

Current Petroleum Activities in South Africa



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Petroleum Agency SA
AAPG ICE 2019
Buenos Aires, Argentina

OUTLINE

- Roles of the Agency
- Types of permits and rights
- Petroleum Exploration and Production Activities
- Open Acreage
- Application processes
- Oil and Gas Bill
- New Developments
- Publications

PETROLEUM AGENCY SA

- 1. Promotes and regulates** all upstream activities onshore and offshore
- 2. Custodian of the national** petroleum exploration and production **database.**

PERMITS

Reconnaissance Permit

Allows holder to acquire multi-client geo-physical data by conducting speculative surveys i.e. seismic, multi beam bathymetry, airborne surveys.

(Valid for 12 months, not transferable or renewable, not exclusive, Holders receives exclusive right to market and sell data for a maximum period of 10 years)

Technical Co-operation Permit:

Allows holder to undertake desktop study of the area

(Valid for 12 months, not transferable or renewable, holder has exclusive right to apply for Exploration right)

RIGHTS

Exploration Right:

Allows holder to explore for petroleum and produce for testing purposes subject to Minister's written permission

- Valid for initial period of 3 years and renewable for 3 periods of 2 years each (9 years in total);
- Transferable subject to Minister's written permission;
- It's exclusive and holder has exclusive right to apply for Production Right.

Production Right :

Allows holder to produce petroleum

- Valid for initial period of 30 years and renewable for further periods not exceeding 30 years each;
- Transferable subject to Minister's written permission;
- It's exclusive and holder has exclusive right to apply for renewal.

OFFSHORE SA - EXPLORATION ACTIVITY AND DEVELOPMENTS

Restriction on applications
 As of the 28th June 2018, all new applications for Technical Cooperation Permits, Exploration Rights and Production Rights will be by invitation until further notice.

This affects:

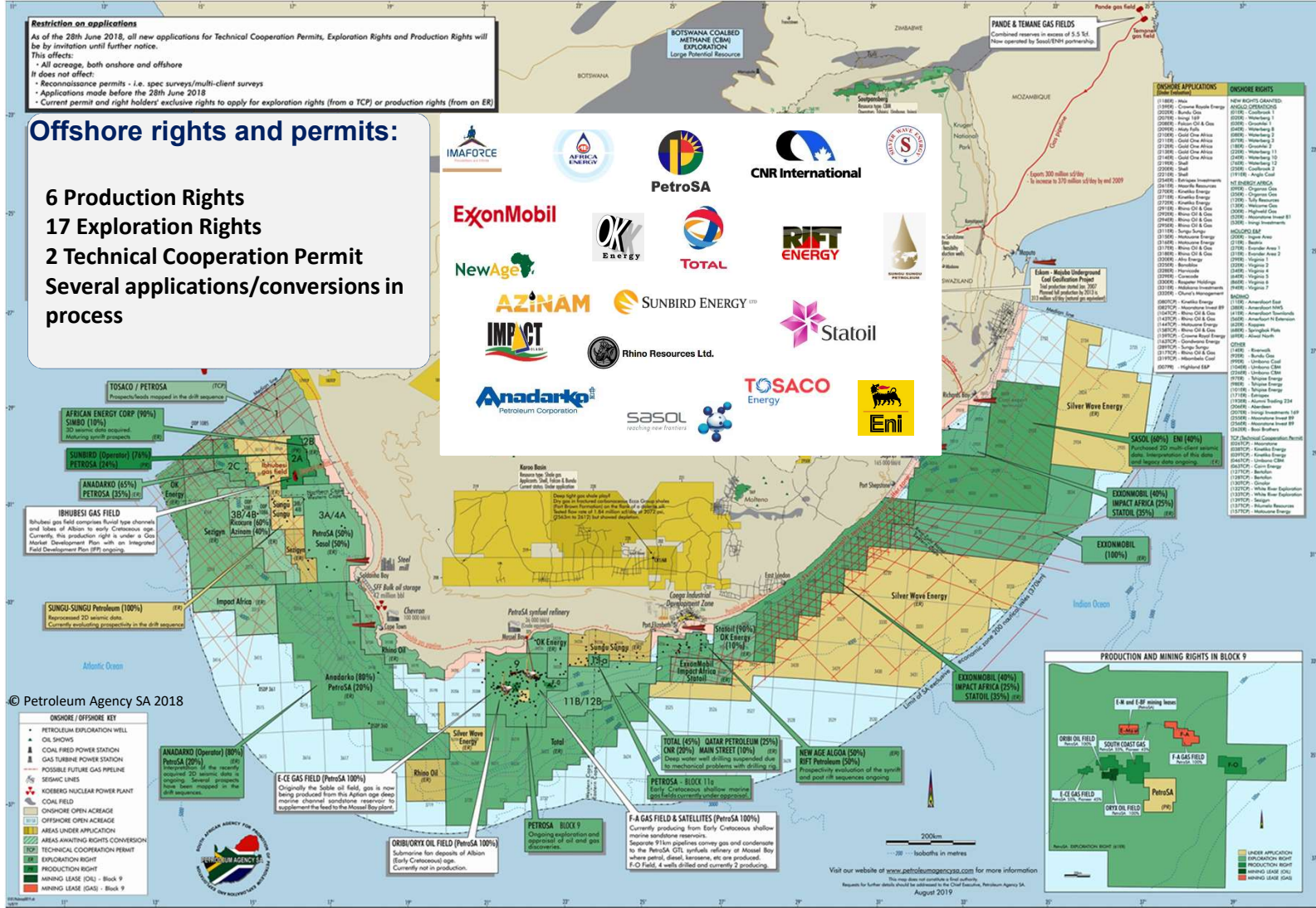
- All acreage, both onshore and offshore

It does not affect:

- Reconnaissance permits - i.e. spec surveys/multi-client surveys
- Applications made before the 28th June 2018
- Current permit and right holders' exclusive rights to apply for exploration rights (from a TCP) or production rights (from an ER)

Offshore rights and permits:

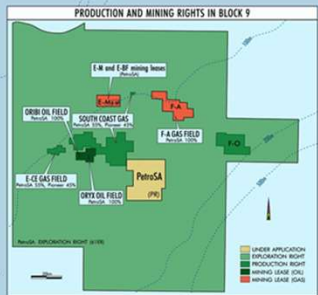
6 Production Rights
17 Exploration Rights
2 Technical Cooperation Permit
Several applications/conversions in process



