



Ulysses
PETROLEUM MANAGEMENT
GLOBAL OIL AND GAS ADVISORY

Brazil's E&P Landscape

Petrobras Disposals to Pre-Salt Giants:
Opportunities for Independents to
Super-Majors

A bumpy ride since breaking the Petrobras monopoly 20 years ago



First pre-salt discoveries 2005-6

“Nosso óleo”

Round 9 retractions & retreat
of majors

Global financial crisis

Political upheavals – Rousseff/Temer/Bolsonaro

Licence rounds reinvigorated/local content dropped

Pre-salt rounds biannual

Petrobras divestments at last gain traction

1999-2009

2010-
2015

2016-
2019

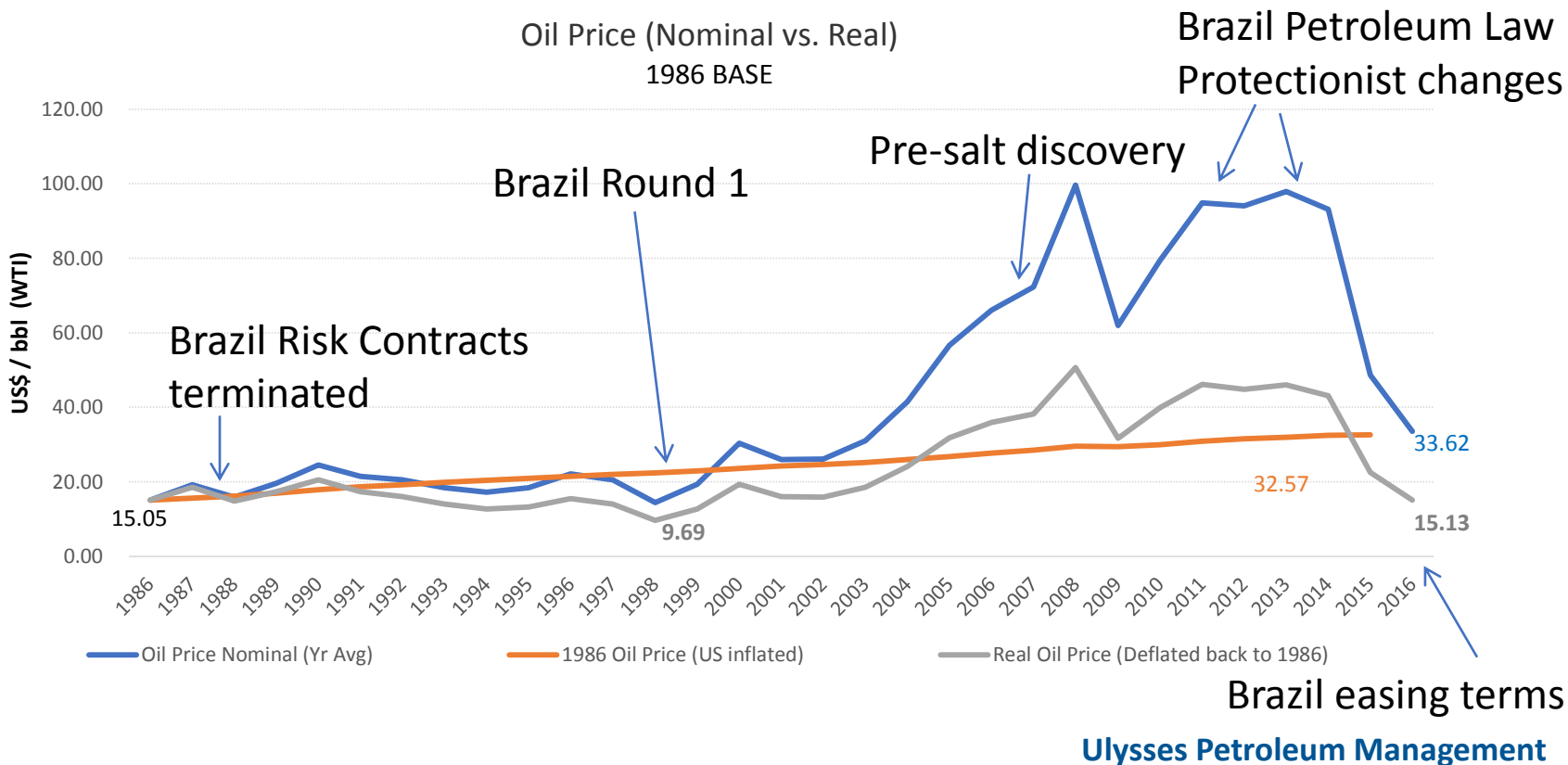
Petrobras Investment & management challenges

PSC & CO introduced in pre-salt polygon

Corruption & loss of focus

First pre-salt ‘round’ despite Lava Jato

Brazil E&P: 30 year perspective

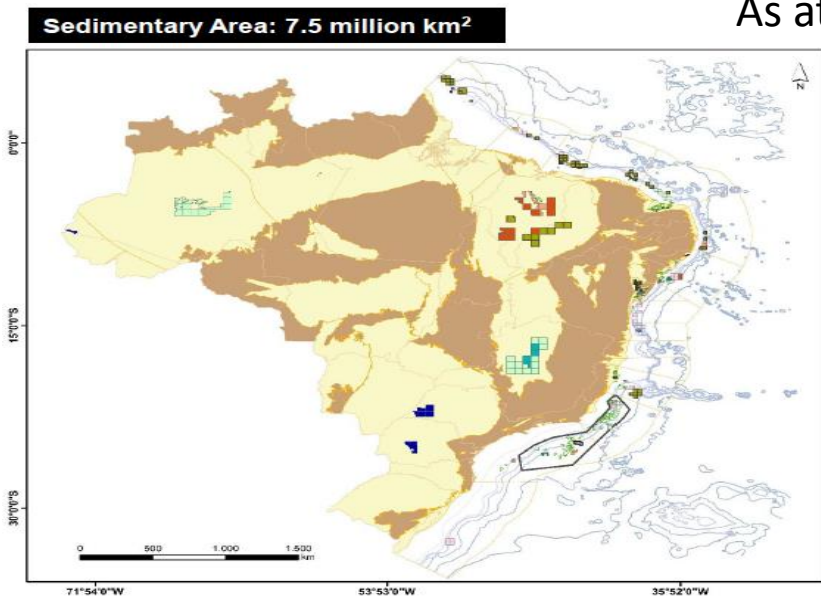


From the ANP's pre-Round 14 Presentation



Current Scenario

As at 27th September 2017



Area under concession
~ 260,000 km²

311 blocks

434 producing fields

Production (May, 2017)

Oil 2.7 million barrels/d

Gas 105 million m³/d

Proven Reserves (Dec, 2016)

Oil 12.7 billion barrels

Gas 378 billion m³

Brazil Open for E&P Business following.....



