

# Brazilian Exploration Scenario and Opportunities

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Projections and future values are presented, but no representation regarding their accuracy or completeness is made.

Forward-looking statements regarding our intent, belief or current expectations may change without prior notice.



# Agenda

**1**

## Main Regulatory Enhancements

- ❖ Implemented Regulatory Measures
- ❖ Year to Date Results

**2**

## Investment Opportunities

- ❖ Brazil's Unique E&P Environments
- ❖ Calendar of Bid Rounds & Strategic Initiatives

**3**

## Final Remarks

- ❖ Regulatory Framework
- ❖ Brazil E&P Potential



# The New York Times

*Brazilian Auction Draws Oil Companies Back to Offshore Drilling*



An oil platform temporarily stationed last year in Guanabara Bay in Rio de Janeiro. An auction of offshore drilling rights on Thursday brought the Brazilian government more than \$2.4 billion. Yasuyoshi Chiba/Agence France Presse — Getty Images

March 2018 - Exxon Mobil and other oil companies opened their wallets at an offshore oil auction in Brazil on Thursday in a sign that the industry was stepping back into the deepwater drilling business. It was the third encouraging Brazilian offshore auction since September, and a vote of confidence for the country's energy reform program (...)



## FINANCIAL TIMES

myFT



### Oil & Gas industry

Shell hails bounceback towards deepwater drilling

Head of exploration says break-even prices are now \$30 a barrel

AUGUST 12, 2018

Save to myFT

*"The most excitement at the moment is from the deepwater," Mr Brown\* told the Financial Times, saying projects in Brazil, the Gulf of Mexico and West of Shetland in the North Sea were among the most attractive.*

*\* Andy Brown, Shell's head of exploration and production*



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U.S. & INTERNATIONAL OIL & GAS MARKETS & INVESTMENT

## Brazil: New regulations spur offshore investment surge

By Mark Young | Jan. 16, 2018, 2:56 p.m. | Share: [f](#) [t](#) [in](#) [G+](#) [e](#)

This fresh investment, notably in offshore pre-salt basins, follows the introduction of significant regulatory changes to the oil and gas sector within Brazil.

# Main Regulatory Enhancements

## 2017

- 3 Bidding Rounds  
PSA 2 & 3 / R14
- New Simplified Contract Rules
- New Local Content Rules  
2017 & Beyond
- Bidding Schedule 2018/2019
- Extension - Exploration Phase  
(Rounds 11 and 12)