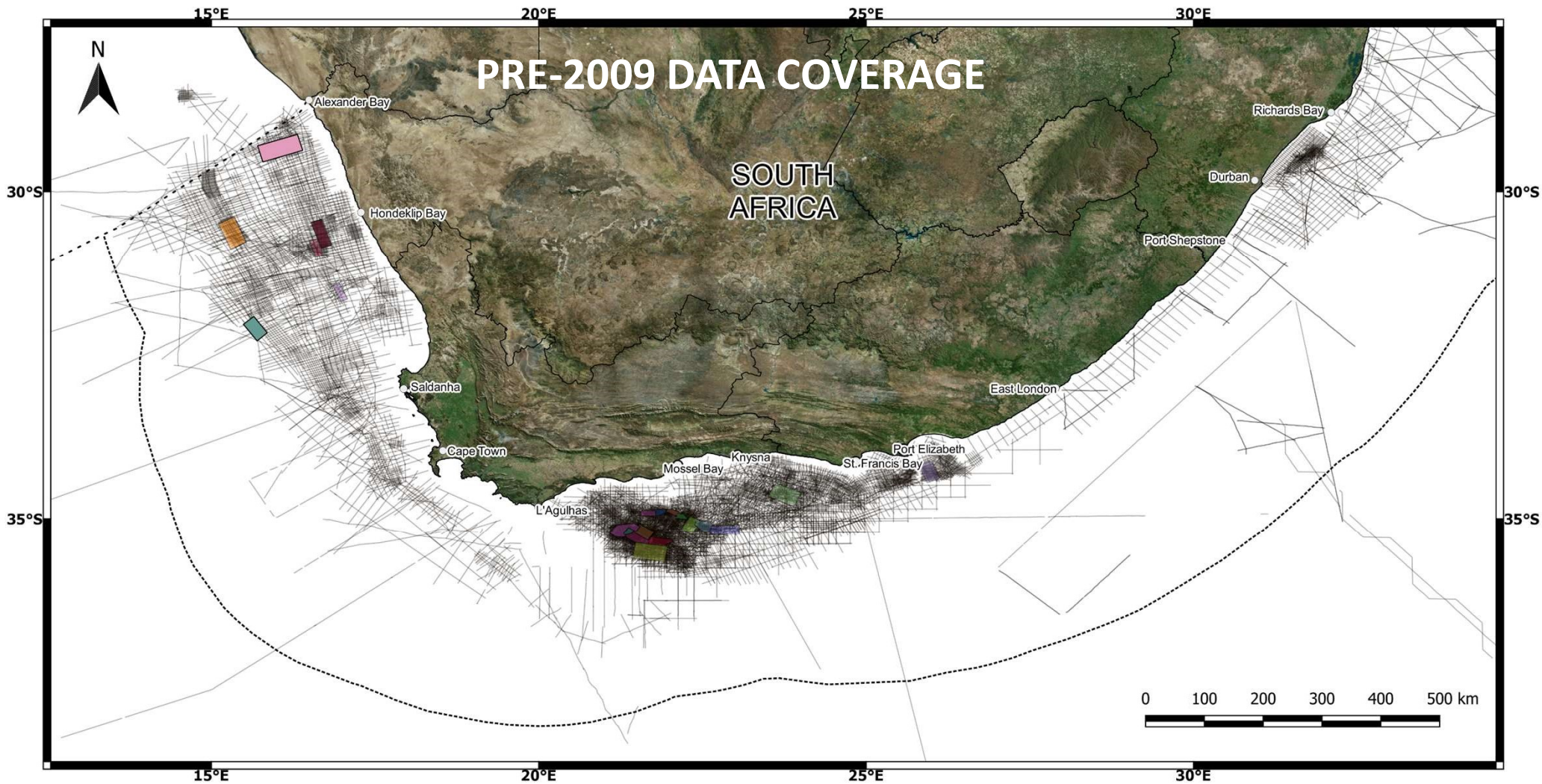
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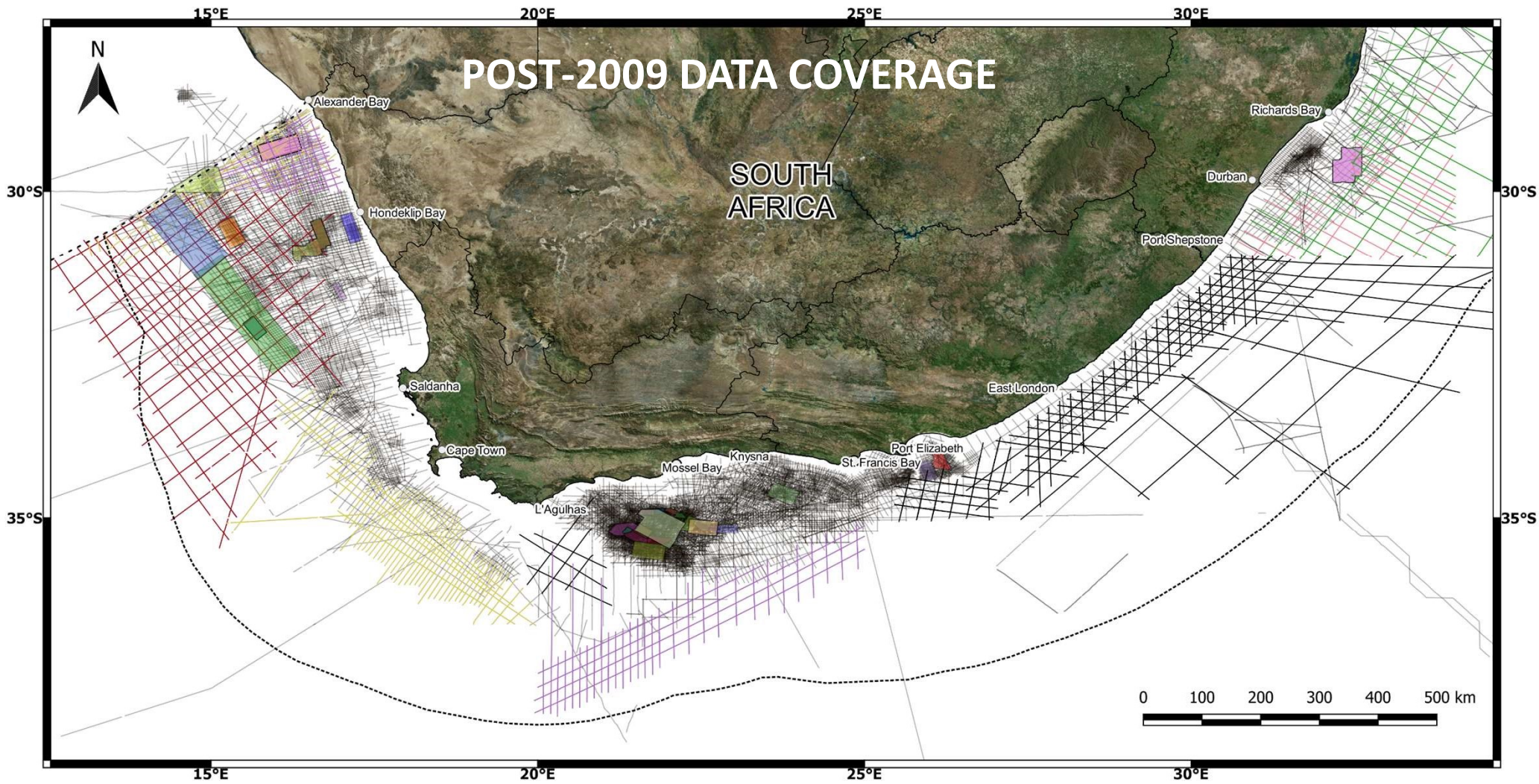
PANDE & TEMANE GAS FIELDS
 Combined reserves in excess of 5.5 Tcf. Now operated by Sasol/ENH partnership.

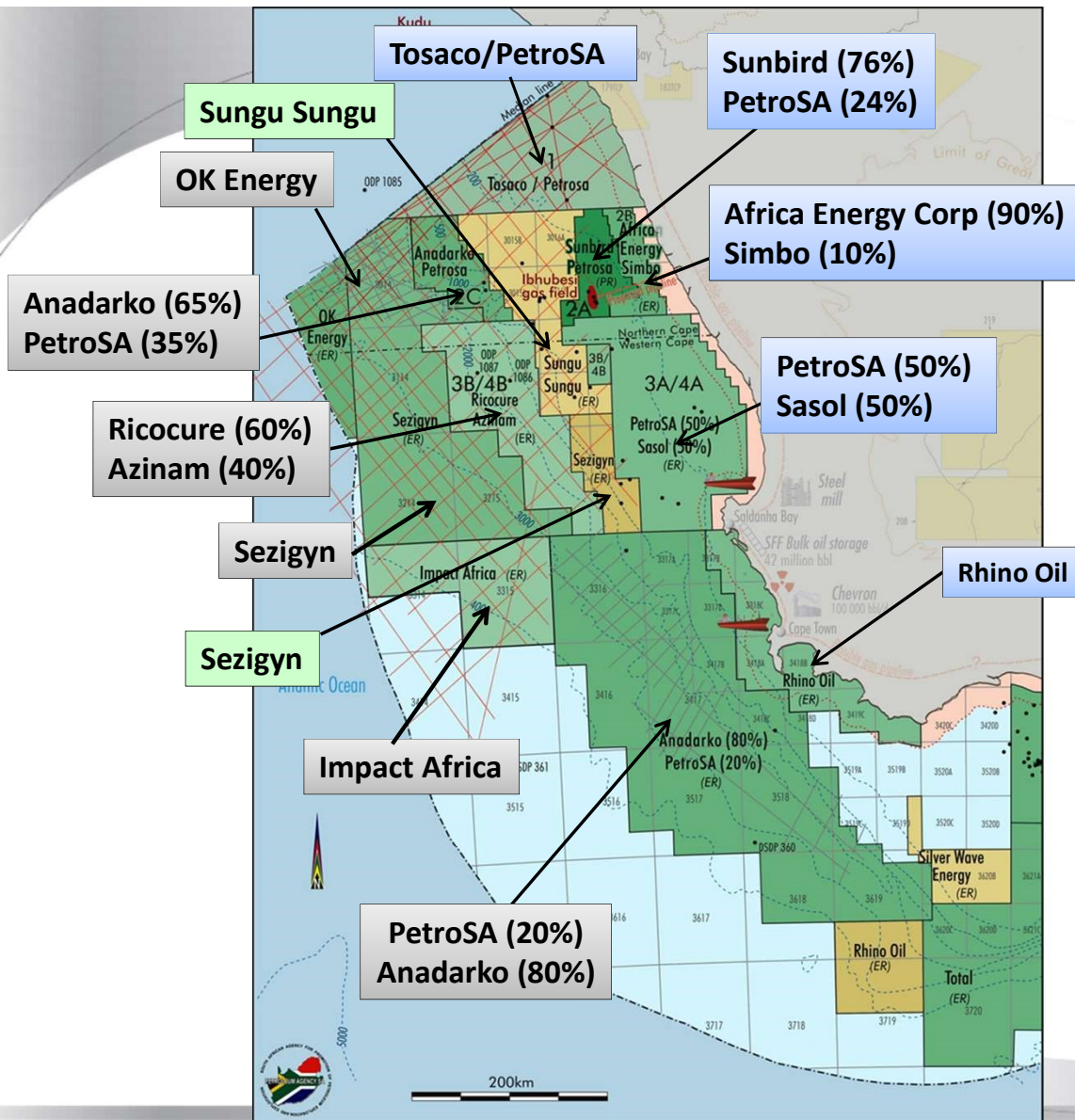
OFFSHORE APPLICATIONS	ONSHORE RIGHTS
10188G - Area	NEW RIGHTS GRANTED
10189G - Curro Marine Energy	01000G - Curro Gas
10190G - Curro Gas	01001G - Curro Gas 2
10191G - Curro Gas 2	01002G - Curro Gas 3
10192G - Curro Gas 3	01003G - Curro Gas 4
10193G - Curro Gas 4	01004G - Curro Gas 5
10194G - Curro Gas 5	01005G - Curro Gas 6
10195G - Curro Gas 6	01006G - Curro Gas 7
10196G - Curro Gas 7	01007G - Curro Gas 8
10197G - Curro Gas 8	01008G - Curro Gas 9
10198G - Curro Gas 9	01009G - Curro Gas 10
10199G - Curro Gas 10	01010G - Curro Gas 11
10200G - Curro Gas 11	01011G - Curro Gas 12
10201G - Curro Gas 12	01012G - Curro Gas 13
10202G - Curro Gas 13	01013G - Curro Gas 14
10203G - Curro Gas 14	01014G - Curro Gas 15
10204G - Curro Gas 15	01015G - Curro Gas 16
10205G - Curro Gas 16	01016G - Curro Gas 17
10206G - Curro Gas 17	01017G - Curro Gas 18
10207G - Curro Gas 18	01018G - Curro Gas 19
10208G - Curro Gas 19	01019G - Curro Gas 20
10209G - Curro Gas 20	01020G - Curro Gas 21
10210G - Curro Gas 21	01021G - Curro Gas 22
10211G - Curro Gas 22	01022G - Curro Gas 23
10212G - Curro Gas 23	01023G - Curro Gas 24
10213G - Curro Gas 24	01024G - Curro Gas 25
10214G - Curro Gas 25	01025G - Curro Gas 26
10215G - Curro Gas 26	01026G - Curro Gas 27
10216G - Curro Gas 27	01027G - Curro Gas 28
10217G - Curro Gas 28	01028G - Curro Gas 29
10218G - Curro Gas 29	01029G - Curro Gas 30
10219G - Curro Gas 30	01030G - Curro Gas 31
10220G - Curro Gas 31	01031G - Curro Gas 32
10221G - Curro Gas 32	01032G - Curro Gas 33
10222G - Curro Gas 33	01033G - Curro Gas 34
10223G - Curro Gas 34	01034G - Curro Gas 35
10224G - Curro Gas 35	01035G - Curro Gas 36
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10226G - Curro Gas 37	01037G - Curro Gas 38
10227G - Curro Gas 38	01038G - Curro Gas 39
10228G - Curro Gas 39	01039G - Curro Gas 40
10229G - Curro Gas 40	01040G - Curro Gas 41
10230G - Curro Gas 41	01041G - Curro Gas 42
10231G - Curro Gas 42	01042G - Curro Gas 43
10232G - Curro Gas 43	01043G - Curro Gas 44
10233G - Curro Gas 44	01044G - Curro Gas 45
10234G - Curro Gas 45	01045G - Curro Gas 46
10235G - Curro Gas 46	01046G - Curro Gas 47
10236G - Curro Gas 47	01047G - Curro Gas 48
10237G - Curro Gas 48	01048G - Curro Gas 49
10238G - Curro Gas 49	01049G - Curro Gas 50
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10255G - Curro Gas 66	01066G - Curro Gas 67
10256G - Curro Gas 67	01067G - Curro Gas 68
10257G - Curro Gas 68	01068G - Curro Gas 69
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10264G - Curro Gas 75	01075G - Curro Gas 76
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10270G - Curro Gas 81	01081G - Curro Gas 82
10271G - Curro Gas 82	01082G - Curro Gas 83
10272G - Curro Gas 83	01083G - Curro Gas 84
10273G - Curro Gas 84	01084G - Curro Gas 85
10274G - Curro Gas 85	01085G - Curro Gas 86
10275G - Curro Gas 86	01086G - Curro Gas 87
10276G - Curro Gas 87	01087G - Curro Gas 88
10277G - Curro Gas 88	01088G - Curro Gas 89
10278G - Curro Gas 89	01089G - Curro Gas 90
10279G - Curro Gas 90	01090G - Curro Gas 91
10280G - Curro Gas 91	01091G - Curro Gas 92
10281G - Curro Gas 92	01092G - Curro Gas 93
10282G - Curro Gas 93	01093G - Curro Gas 94
10283G - Curro Gas 94	01094G - Curro Gas 95
10284G - Curro Gas 95	01095G - Curro Gas 96
10285G - Curro Gas 96	01096G - Curro Gas 97
10286G - Curro Gas 97	01097G - Curro Gas 98
10287G - Curro Gas 98	01098G - Curro Gas 99
10288G - Curro Gas 99	01099G - Curro Gas 100



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 August 2019







WEST COAST

Rights and major operators

- **Shallow-water** – AEC, Simbo, Sasol, Rhino Oil, Tosaco
- Sunbird - **Production right** around Ibhubesi
- **Mid-Basin** – Sungu Sungu and Sezigyn
- **Deep-water** – Ricocure, Sezigyn, Impact
- **Southern basin** – Anadarko and PetroSA

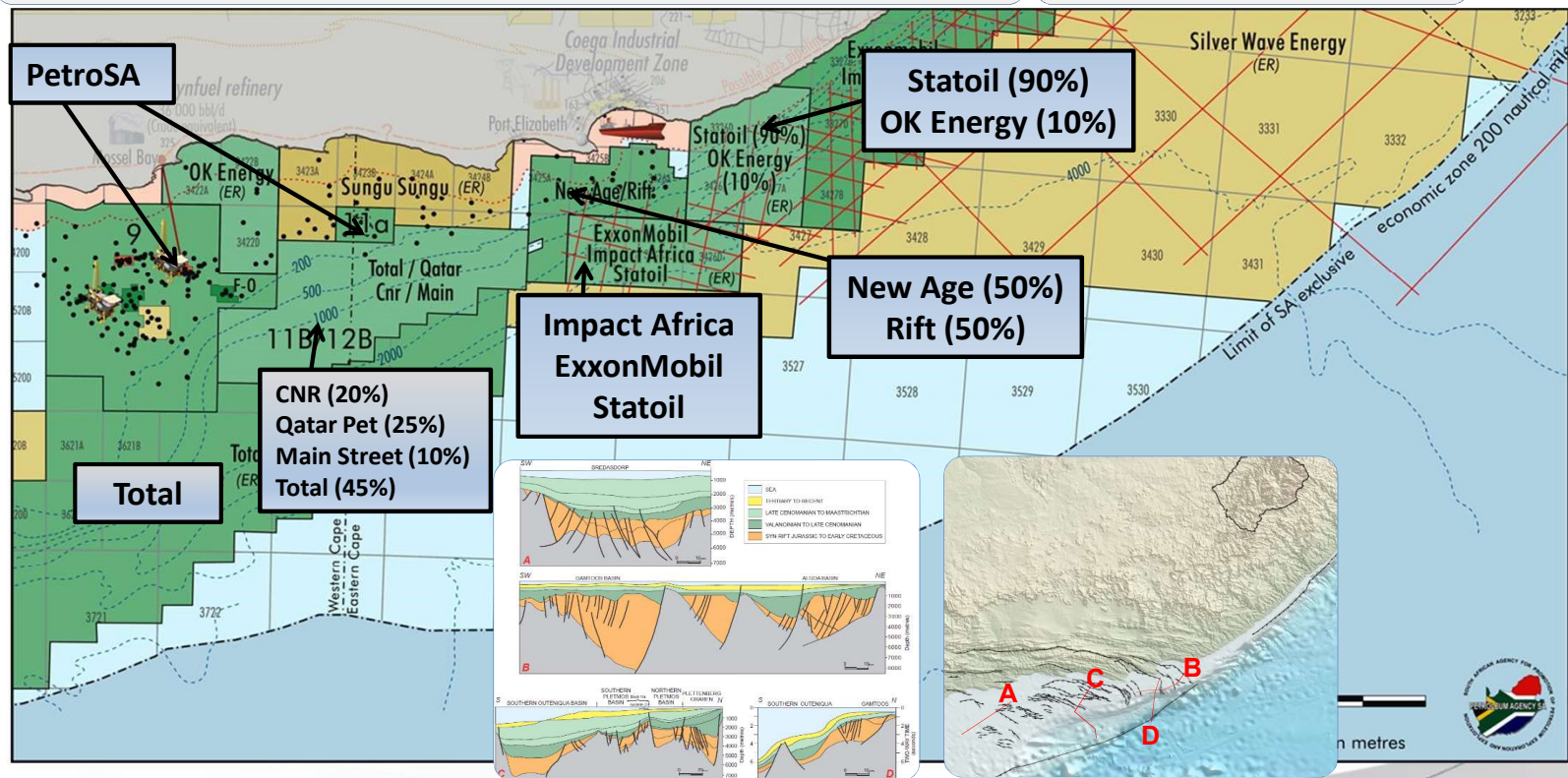
GREATER OUTENIQUA BASIN

Bredasdorp, Pletmos, Gamtoos, Algoa and Southern Outeniqua sub-basins

PetroSA, NewAge with Rift Petroleum, ExxonMobil with Impact, Sungu Sungu and OK Energy and Statoil in shallower waters.

Total, CNR, Silverwave in the deep water

SOUTH COAST



SOUTH COAST DEEPWATER DRILLING



Total 45% Qatar Petroleum 25% CNR 20% Main Street 10%
Drilling first 1/4 2019 – Odfjell's Deepsea Stavanger

Block 11B/12B :

Brulpadda Discovery

175 km offshore to the south east of Mossel Bay

Well: Brulpadda-1AX

Status: Successful

Reservoir: 57 m of gas condensate

Well depth: 3 633 m



EAST COAST

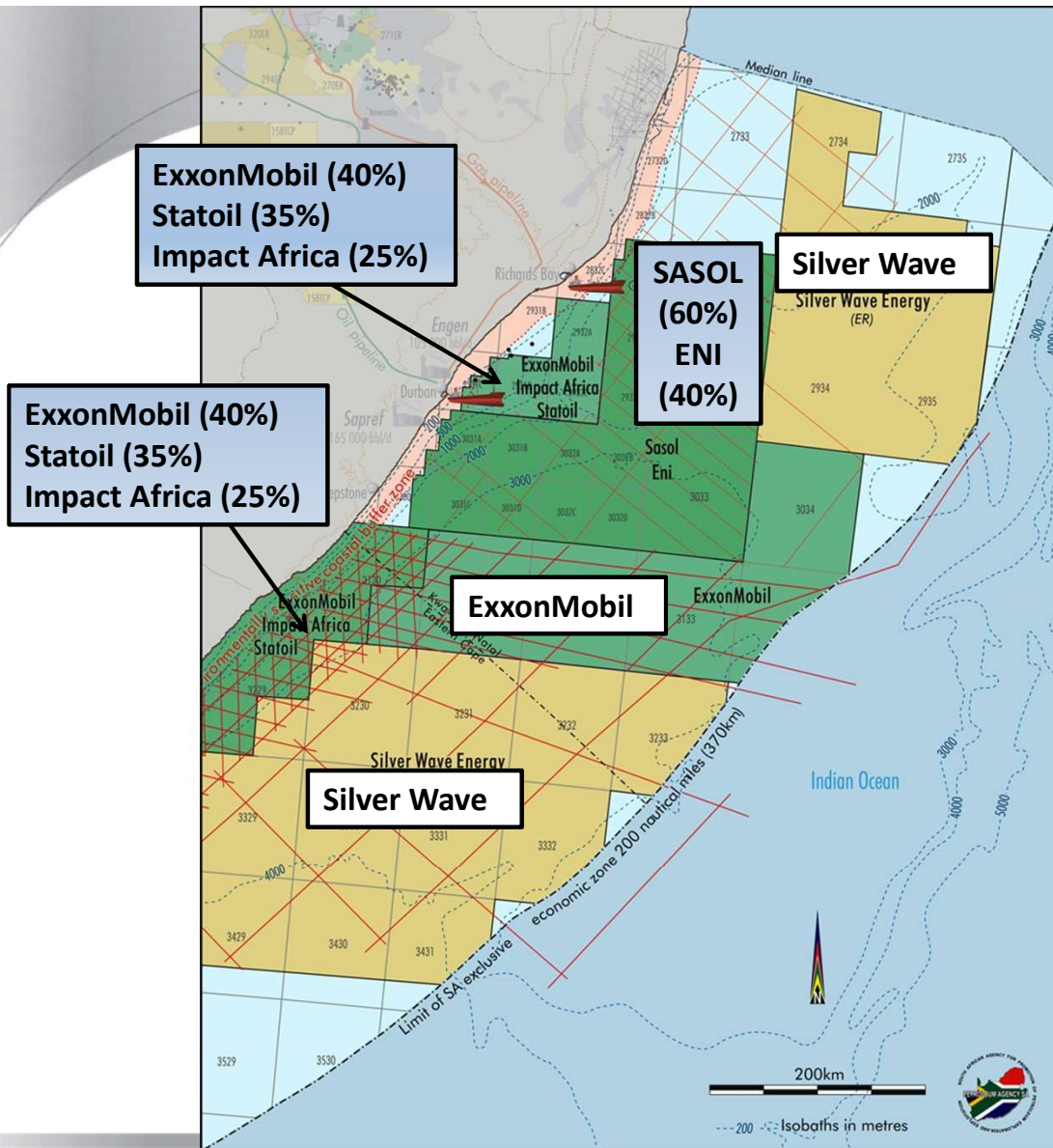
Rights and major operators

Shallower water –

ExxonMobil, Statoil and Impact - 2 ERs

Sasol and ENI – ER in **deep water**

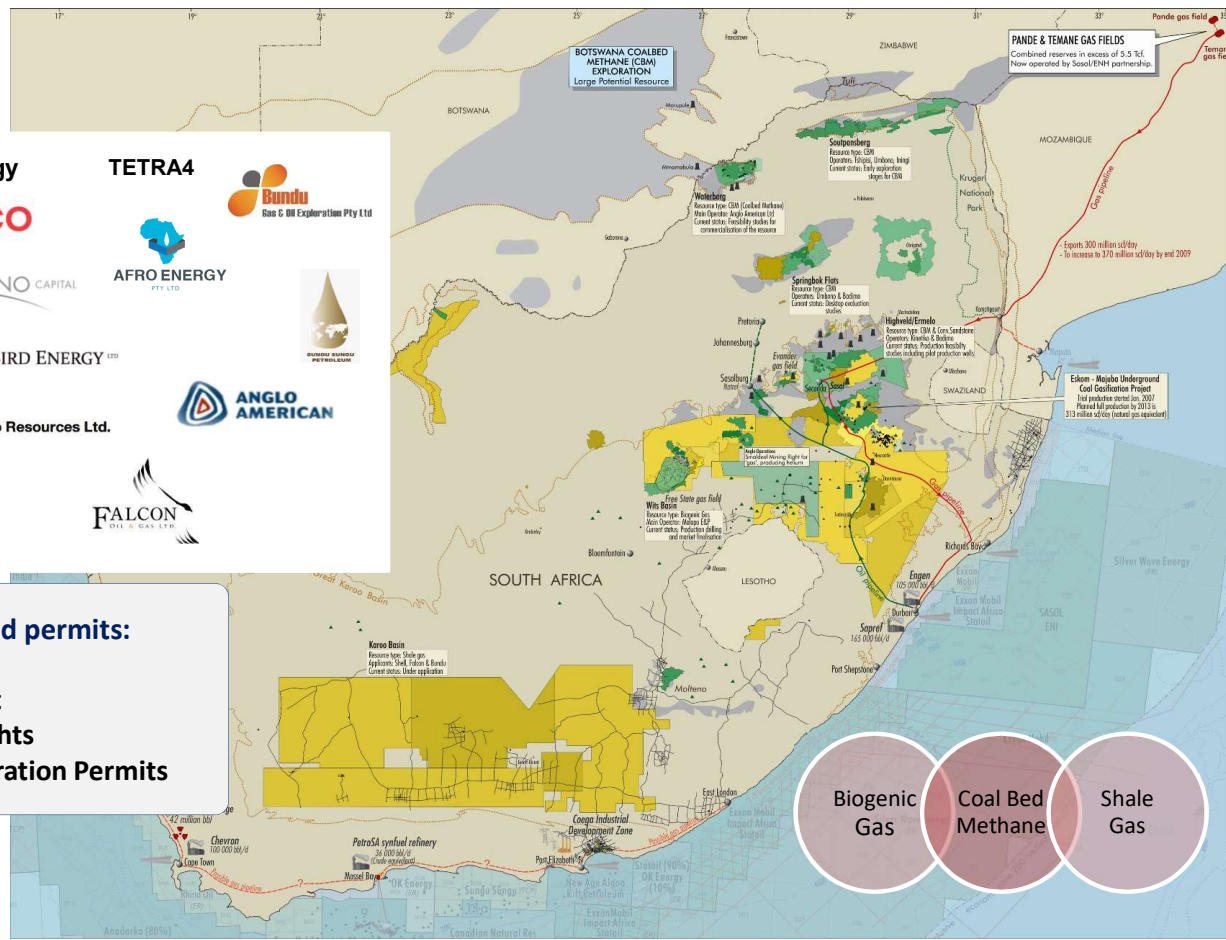
Silver Wave and ExxonMobil in the **ultra deep water**



ONSHORE SA - EXPLORATION ACTIVITY AND DEVELOPMENTS



CURRENT ONSHORE ACTIVITY

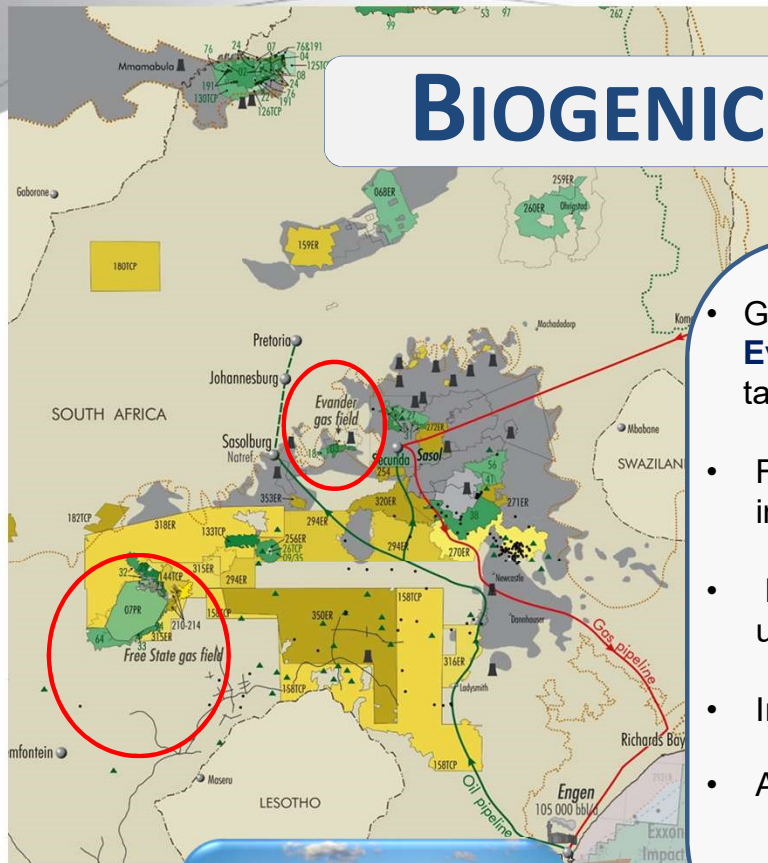


Onshore rights and permits:

- 1 Production Right
- 17 Exploration Rights
- 8 Technical Cooperation Permits



BIOGENIC GAS



- Gas shows were discovered in the **Free State** and **Evander goldfields** and are the most promising targets for biogenic gas at present
- First onshore natural gas **Production Right** awarded in September 2012
- Renergen's **TETRA4** - Compressed natural gas used to power Megabus local service
- Independent reserve valuation* of ZAR 6.6bn
- Assets in Virginia in the Free State - 2P 127.4 Bcf



1 well producing to plant – 11 further wells to be connected

RENERGEN

TETRA4

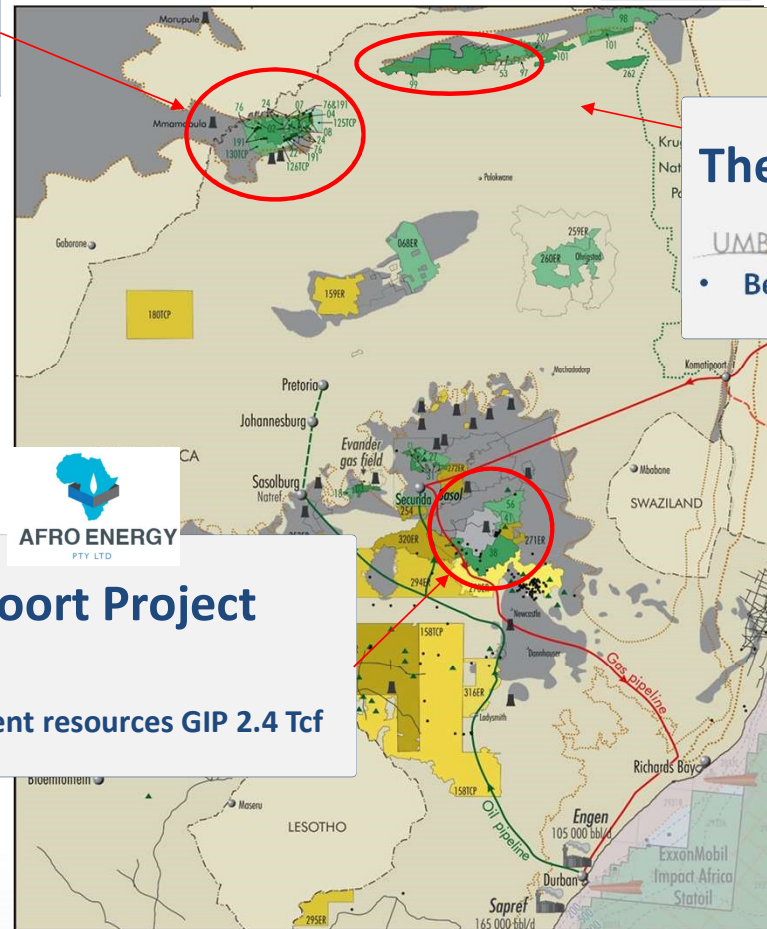


COALBED METHANE

Lephalale Project



- Recoverable 1 Tcf



The Mopane Project



- Best Estimate GIP of 1.9 Tcf



Amersfoort Project

- Contingent resources GIP 2.4 Tcf



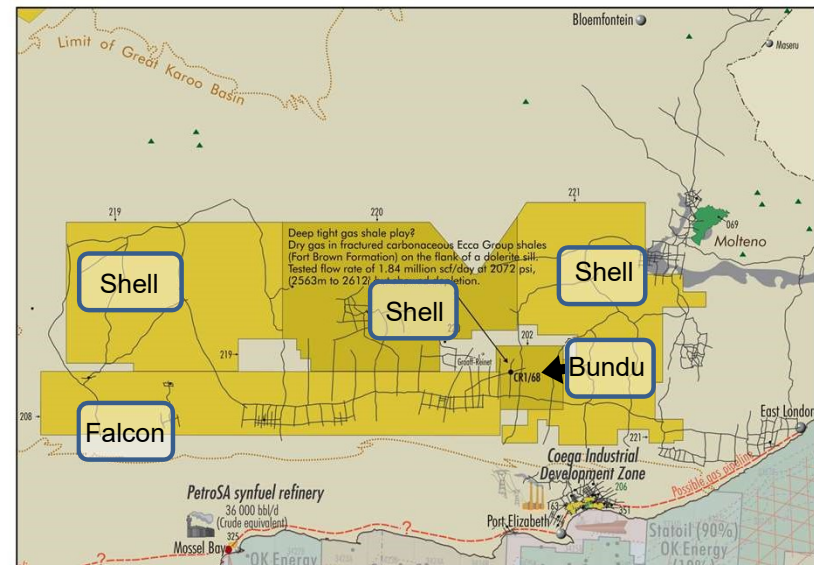
SHALE GAS

Play fairway in southern part of basin

EIA: reporting 370 Tcf (2015)
Petroleum Agency SA's conservative
Previous Best estimate 36 Tcf
recoverable (Whitehill only)

Revised to **205 Tcf** recoverable

- All target formations
- Additional legacy data – prospective area increased 3 fold
- Estimates now include adsorbed as well as free gas
- Detailed basin modelling



OPEN ACREAGE

OPEN ACREAGE

Restriction on applications
 As of the 28th June 2018, all new applications for Technical Cooperation be by invitation until further notice.
These effects:
 • All acreage, both onshore and offshore
It does not affect:
 • Reconnaissance permits - i.e. spec surveys/multi-client surveys
 • Applications made before the 28th June 2018
 • Current permit and right holders' exclusive rights to apply for exploration

Mineral and Petroleum Resources Development Act, No.28 of 2002.
Role of Petroleum Agency SA
 Under section 71 of the above Act, Petroleum Agency SA has been appointed the designated Agency, with the following responsibilities:
 • Promotion and regulation of exploration and production on and offshore
 • Review applications, evaluate and recommend the award of permits and rights
 • Review, evaluate and recommend approval of EMRs
 • Monitor compliance of license conditions
 • Monitor and advise on the national petroleum exploration and production database
 • Acquire reconnaissance data
 • Collect all prescribed fees
Permits and rights
 The above Act defines the following permits and rights:
 • Reconnaissance Permit - 12 months, non-exclusive
 • Technical Cooperation Permit - 12 months, exclusive desk-top study, exclusive right to apply for Exploration Right
 • Exploration Right - exclusive, transferable, 3 years, renewable for a maximum of 3 periods of 2 years each
 • Production Right - exclusive, transferable, 30 years, renewable

PANDE & TEMANE GAS FIELDS
 Combined reserves in excess of 5.5 Tcf
 Now operated by Sasol/ENH partnership

Open 300 million of dry gas by 2009
 to increase to 370 million of dry gas by end 2009

ONSHORE APPLICATIONS (Date Issued)	ONSHORE RIGHTS
1188FC - Alcoa	NEW RIGHTS GRANTED
1201FC - Crown Energy	PRODUCTION RIGHT
1202FC - Shell	ONSHORE OPEN ACREAGE
1203FC - Shell	ONSHORE OPEN ACREAGE
1204FC - Shell	ONSHORE OPEN ACREAGE
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1300FC - Shell	ONSHORE OPEN ACREAGE

KUDU GAS FIELD
 Namcor 100%
 Discovered in 1974 by a Chevron / Repert / Foster consortium. The reservoir comprises Devonian Early Carboniferous median sandstones with average porosities up to 22% at 4400m.

TOSACO / PETROSA (TCPC)
 Prospects/fields mapped in the drift sequence

AFRICAN ENERGY CORP (90%) SIMBO (10%)
 2D seismic data acquired. Mapping search prospects

SUNSHINE (Operator) (78%) PETROSA (22%)
 2D seismic data acquired. Mapping search prospects

ANADARKO (65%) PETROSA (35%)
 OK Energy

IBHUBESI GAS FIELD
 Ibhubesi gas field comprises fluvial type channels and lobes of Albian to early Cretaceous age. Currently, this production right is under a Gas Market Development Plan with an Integrated Field Development Plan (IFDP) ongoing.

SUNGU-SUNGU Petroleum (100%)
 Currently evaluating prospectivity in the drift sequence

ANADARKO (Operator) (80%) PETROSA (20%)
 OK Energy

E-CE GAS FIELD (PetroSA 100%)
 Originally the Sabbe oil field, gas is now being produced from this Albian age deep marine channel sandstone reservoir to supplement the feed to the Mossel Bay plant.

UNSOUKVIL VELD (PetroSA 100%)
 Submarine fan deposits of Albian Early Cretaceous age. Currently not in production.

ANADARKO (Operator) (80%) PETROSA (20%)
 OK Energy

OK Energy

OK Energy

OK Energy

OK Energy

OK Energy

- ONSHORE / OFFSHORE KEY**
- PETROLEUM EXPLORATION WELL
 - OIL SHOWS
 - COAL FIRED POWER STATION
 - GAS TURBINE POWER STATION
 - POSSIBLE FUTURE GAS PIPELINE
 - SERVICED LINES
 - KOBERGER NUCLEAR POWER PLANT
 - COAL FIELD
 - ONSHORE OPEN ACREAGE
 - OFFSHORE OPEN ACREAGE
 - AREAS UNDER APPLICATION
 - AREAS AWAITING RIGHTS CONVERSION
 - TECHNICAL COOPERATION PERMIT
 - EXPLORATION RIGHT
 - PRODUCTION RIGHT
 - MINING LEASE (OAL) - Block 9
 - MINING LEASE (OAS) - Block 9

ANADARKO (Operator) (80%) PETROSA (20%)
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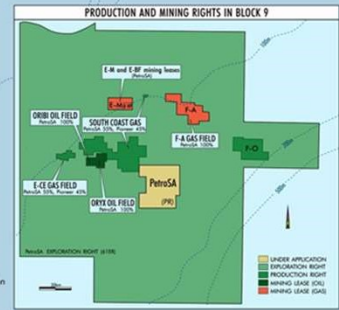
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 August 2019



OIL AND GAS BILL

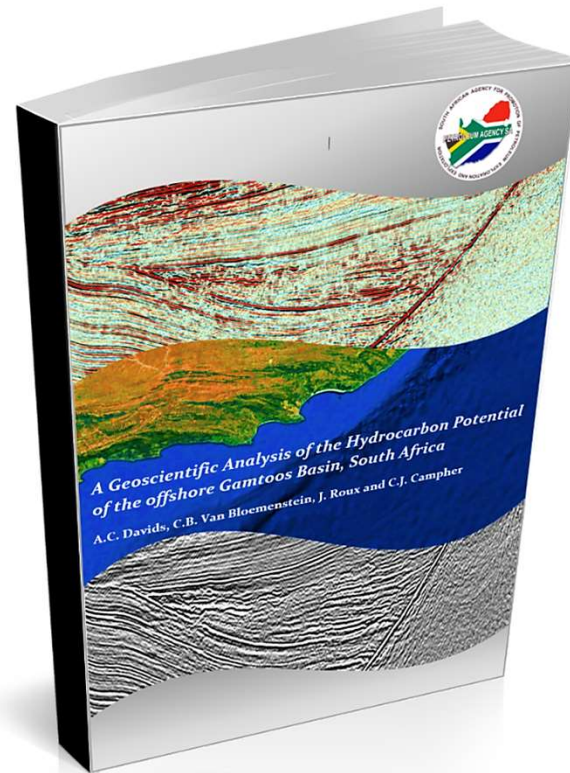
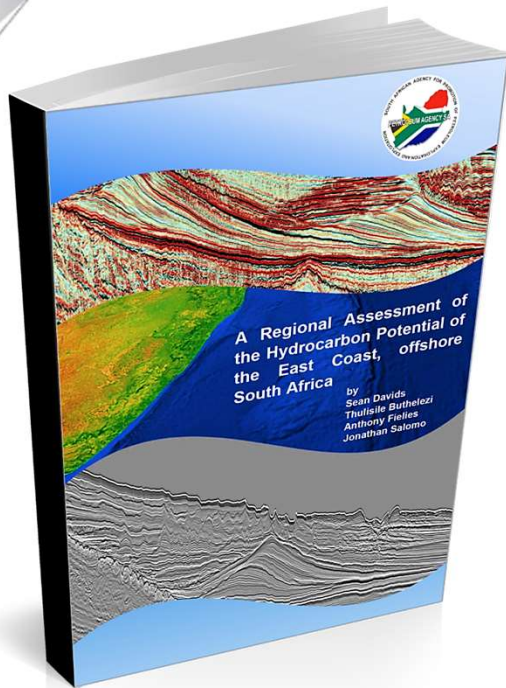
- Current Oil and Gas including minerals are governed by the Mineral and Petroleum Resources Development Act (MPRDA), 2002
- The Agency is currently involved in the process of drafting separate Oil and Gas Legislation (Process currently ongoing)

NEW DEVELOPMENTS

- Moratorium: No new applications
- Shift in licensing regime – allowing **all new licensing by invitation**
(Does not affect the rights of current holders – eg TCP to ER, renewals, ER to Production)

PUBLICATIONS FOR PURCHASE

PUBLICATIONS



OFFSHORE

Studies: East Coast Basin Analysis and Gamtoos Basin Analysis

2013 – 2017

Regional Basin Analysis Study

Purpose of Study: to fully understand basin development, architecture and its petroleum potential (from an Agency perspective)

Output: 2 Publications

Available for purchase



PUBLICATIONS

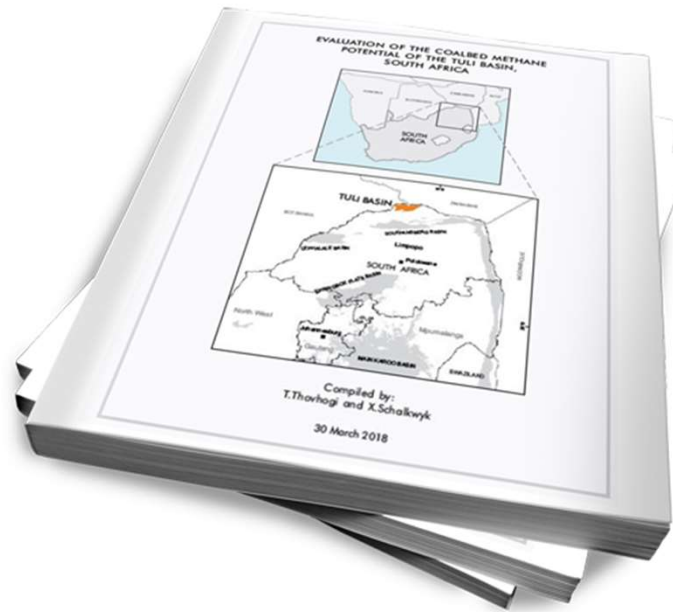
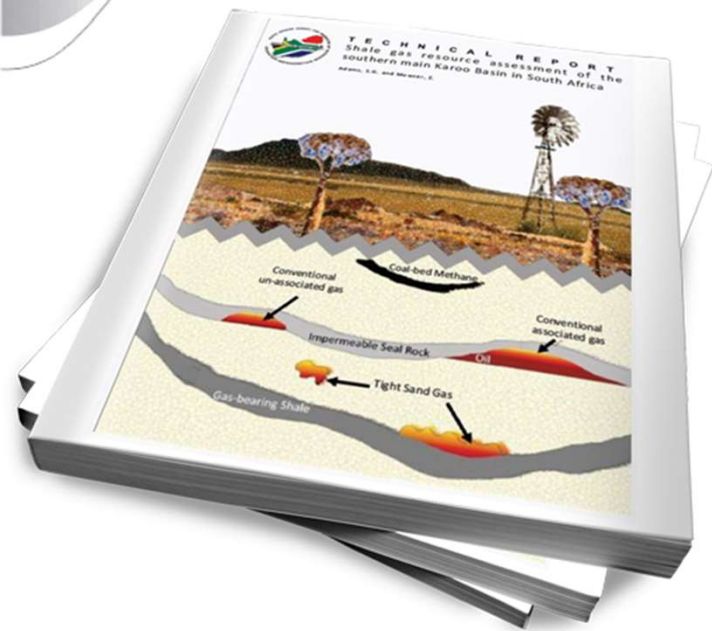
ONSHORE

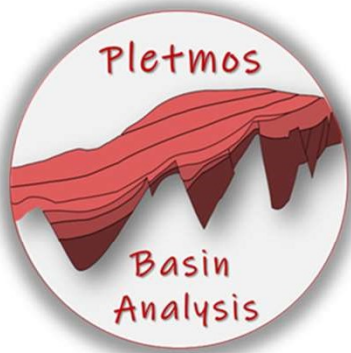
Studies: Shale Gas and Coalbed Methane

Purpose of Study: to assess the petroleum potential for the relevant basin

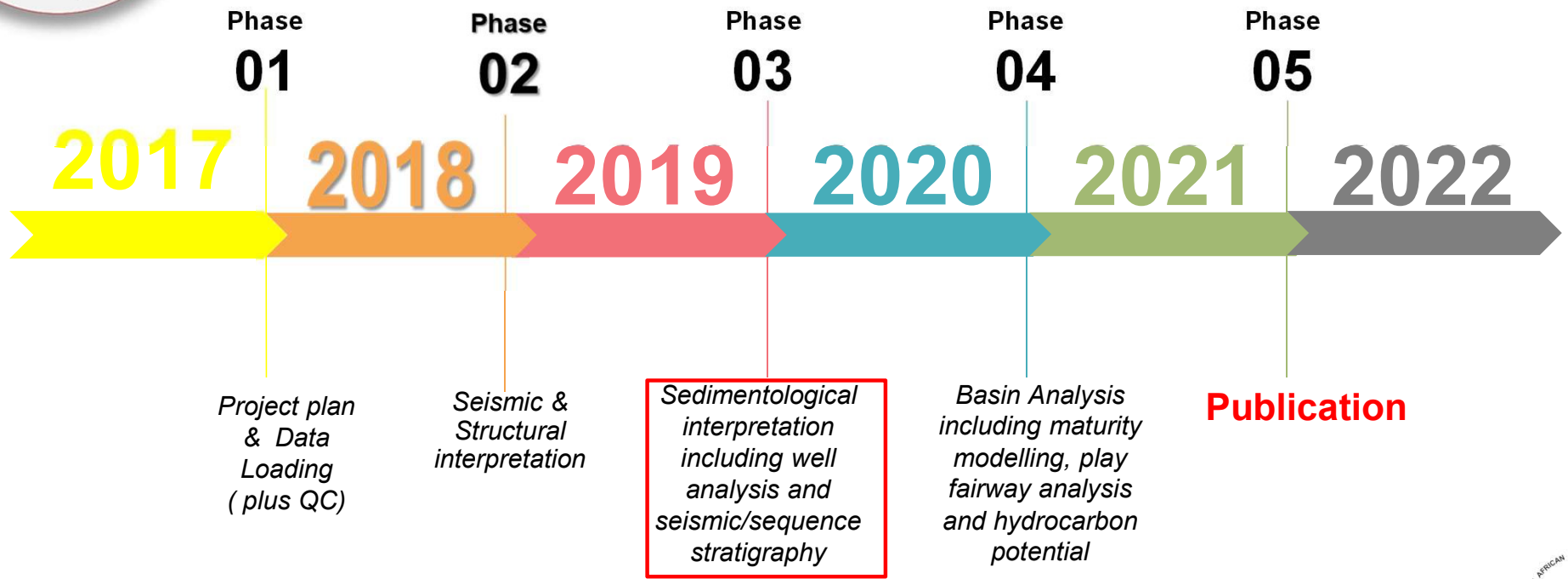
Output: 2 Publications

Available for purchase





CURRENT STUDIES: PLETMOS BASIN ANALYSIS



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