- Dramatic political & fiscal changes
 - Corruption, impeachment, imprisonment
 - Lava jato & banking crisis
 - Right-wing populism & 'Tropical Trump' Bolsonaro
- Pre-salt discovery & development
 - Petrobras lobbying
 - Political polygon
 - Production Sharing Contracts
 - Cessao Onerosa – only MWP
 - No signature bonus
 - No SPT
 - No R&D tax

Curse of the pre-salt 'gift from God'



November 2009 Euphoria



September 2019 Lava Jato legacy

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Bidding Round Calendar (Source: ANP)



	Bidding Round	Focus
2017	14 th Bidding Round	East Margin
	2 nd Production Sharing Bidding Round	Unitizable Areas (Carcara, Gato do Mato, Sapinho and Tartaruga Verde)
	3 rd Production Sharing Bidding Round	Peroba, Pau Brasil and Alto de Cabo Frio
	4 th Marginal Fields Bidding Round	Marginal oil and gas accumulations in mature basins
2018	15 th Bidding Round	Equatorial Margin
	4 th Production Sharing Bidding Round	Saturno, Tres Marias, Uraipuru and blocks in Campos Basin
	5 th Marginal Fields Bidding Round	Marginal oil and gas accumulations in mature basins
2019	16 th Bidding Round	East Margin
	5 th Production Sharing Bidding Round	Aram, SE de Lula, Sul e SW de Jupiter, Bumerangue
	6 th Marginal Fields Bidding Round	Marginal oil and gas accumulations in mature basins



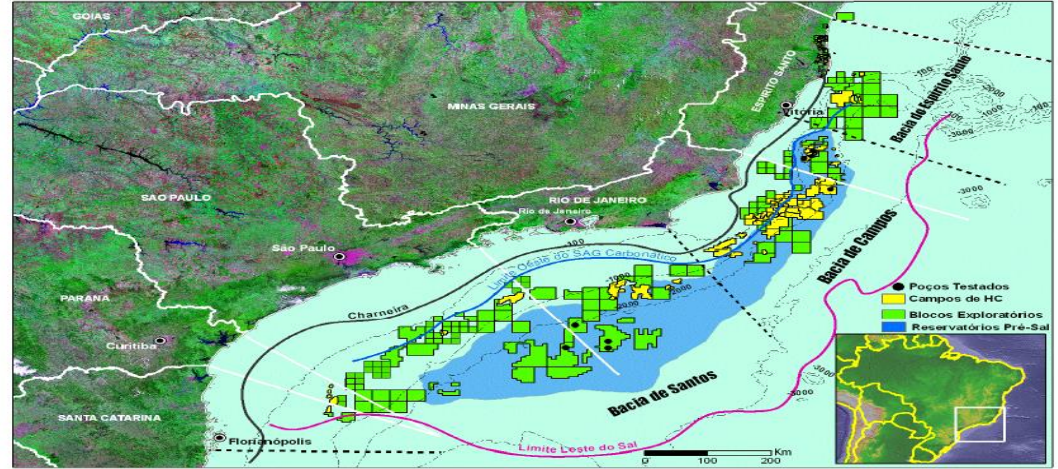
Recent Bidding Round Results

- 13th Round – unlucky for some!
 - Only 14% of offered blocks sold, huge flop!
 - ANP ‘softened’ qualification process adding risk
 - 7th October 2015 oil price crash
- 14th Round
 - Total signature bonus \$R 3.8 B (~U.S.\$1 B)
 - 27th September 2017
- 15th Round
 - Total signature bonus \$R 18 B (U.S.\$4.5 B) a record!
 - 29th March 2018
- 16th Round
 - Total signature bonus \$R 9 B (U.S.\$2.25)
 - 10th October 2019

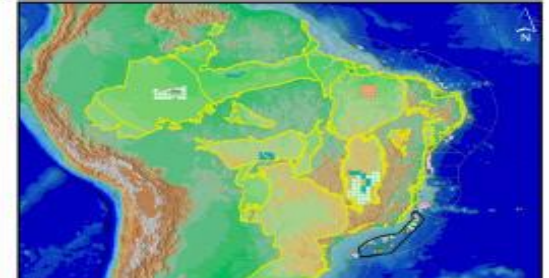
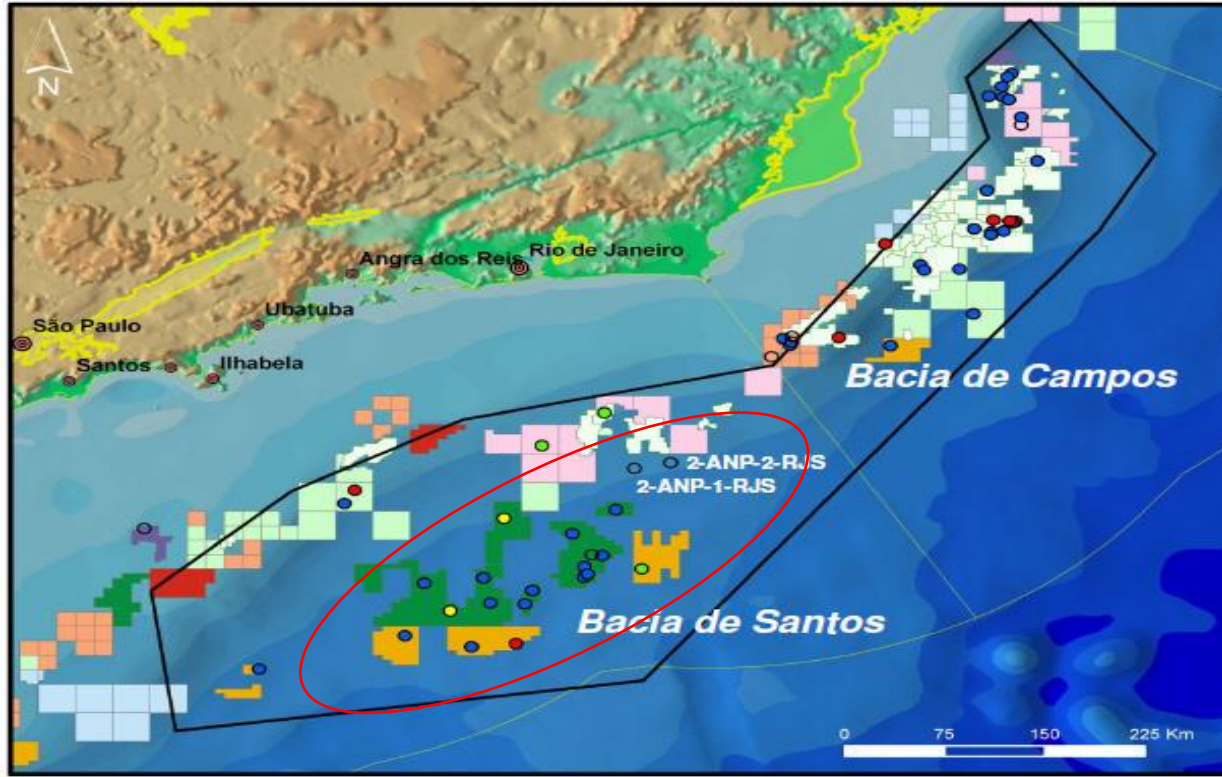
Pre-Salt Play Fairway: Santos & Campos Basins



- Huge potential resource
- High costs & falling oil price
- Maximise DFI or 'nationalise'?
- Stick to tried, tested & adequate Concession Agreement or introduce PSCs?
- Cede 5 B boe to Petrobras via Cessao Onerosa
- Construct a political polygon without considering post-salt fields & prospects
- Result:
 - **JABUTICABA!**



GCA's 2010 Pre-Salt Review & Evaluation of the Cessao Onerosa Discoveries & Prospects for the ANP



Discoveries

- Franco – renamed Buzios
- Tupi – renamed Lula
- Jupiter
- Iara – renamed Itapu, Atapu, Sururu etc.