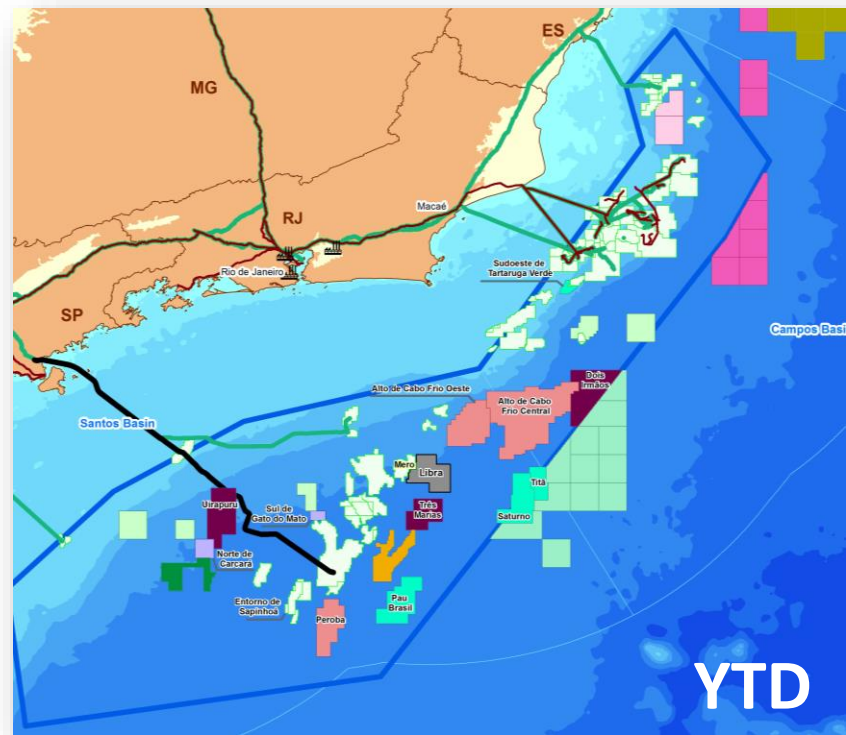
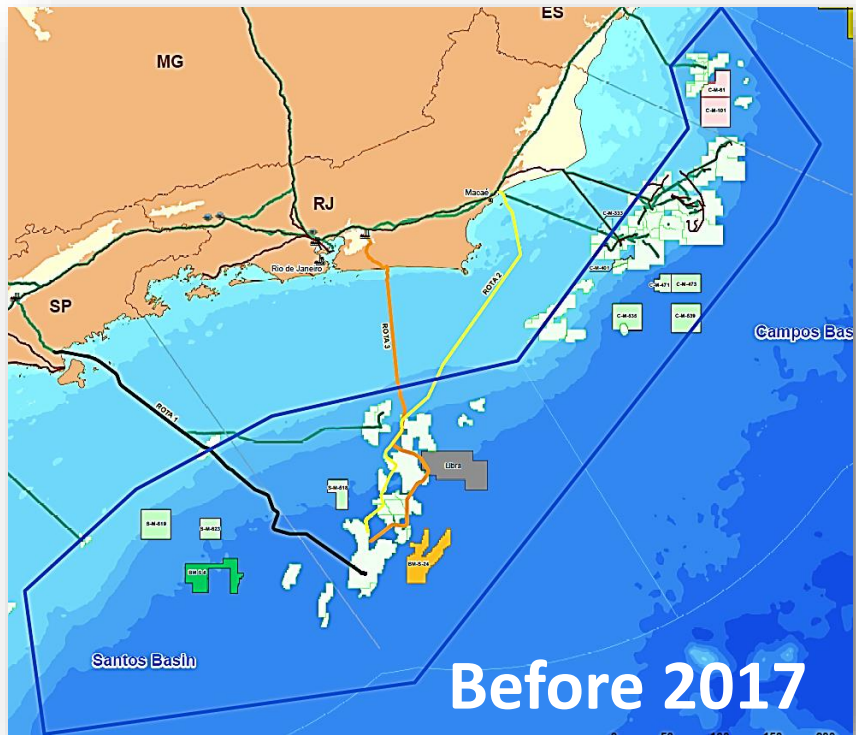
## 2018

- 3+ Bidding Rounds  
PSA 4 & 5 / R15
- Local Content Waiver  
(previous rounds - up to 13<sup>th</sup> Round)
- Open Acreage – Entire Onshore
- Royalties Reduction  
(incremental production in mature fields)
- Collateral Burden Reduction  
(100% to 30% in marginal fields)
- New E&P Database (BDEP)  
(ANP/IBAMA joint Environmental Database)
- Reserve Based Landing (RBL)
- Bidding Rounds Schedule 2020/2021



Bidding Rounds  
(in 2017/2018)





# 2017 - 2018 Bidding Rounds Results

Bidding Round	Acquired Blocks	Signing Bonus (US\$ billion)	Registered Companies	Winner Companies	Premium
 <b>Brasil 14<sup>th</sup> Round</b> Oil & Gas Bidding Rounds	<b>37</b> (24 onshore and 13 offshore)	<b>1.035</b>	<b>32</b>	<b>17</b>	<b>1,556%</b>
 <b>PRE-SALT Brazil 2</b> PRODUCTION SHARE	<b>3</b>	<b>0.889</b>	<b>10</b>	<b>7</b>	<b>261%</b>
 <b>PRE-SALT Brazil 3</b> PRODUCTION SHARE	<b>3</b>	<b>0.768</b>	<b>14</b>	<b>6</b>	<b>202%</b>
 <b>PRE-SALT Brazil 4</b> PRODUCTION SHARE	<b>3</b>	<b>0.849</b>	<b>16</b>	<b>7</b>	<b>202%</b>
 <b>ROUND Brazil 15</b> OIL AND GAS CONCESSIONS	<b>22</b>	<b>2.159</b>	<b>17</b>	<b>12</b>	<b>622%</b>
 <b>PRÉ-SAL Brasil 5</b> PARTILHA DA PRODUÇÃO	<b>4</b>	<b>1.838</b>	<b>12</b>	<b>8</b>	<b>170%</b>
<b>Total</b>	<b>72</b>	<b>7.5</b>	<i>Fierce Competition with Fantastic Results!</i>		

R\$/US\$ = 3.71



# Estimated Impact from 6 Recent Oil Auctions...

2017-2018



Brasil  
14<sup>th</sup> Round  
Oil & Gas Bidding Rounds

ROUND  
Brazil 15  
OIL AND GAS CONCESSIONS

PRE-SALT  
Brazil 2  
PRODUCTION SHARE

PRE-SALT  
Brazil 3  
PRODUCTION SHARE

PRE-SALT  
Brazil 4  
PRODUCTION SHARE

PRÉ-SAL  
Brasil 5  
PARTILHA DA PRODUÇÃO

R\$/US\$ = 3.71 / Brent = US\$ 70



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# Brazil's Current State

Area under concession  
~ 280,000 km<sup>2</sup>

324 Blocks

440 fields

Production  
(Dez, 2018)

Oil 2.691 million barrels/d

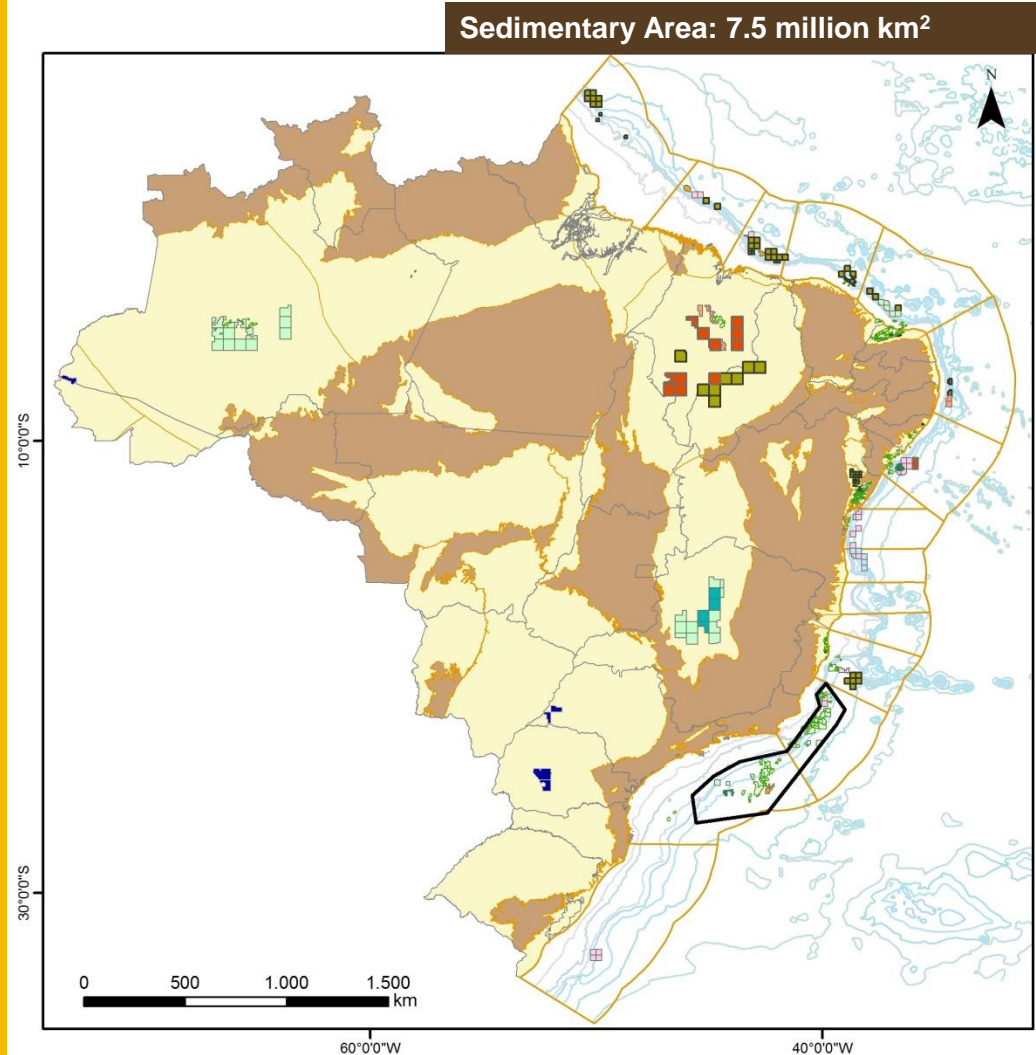
Natural Gas 114 million m<sup>3</sup>/d

Proven Reserves  
(Dez, 2017)

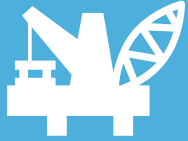
Oil 12.8 billion barrels

Natural Gas 369 billion m<sup>3</sup>

**9<sup>th</sup> largest oil producer in the world  
and the largest in Latin America**



# Three Different E&P Environments



||||||| 55%

## Pre-Salt

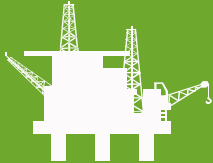
One of the World's hottest oil play, home to the largest offshore oil discoveries in the last decade.

*Average oil production per well*

17,655 bpd



85 wells



||||||| 37%

## Conventional Offshore

East Margin adjacent to the pre-salt region and Equatorial Margin, including new frontier areas and a significant number of large mature fields.

1,650 bpd



628 wells



||||||| 8%

## Onshore

Mature Basins and New Frontier Basins (mostly gas prone). Potential for unconventional to be unleashed.

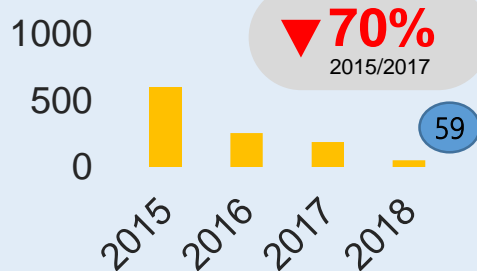
16 bpd



6,683 wells

# Foster Conventional Production

## Development Wells Concluded



## Onshore oil Production (Oct, 2018)



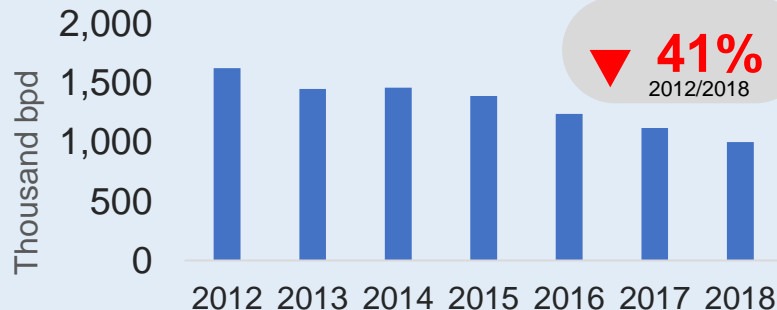
38%  
2012/2018

**107,415<sub>bpd</sub>**

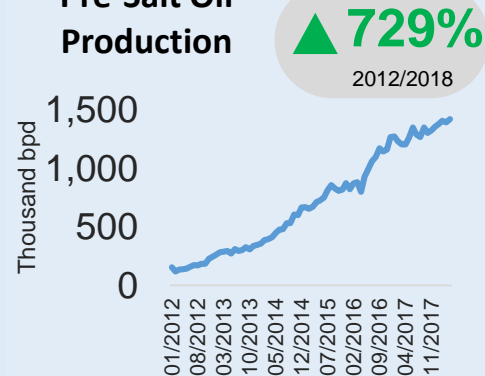
## Exploratory Wells Concluded



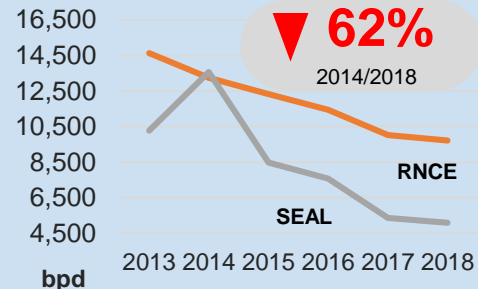
## Post-Salt Campos Basin Oil Production



## Pre-Salt Oil Production

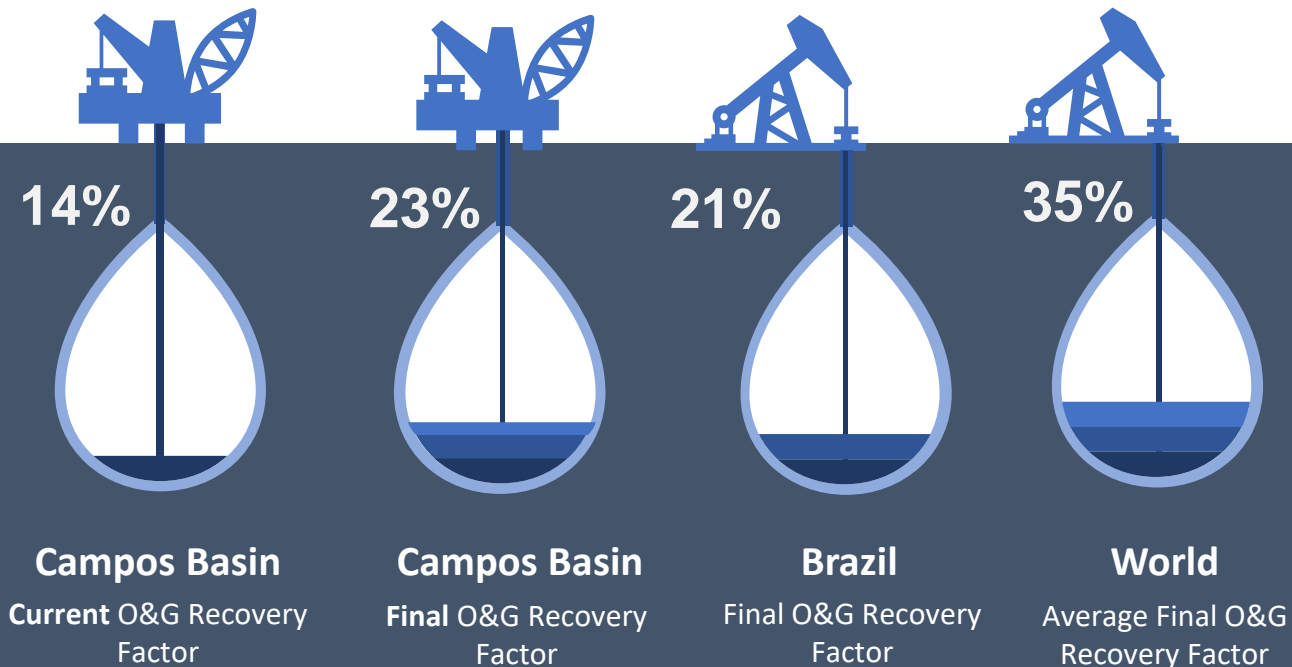


## Northeast Basins Offshore Oil Production



June 2018

# Maximize Recovery Factor



1% addition in  
Campos Basin:

**985** Mboe

New Reserves

1% addition in  
Onshore:

**200** