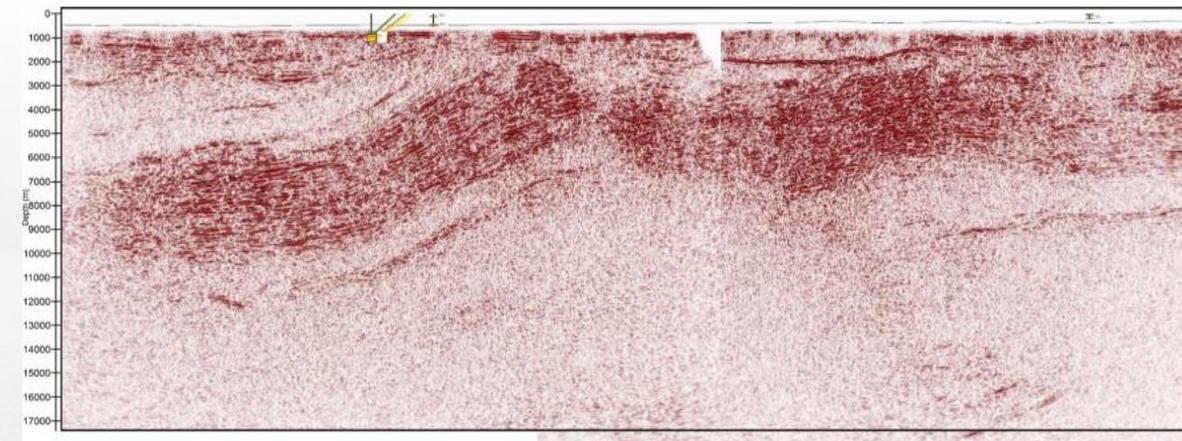
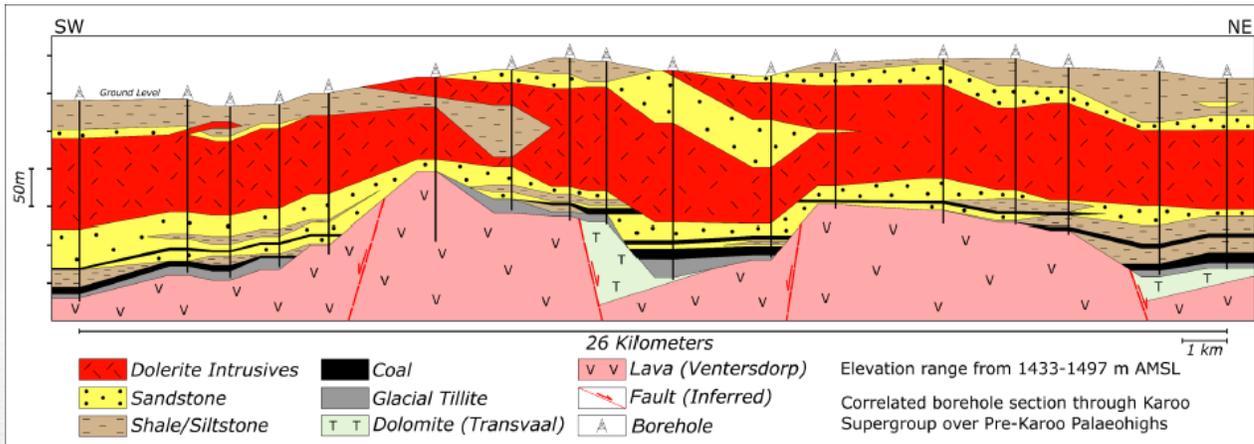
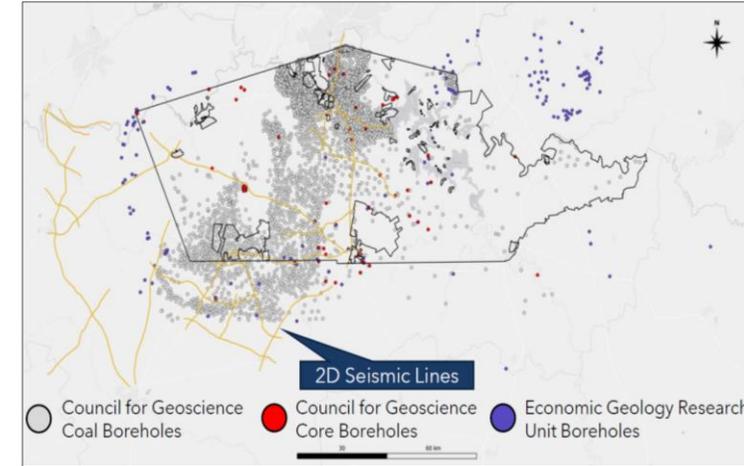
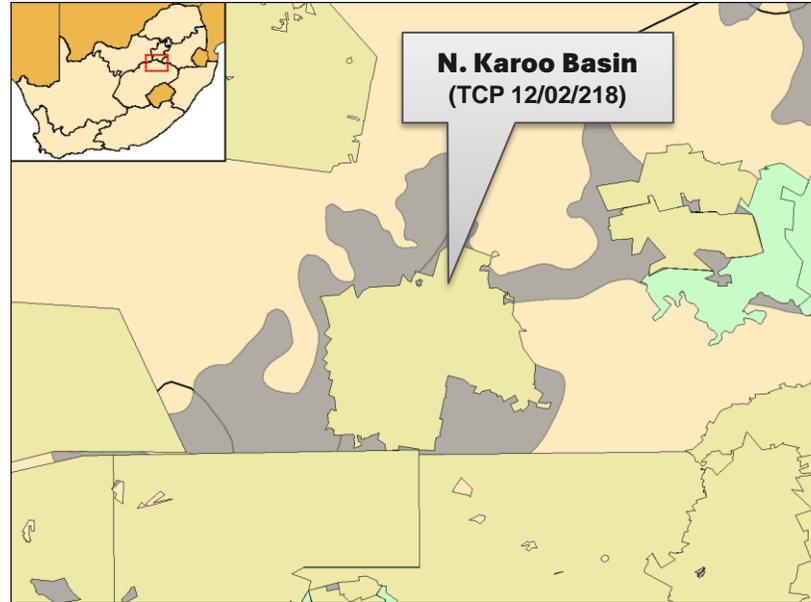
- Right Type : ER 270 – 272
- Basin : Northern Karoo Basin
- Extent : 7000 km²
- Play Type : Coal Bed Methane/Tight Gas Sandstones
- Trap Type : Adsorption/Hydrodynamically/Stratigraphic
- Resource Type : Dry Gas
- Resource Potential : 6 BCF (1P) - ER 271 Only
~5,8 TCF (2U) - All ER's





Northern Karoo Basin

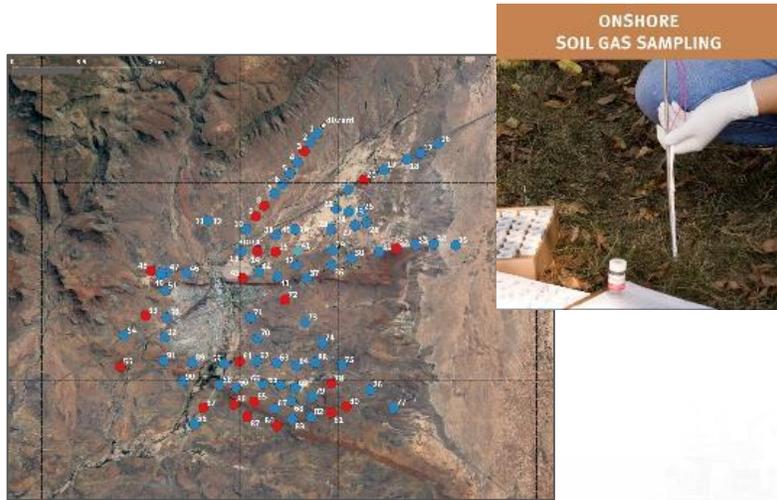
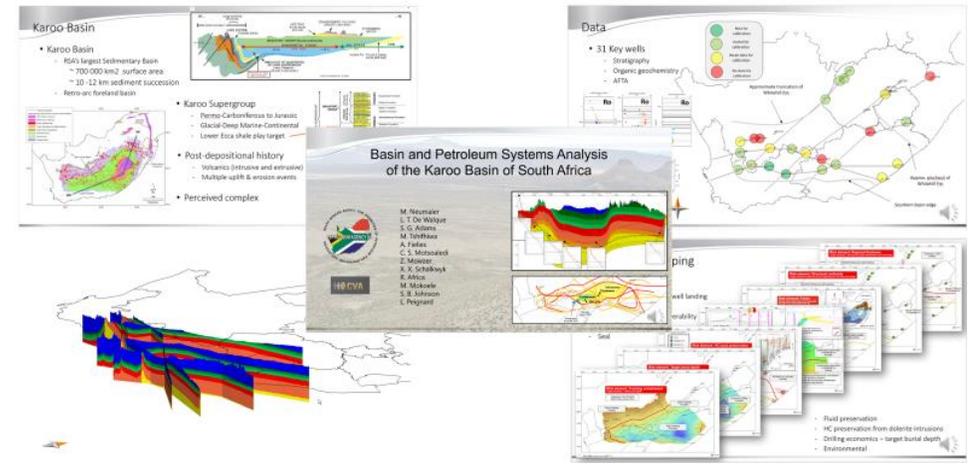
- Right Type : TCP218
- Basin : Northern Karoo Basin, Free State Province
- Extent : 6608 km²
- Play Type : Fracture Basement/Fault Network
- Trap Type : Adsorption/Structural Closure/Fracture Basement
- Resource Type : Biogenic Gas and Helium (radiogenic)
- Resource Potential : Unknown – Initial stages of exploration



OFFSHORE AND ONSHORE ACTIVITIES AND OPPORTUNITIES...

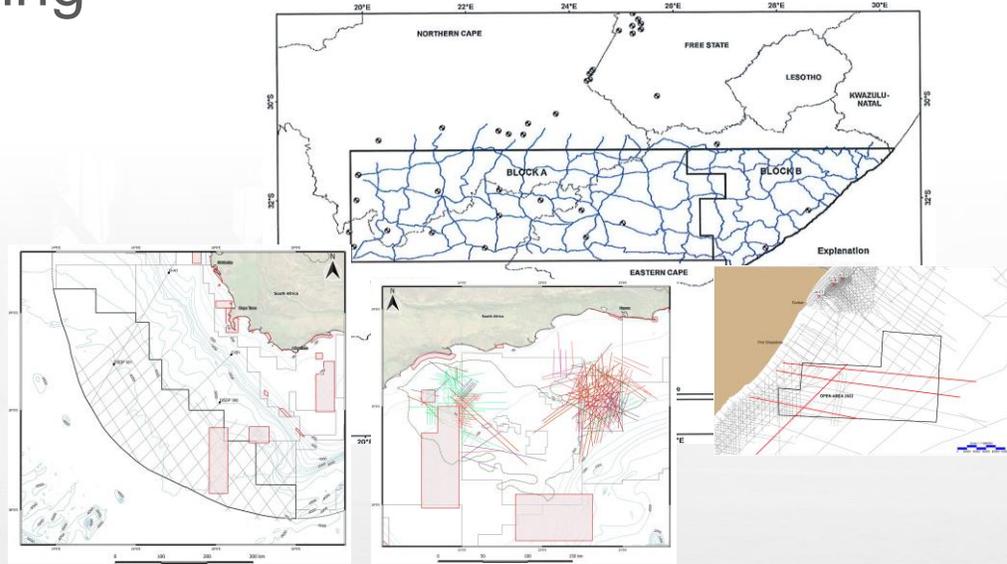


Karoo Basin and Petroleum Systems Modelling



Geochemical Soil Sampling

Multi-client Geophysical or Geochemical Surveys

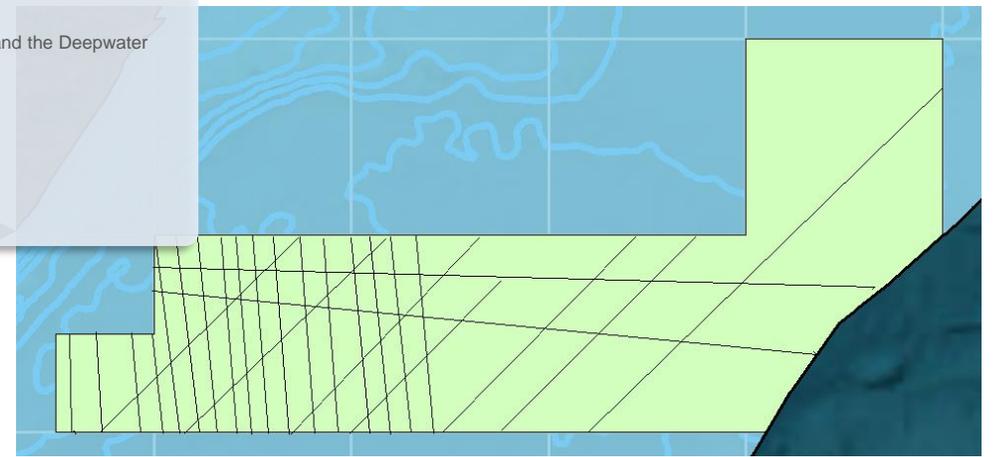




Offshore and Onshore Activities and Opportunities...

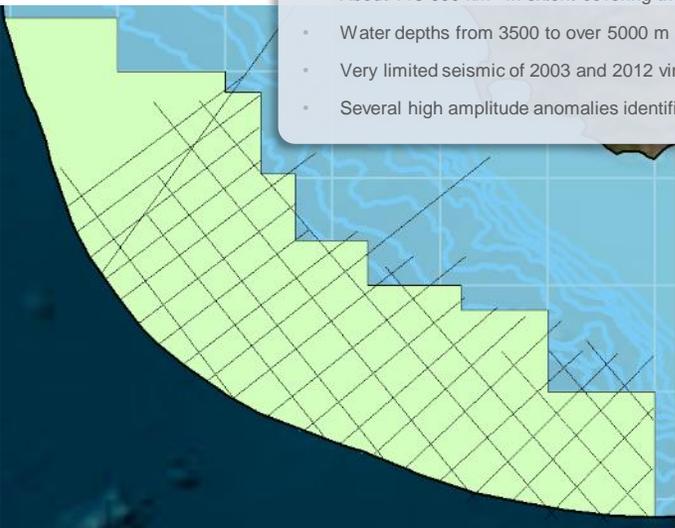
Open Acreage: Durban –Natal Basin

- 50 000km² in extent covering part of the Durban basin, northern Transkei swell and the Deepwater Natal Valley
- Water depths between 4200 - 5500 m
- Four wells drilled on the shelf
- Several high-amplitude anomalies identified
- 4-way dip closures



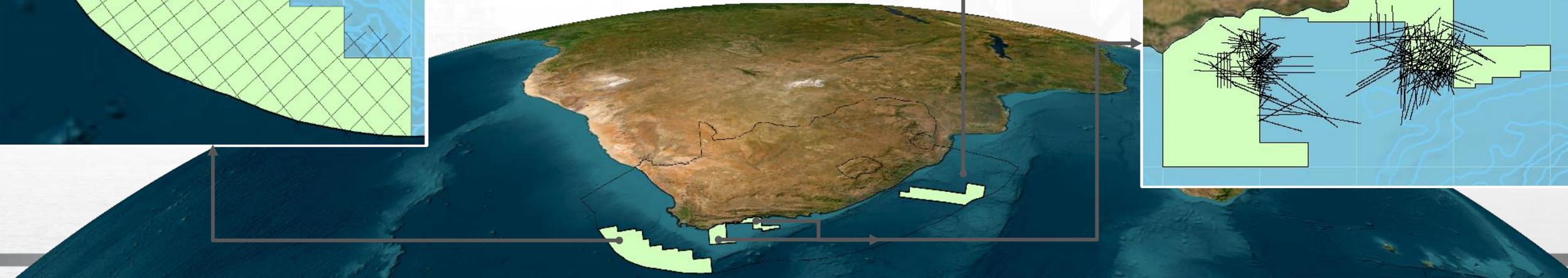
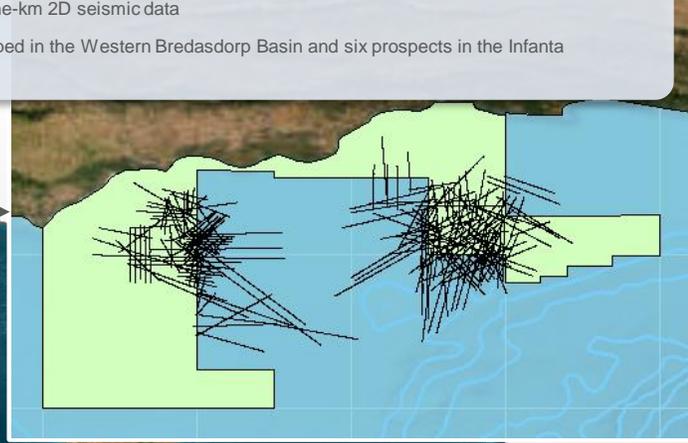
West Coast Deep-water Southern Orange Basin

- About 113 000 km² in extent covering the Southern Deep Orange Basin
- Water depths from 3500 to over 5000 m
- Very limited seismic of 2003 and 2012 vintage with a total of ~1794 line-km
- Several high amplitude anomalies identified



Open Acreage: Western Bredasdorp and Infanta Embayment

- Acreage consists of Western Bredasdorp Basin and Infanta Embayment and covers ~16 900 km²
- Water depths between 50 – 200 m
- The acreage area contain ~ 7 000 line-km 2D seismic data
- Four high-amplitude anomalies mapped in the Western Bredasdorp Basin and six prospects in the Infanta Embayment





Offshore and Onshore Activities and Opportunities



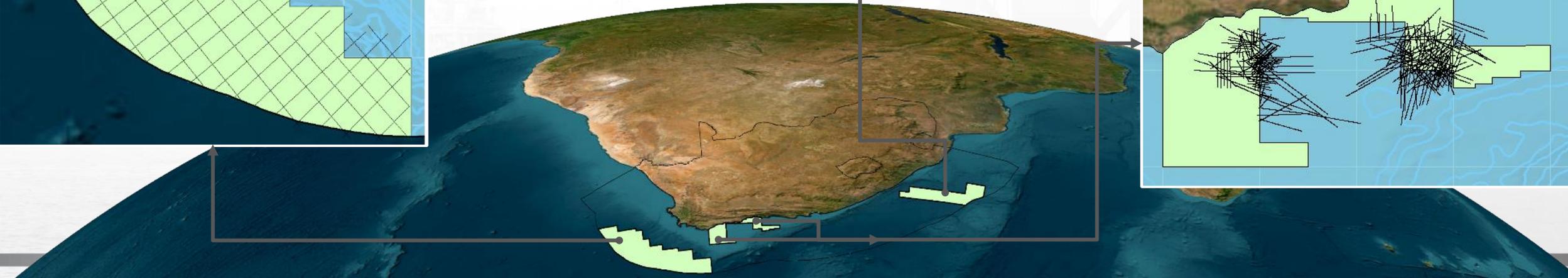
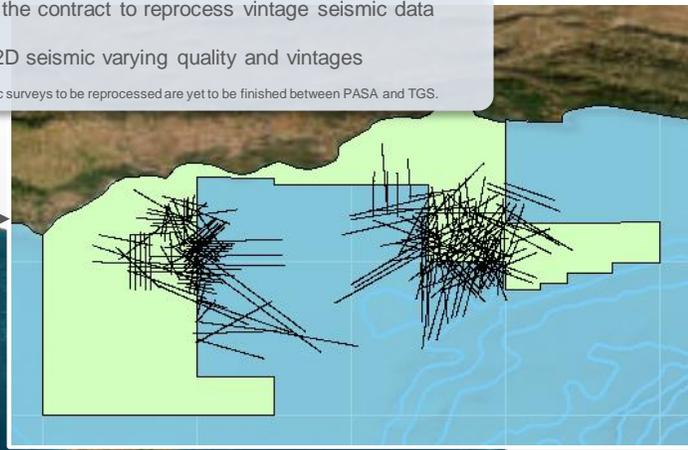
TGS submitted the winning bid and will apply for a permit to acquire multi-client data over the area
 ~ 3 500 line-km 2D seismic data at 5-10 km spacing
 * Multi-client Seismic Survey design and seismic data coverage are yet to be finalised between PASA and TGS.



TGS submitted the winning bid and will apply for a permit to acquire multi-client data over the area
 ~ 6 900 line-km 2D seismic data at 25-35 km spacing
 * Multi-client Seismic Survey design and seismic data coverage are yet to be finalised between PASA and TGS.



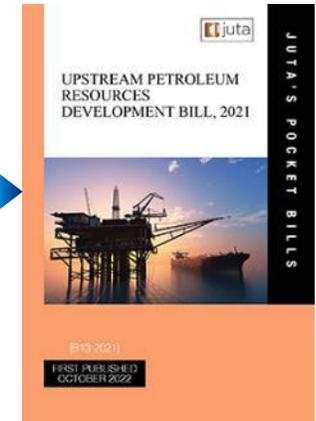
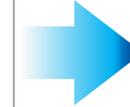
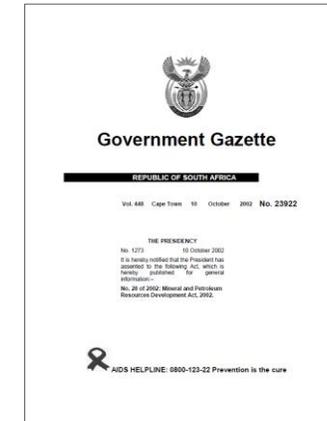
TGS has been awarded the contract to reprocess vintage seismic data
 ~ 4 500 line-km 2D seismic varying quality and vintages
 * The quantity and the selection of 2D seismic surveys to be reprocessed are yet to be finished between PASA and TGS.



Legislative Framework Overview

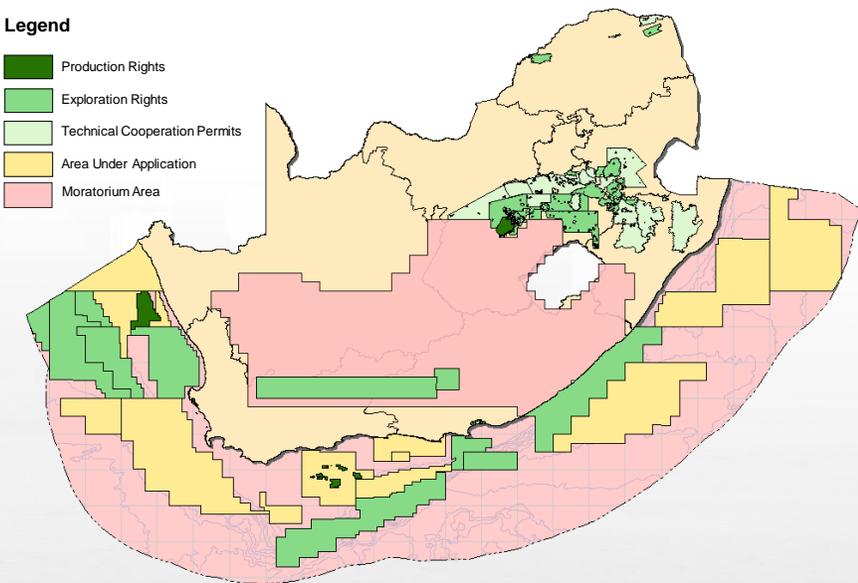


- Mineral and petroleum resources development act (MPRDA) of 2002 is still in effect
- Cabinet approved the submission of the draft Upstream Petroleum Resources Development Bill (UPRD) to parliament
 - Separate the Mineral and Petroleum industries
 - Application by bid round
 - Restructuring administration fees
- Moratorium applies to the entire offshore and parts of onshore
 - No new ER, PR or TCP applications accepted in moratorium areas, only new applications for Reconnaissance Permits.
 - Does not impact existing right and permits



Legend

- Production Rights
- Exploration Rights
- Technical Cooperation Permits
- Area Under Application
- Moratorium Area



Thank You!!!



Visit us:
Global Energy Opportunities Pavilion Booth #555

www.petroleumagencysa.com