Prospects

- Libra
- NE Tupi
- Sul de Guara
- Peroba
- Florim
- Pau Brazil

E&P Opportunities: An Independent's view



CHANGING MARKET OPPORTUNITY

REGULATOR INCENTIVES

Increase Independents activity,
Improve mature field recovery,
Reduced royalties.

Permanent Round Offerings

PBR SALES PROCESS

Petrobras current sales process
of ~25,000 bopd production

Stated intention is to sell all
Onshore Fields

PETROBRAS RESTRUCTURING

Offshore pre-salt focus,
Debt reduction,
Corruption scandal, More
disciplined capital allocation

ACCESS TO INFRASTRUCTURE

Access to installed infrastructure
and improved negotiating strength
for oil sales terms

Petrobras Refining Monopoly
being broken

IMPROVED SUPPLY CHAIN

More operators, more
suppliers, improved market
stability

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Petro

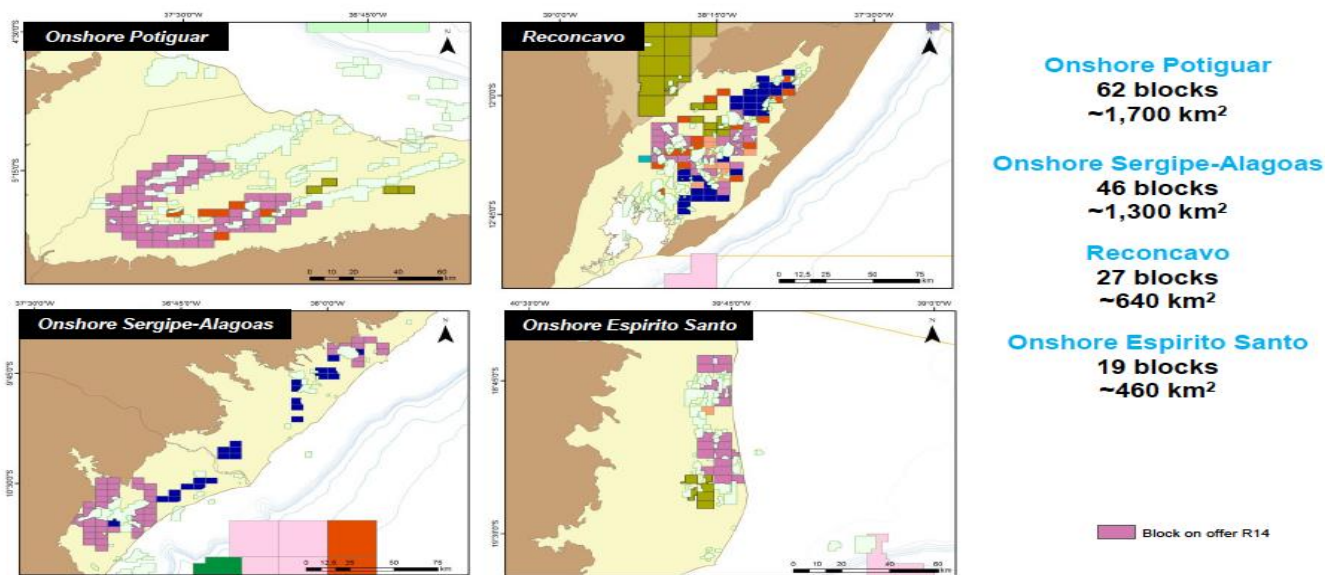
Source: Pindorama Energy

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Independent Onshore Focus



Onshore Mature Basins



Source: Pindorama Energy

Ulysses Petroleum Management

Independent Opportunity View



THE SIZE OF THE MARKET

BRAZIL ONSHORE QUICK FACTS

6 Oil
Producing
Basins

115,000 bopd
Total Onshore Oil Production

~200
Oil Producing Fields

Only
~20
Independent Onshore
Oil Producers

2,500 bopd
2nd Largest Onshore Producer
Average independent flows 230 bopd

Two recent asset sales by Petrobras are pending approval by ANP.
These asset sales will significantly increase independent production.

PetroReconcavo – Riacho da Forquilha Cluster - ~8,000 bopd
3R – Macau Cluster - ~5,500 bopd (New operator entering market)

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Petro

Source: Pindorama Energy

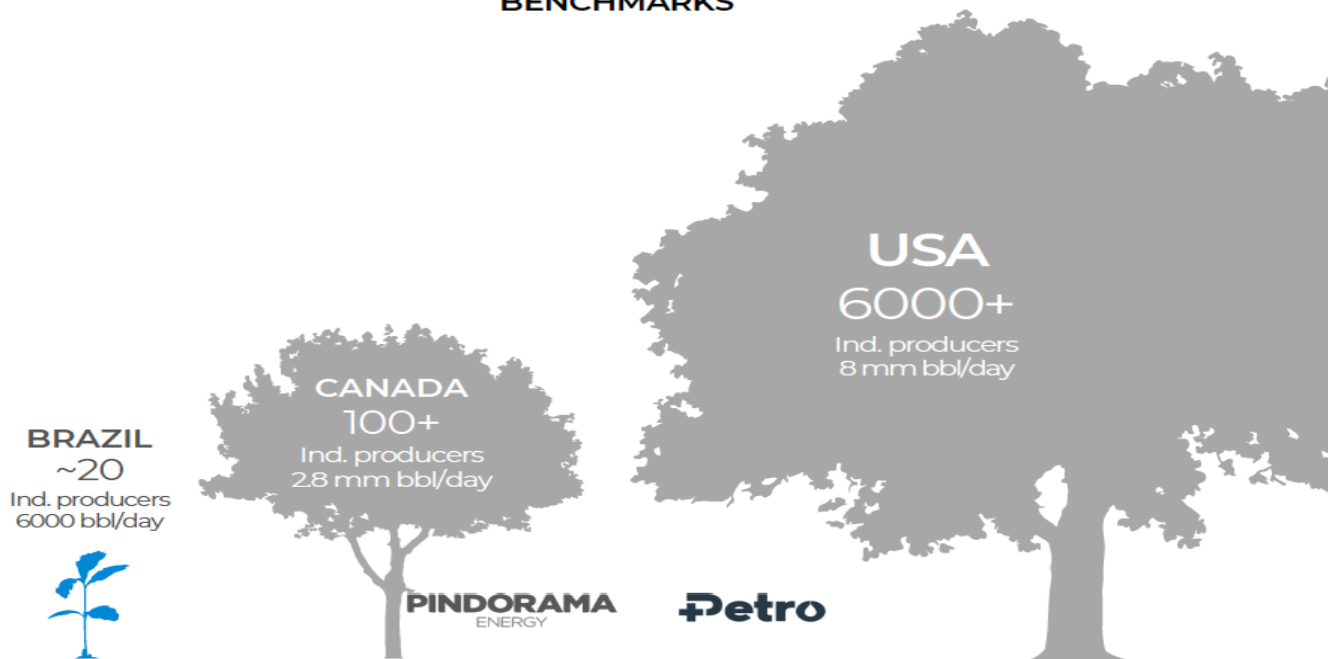
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Independent View of Growth Potential



THE SIZE OF THE MARKET

BENCHMARKS



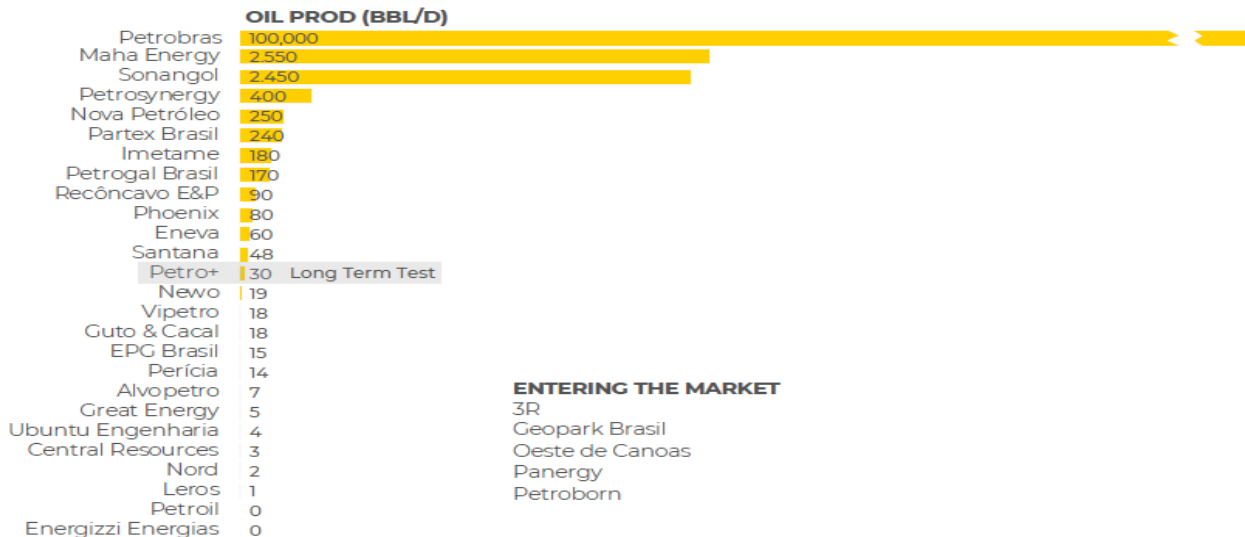
Source: Pindorama Energy

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Onshore Producers



COMPETITORS AND NEW ENTRANTS



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Source: Pindorama Energy

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Onshore Production Growth Potential



BRAZIL ONSHORE OVERVIEW

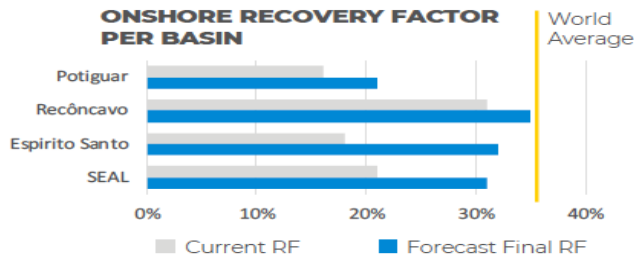
7%
of total identified
basin area under
contract

Source – National
Petroleum Agency
(ANP) Public Data

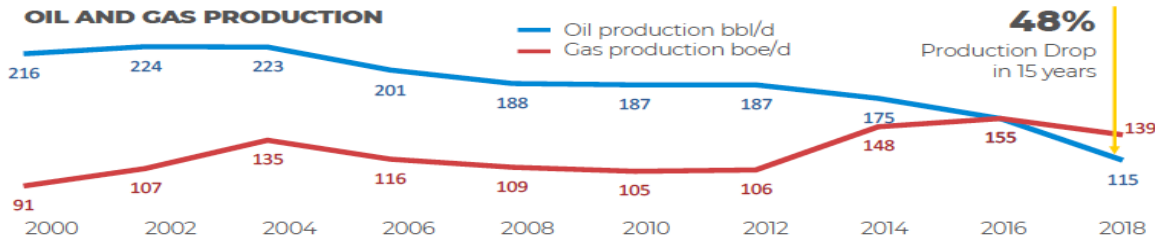
~23k
Wells drilled in the
history of Onshore
Brasil

Compared to
~25k
Wells/yr In
United States

ONSHORE RECOVERY FACTOR PER BASIN



OIL AND GAS PRODUCTION



PINDORAMA
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Petro

Source: Pindorama Energy









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Equity and Debt Finance Available with RBL to follow



WHO IS FINANCING THE GAME

INSTITUTION

 Morgan Stanley	<ul style="list-style-type: none">• Financed Local Company PetroReconcavo• Open to acquire debt of new players
 Goldman Sachs	<ul style="list-style-type: none">• Offered debt to 3R Petroleum onshore and Ouro Preto in offshore assets• Open to acquire debt of new players
 APOLLO	<ul style="list-style-type: none">• Potentially involved in backing of Starboard and 3R.• Not directly funding any Company yet.
 BTGP Actual	<ul style="list-style-type: none">• Support deal of 3R with Debt• Support deal of 3R with equity
 NORGES BANK INVESTMENT MANAGEMENT	<ul style="list-style-type: none">• Supported the acquisition of a number of offshore fields in Brazil
 EIG GLOBAL ENERGY PARTNERS	<ul style="list-style-type: none">• Backed bidder in ~\$800m offer for offshore assets Pampo/Enchova and were unsuccessful, evaluating more options.
 WARBURG PINCUS	<ul style="list-style-type: none">• Equity backing of Trident Energy in successful bid for Pampo/Enchova Offshore Package
 YORKTOWN PARTNERS LLC	<ul style="list-style-type: none">• Equity Backing of PetroReconcavo in all asset deals

PINDORAMA
ENERGY

Petro

Petrobras shallow offshore teaser example: Polo Pargo



Oportunidade de Investimento em Ativos de Águas Rasas no Brasil

Polo Pargo
Julho de 2017

BR PETROBRAS

Bank of America Merrill Lynch

Oportunidades de Investimento em Ativos de Águas Rasas no Brasil

Visão Geral

Petróleo Brasileiro S.A. ("Petrobras") está realizando um processo (o "Processo") para vender a totalidade de sua participação (WI) em certos ativos de águas rasas localizados na Bacia de Campos no Brasil (a "Transação Potencial"). Os ativos foram compilados em um polo (o "Polo") conforme descrito na tabela a seguir:

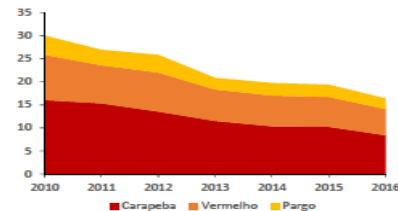
Polo	Bacia	Campos	Profundidade (m)	Participação da Petrobras	Produção 2017 1º Sem (boe/d)	% Óleo
Pargo	Campos	Carapeba, Vermelho, Pargo	80-100	100%	13.282	98%

- O Polo está localizado em águas rasas a uma distância de ~60 km da costa, e com profundidade de reservatório entre 2.700 e 3.750m
- Atualmente produzindo com 57 poços e 7 plataformas fixas, de onde petróleo e gás são transportados para uma estação de processamento e separação onshore (Cabiúnas) através da plataforma PGP-1
- Algumas oportunidades exploratórias identificadas
- Término da concessão em 2025, com potencial para ser estendido

Mapa da localização



Produção histórica (kboe/d)



Destaques

- Ativos em produção e com histórico comprovado, com a produção iniciada no final da década de 80
- Termos fiscais atraentes – concessões da Rodada Zero, sem nenhum requerimento de conteúdo local
- Potencial cessionário terá total gestão sobre os custos do ativo, dado que lhe será transferido 100% da WI com operação

Opportunity Spread: Bidding Rounds

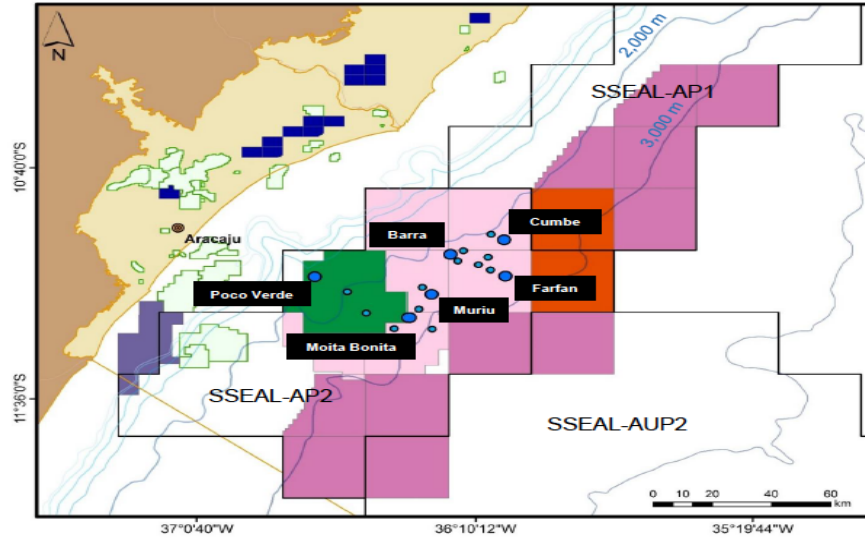


- Ongoing Exploration Licence Bidding Rounds
 - 2 per annum, open & transparent from Round 1 to 16
 - Rounds 17, 18, 19, 20 slated for 2020-21
- PSC or 'Pre-Salt' Rounds
 - 5 rounds completed, 1st 2013*, 2nd - 5th (2017-19)
 - 6th round slated for 7th November 2019
 - 2 per annum planned
 - Bidding element – 'profit oil'
- Cessao Onerosa or 'Surplus Production' Round
 - Slated for 6th November 2019
 - Pre-determined Signature Bonus of U.S.\$27 billion!
 - Bidding element – 'profit oil'
- 1st Permanent Offer Initiative
 - September 2019
 - ExxonMobil JV – 2 offshore Sergipe-Alagoas blocks awarded
 - Brazilian independents & GeoPark acquired blocks in Parnaiba, Potiguar, Espirito Santo, Reconcavo & Sergipe-Alagoas Basins

Example from 14th Round



Sergipe-Alagoas Basin



11 Blocks on Offer
Total Area ~7,700 km²
Area per block ~760 km²
Ultra-deep water
(water table > 2,000 m)

Efficient petroleum system
(Albian-Turonian marine source
rock and Upper Cretaceous
turbidite reservoirs);

In the last few years light oil and
condensate discoveries were
made in deep and ultra-deep
water.

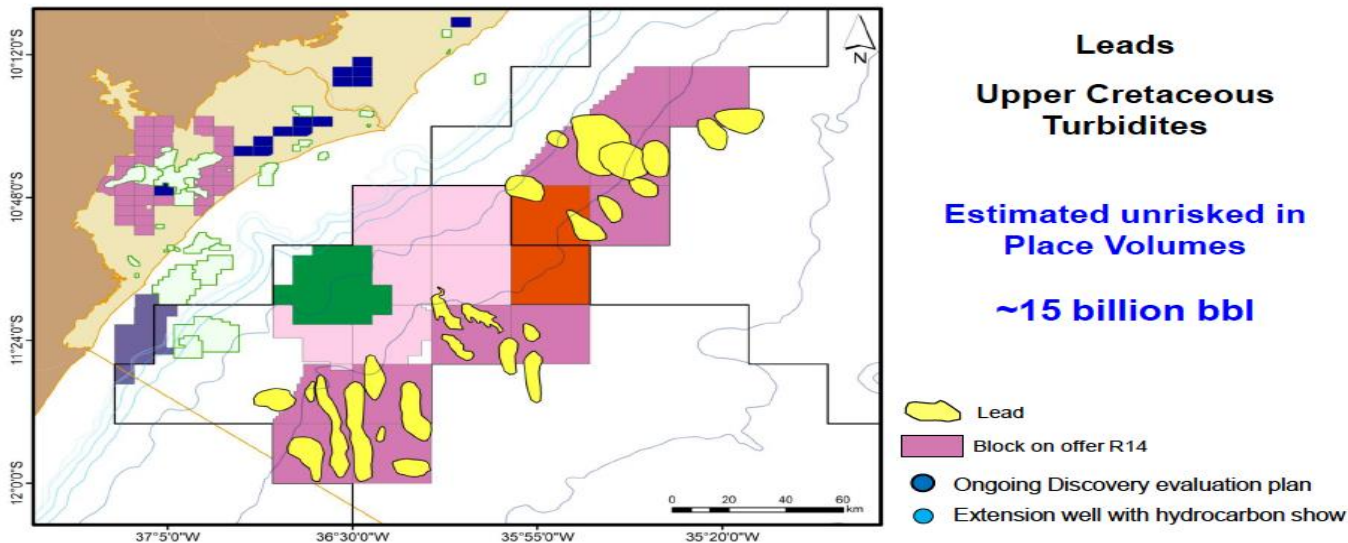
Potential for similar discoveries.

- Ongoing Discovery evaluation plan
- Extension well with hydrocarbon show
- Block on offer R14

Deep Water post-salt potential



Sergipe-Alagoas Basin



Petrobras disposal overview



- Petrobras divestment target: U.S.\$26.9 B by 2023
- ‘Aligned to the 2018-22 Business Plan, which provides for continuous portfolio management and focus on investments in the deep water, pre-salt’
- 70% of 254 fields mandated for sale – i.e. 178 onshore & offshore, mid-2019 deadline given by the ANP to Petrobras – extension requested...!
- Mature onshore & offshore field packages initially, but later 80s-90s ‘giant’ deep water fields may also be offered – e.g. Marlim, Roncador, etc.

Opportunity spread: Petrobras disposals



- Offshore field examples:
 - Campos packages
 - Vermelho, Pargo & Carapeba - acquired by Perenco for U.S.\$370 mm
 - Marimba, Enchova, Bonito, Enchova Oeste, Bicudo, Pirauna, Badejo, Pampo, Linguado & Trilha - acquired by Trident for U.S.\$1 B
 - Tartauga Verde & Espadarte – acquired by Petronas for U.S.\$1.29 B
 - Maromba – ‘acquired’ by BW Offshore, undisclosed & possible part service contract basis including CAPEX investment of U.S.\$250 mm
 - Santos packages
 - Bauna – acquired by Karoon for U.S.\$665 mm

Transactions 2010-19 (source: Bank of America/Merrill Lynch)



Selected Precedent Transactions – Offshore Brazil

Bank of America
Merrill Lynch

Announcement Date	Buyer	Seller	Key Assets	Depth	Pre-salt	Deal Value (US\$ MM)	Brent Price (\$/bbl) (1)	% Oil	2P Implied Value (\$/bbl)
Oil Price Recovery / Volatility (Q3 2015 - 2019 YTD)									
Apr 26, 2019	Petronas	Petrobras	50% in the Tartaruga Verde field assets	Deepwater	No	\$1,294	\$72.15	94%	8.0
Apr 26, 2019	PetroReconavo SA	Petrobras	34 onshore Brazil producing fields	Conventional	No	\$384	\$72.15	82%	n.a.
Nov 28, 2018	Perenco	Petrobras	100% interest in Brazil offshore Polo Nordeste fields	Shallow Water	No	\$370	\$58.76	97%	n.a.
Post Oil Price Crash (2015-2018 Q2)									
Jul 4, 2018 (2)	Equinor	Barra	10% interest in BM-S-8 (Carcará)	Deepwater	Yes	\$379	\$77.76	77%	n.a.
Dec 18, 2017	Statoli	Petrobras	25% interest in Roncador field	Deepwater	No	\$2,350	\$63.41	86%	\$6.32(3)
Oct 27, 2017 (4)	ExxonMobil / Galp	Statoli	39.5% interest in BM-S-8 (Carcará)	Deepwater	Yes	\$955	\$60.44	77%	n.a.
Dec 21, 2016	Total	Petrobras	35% interest in BM-S-9 and 22.5% in BM-S-11	Deepwater	Yes	\$2,350	\$54.46	100%	\$9.66
Jul, 2016 - Jul, 2017 (5)	Statoli	Petrobras / QGEP	76% interest in BM-S-8 (Carcará)	Deepwater	Yes	\$1,440	\$42.46 - \$47.52	77%	n.a.
Pre Oil Price Crash (2010-2014)									
Jan 29, 2014	Qatar Petroleum	Shell	23% interest in Parque das Conchas (BC-10)	Deepwater	No	\$1,000	\$107.85	96%	\$10.23
Oct 21, 2013	PBR/Shell/Total/CN PR/NOPEC	Govt. Of Brazil	Ubra PSC	Deepwater	Yes	\$6,911	\$109.64	100%	n.a.
Oct 11, 2013	ONGC / Shell	Petrobras	35% interest in Parque das Conchas (BC-10)	Deepwater	No	\$1,561	\$111.28	96%	\$11.00
May 15, 2013	Geopark	Panoro Energy	10% interest in Manati field (BCAM-40)	Shallow Water	No	\$140	\$103.68	2%	\$13.28
May 6, 2013	HRT	BP	60% interest in Polvo field	Shallow Water	No	\$135	\$105.46	98%	\$3.51
Nov 26, 2012	OGX	Petrobras	40% interest in BS-4	Deepwater	No	\$270	\$110.92	n.a.	n.a.
Sep 19, 2012	Pacific Rubiales	Karoo Gas	35% in S-M-1101, S-M-1102, S-M-1037 and S-M-1165	Deepwater	No	\$250	\$108.19	n.a.	n.a.
Nov 11, 2011	Sinopec	Galp	30% interest in Galp's Brazilian portfolio	Deepwater	Yes	\$3,750	\$114.16	80%	n.a.
Aug, 2011 - Sep, 2011 (6)	QGEP/Barra	Shell / Chevron	60% interest in BS-4	Deepwater	No	\$315	\$110.62 - \$112.22	n.a.	n.a.
Jul 5, 2011	QGEP/Barra	Shell	20% interest in BM-S-8	Deepwater	Yes	\$350	\$113.61	n.a.	n.a.
Dec 23, 2010	Maersk	SK Energy	40% in Polvo, 20% in Wahoo and 27% in Itaipu	Shallow Water	No	\$2,400	\$94.25	92%	n.a.
Oct 1, 2010	Sinopec	Repsol	40% interest in Repsol's Brazilian portfolio	Deepwater	Yes	\$4,265	\$83.75	75%	n.a.
May 21, 2010	Sinochem	Statoli	40% interest in Peregrino field	Shallow Water	No	\$3,070	\$71.68	100%	\$15.35
Mar 11, 2010	BP	Devon Energy	Devon Energy's Brazilian portfolio	Deepwater	No	\$3,200	\$80.28	100%	n.a.

Source: IHS Herold.

Notes: Includes offshore transactions in Brazil with transaction values over US\$100 million announced since January 1, 2010. "n.a." denotes not publicly available.

(1) Priced as of announcement date.

(2) Equinor (ex-Statoli), ExxonMobil and Galp executed several transactions to align equity interests across BM-S-8 and Carcará North.

(3) Estimated 2P reserves per Wood Mackenzie.

(4) ExxonMobil acquired 33% interest in BM-S-8 from Statoli. Statoli also agreed to divest 6.5% of its 10% interest acquired from QGEP to ExxonMobil (3.5%) and Galp (3%).

(5) Statoli acquired 66% interest in BM-S-8 from Petrobras (announced on 7/29/16). One year later, Statoli acquired 10% interest from QGEP (announced on 7/11/17). Both shown together given Statoli/QGEP valued at same price per barrel as Statoli/Petrobras.

(6) QGEP acquired 30% interest in BS-4 from Shell (announced on 8/25/11). Barra Energia acquired 20% interest in BS-4 from Chevron and 10% interest from Shell (announced on 9/16/11). Both shown together given valued at same purchase price.

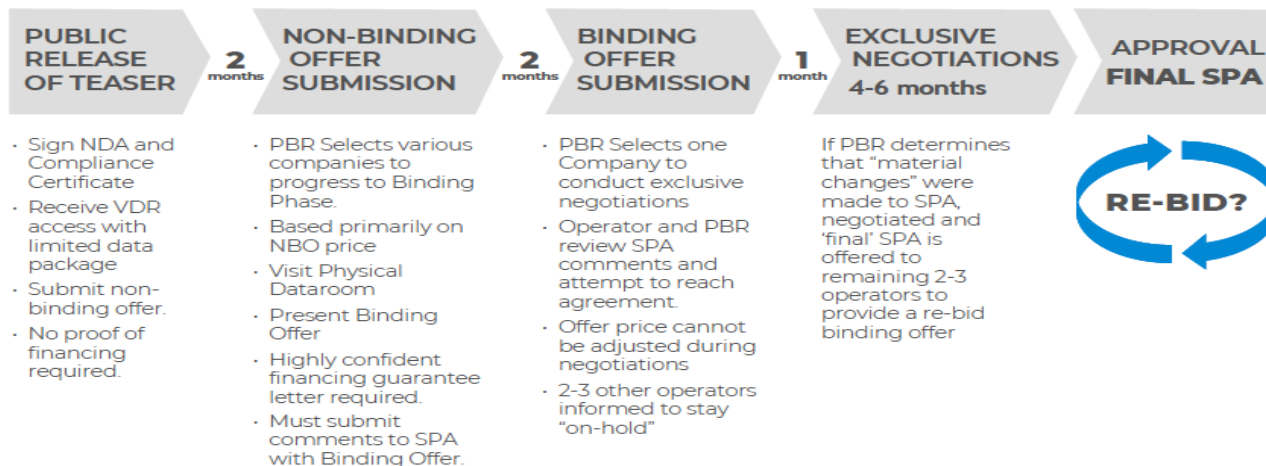
Total deal value: U.S.\$37 B, Brent price range U.S.\$54-111
22 deals, 73% deep water, 8 pre-salt, 1 onshore

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The Petrobras Sales Process



PETROBRAS DIVESTMENT PROCESS



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Source: Pindorama Energy

Ulysses Petroleum Management

Sale & Purchase Agreement



PETROBRAS DIVESTMENT PROCESS



1-3 months

- Re-bid "Process" has confused the industry and led to hesitation to enter Petrobras processes
- Currently proposed SPA must be altered due to unacceptable terms for financing or operational handover
- The re-bid process can be managed and Binding Offer must be made with premise that SPA will be altered as requested
- Once exclusive negotiations concluded, SPA cannot be altered in re-Bid
- If operator is successful in Re-Bid, process progresses to Signing of SPA



TOTAL PROCESS TO ASSET HANDOVER 12-18 MONTHS

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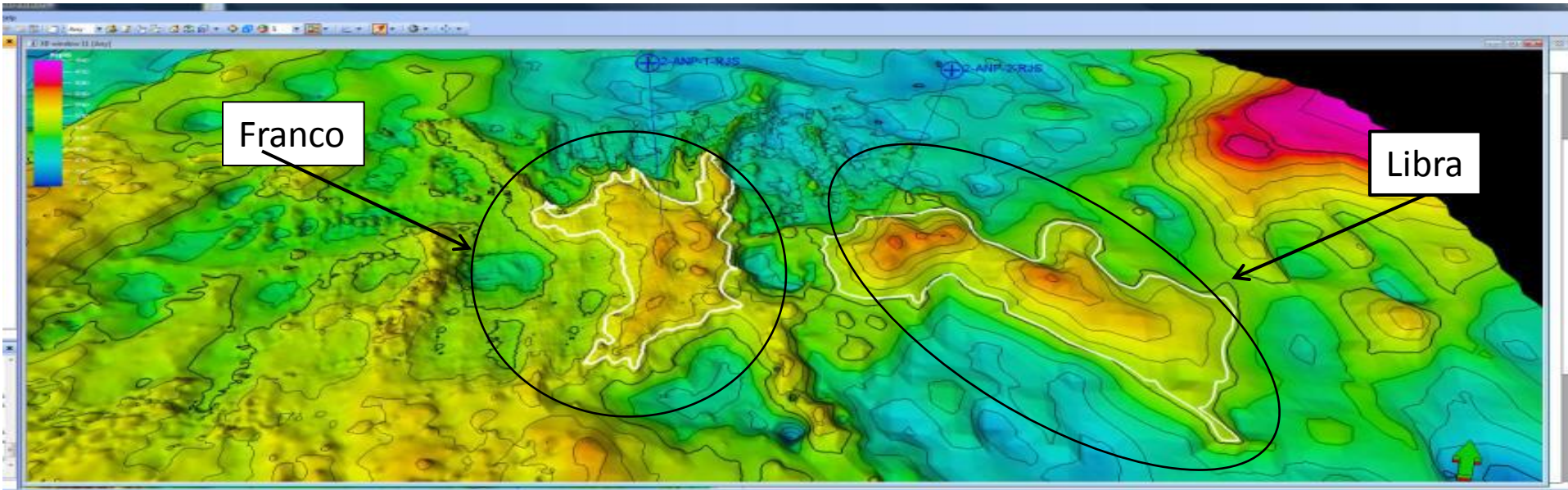


Pre-salt acquisitions so far

Note: Signature Bonuses fixed, Profit Oil is Bidding element

- Round 1: Single 'offer'
 - U.S.\$ 15 B Signature Bonus
 - Libra (Pbr/Shell/Total/CNPC/CNOOC)
- Round 2: 3 from 4 offered
 - U.S.\$ 3.3 B Signature Bonus total:
 - Sul de Gato do Mato (Shell/Total)
 - Entorno do Sapinhoa (Pbr/Shell/Repsol)
 - Norte de Cacara (Equinor/Petrogal/ExM)
- Round 3: 3 from 4 offered
 - U.S. \$2.85 B Signature Bonus total:
 - Peroba (Pbr/CNOOC/BP);
 - Alto do Cabo Frio Oeste (Shell/CNOOC/QPI) &
 - Alto do Cabo Frio Central (Pbr/BP)

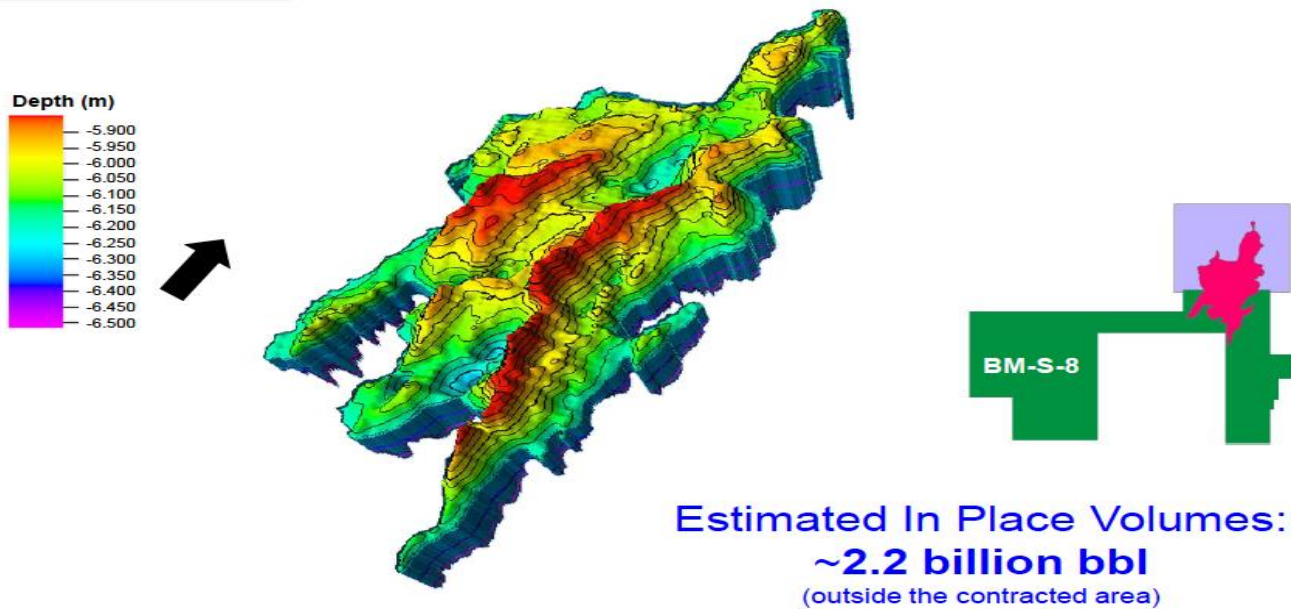
Franco (Buzios) and Libra Structures Base Salt Mapping (source: ANP)



Norte de Carcara (Source: ANP)



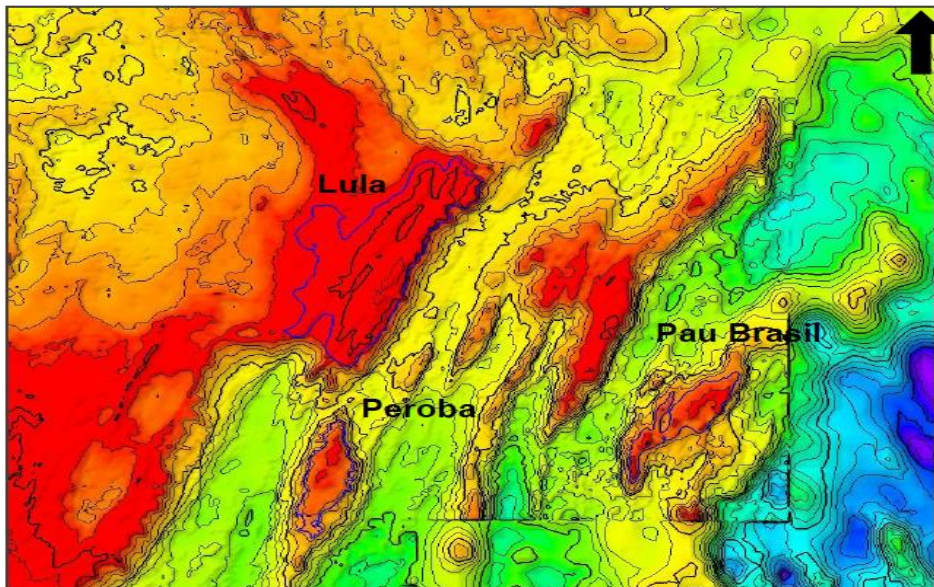
Carcara



Peroba & Pau Brasil (Source: ANP)



Peroba and Pau Brasil



Peroba e Pau Brasil are prominent four way closure structures

Peroba

It is just south of Lula Field

Peroba

Estimated unrisked in place volume
5.3 billion barrels of oil

Pau Brasil

Estimated unrisked in place volume
4.1 billion barrels of oil

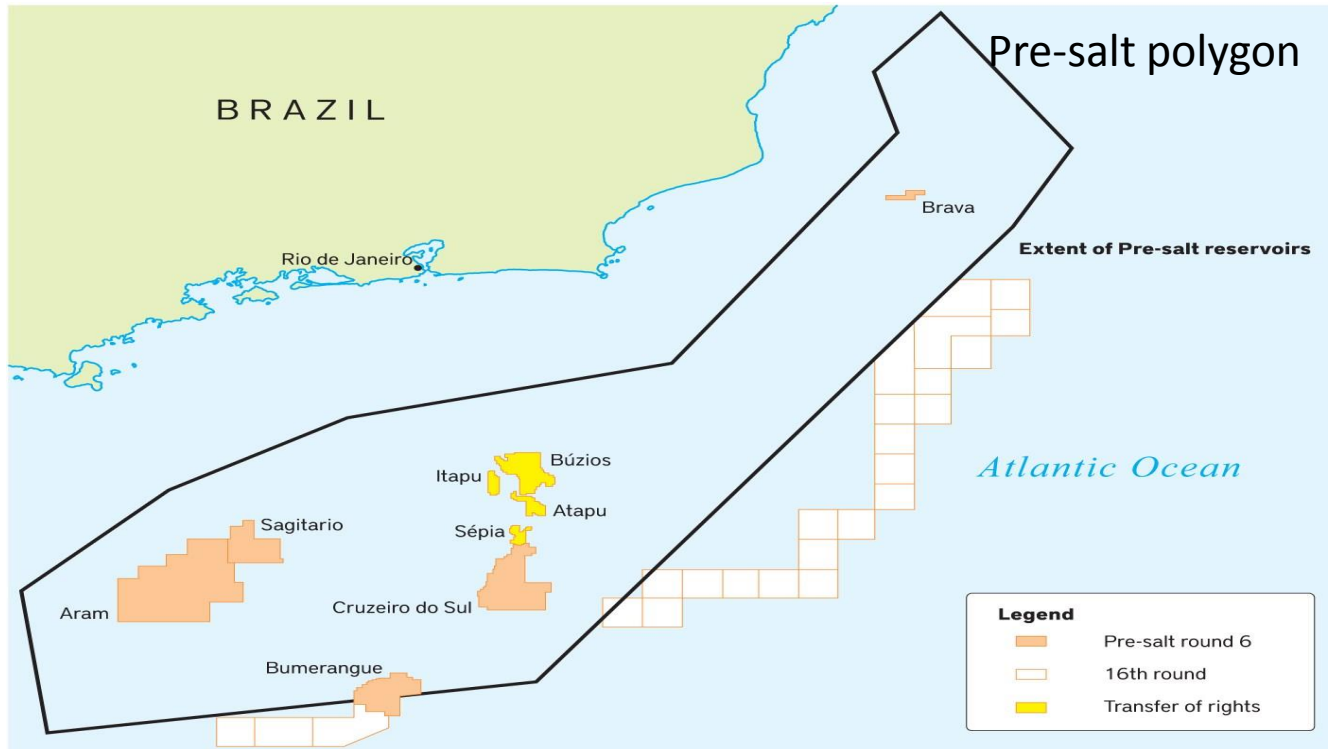
Pre-salt acquisitions so far

Note: Signature Bonuses fixed, Profit Oil is Bidding element



- Round 4: 3 from 4 offered
 - U.S.\$3.15 B Signature Bonus
 - Tres Marias (Pb/Chv/Shell)
 - Uirapuru (Pbr/Statoil/Petrogal/ExM)
 - Dois Irmaos (Pbr/Statoil/BP)
- Round 5: 4 from 4 offered
 - U.S.\$ 6.82 B Signature Bonus
 - Saturno (Shell/Chv)
 - Tita (ExM/QPI)
 - Pau Brasil (BP/Ecp/CNOOC)
 - Sudoeste de Tartaruga Verde (Pbr)

Transfer of Rights or Surplus Bid Round & 6th PSC Round



'Transfer Blocks' Signature Bonus U.S.\$ B

Buzios 17

Sepia 5.5

Atapu 3.5

Itapu 0.44

Total ~ 27 B USD

6th Pre-Salt Round Blocks

Aram

Sudoeste de Sagitario

Cruzeiro do Sul

Bumerangue

Norte de Brava

Acordo de Individualização da Produção (AIP)
= Unitization & Unit Operating Agreement requirement

Brazil's Pre-Salt play: political/fiscal switch-back



↑ 2005-6 Campos pre-salt & Santos (Tupi) discoveries

↓ 2007-9 Petrobras lobbying, 41 pre-salt blocks
withdrawn from Round 9, IOCs exit

← Petroleum Law changes, creation of Petrosal & PSCs, plus 'Cessao Oneroso'

→ Libra 'auction' (1st Pre-Salt Round), 'Lava Jato', Pet. Law revisions, Statoil's
Carcara deal - 2010-13

↑ 2nd & 3rd Pre-Salt Rounds - 28 October 2017

Local content reduced, Petrobras no longer

Operator & 30% minimum participant

"Ordem e progresso" ou vai para praia?



Bidding & body language...



Jogadores
Paulo Brito
1986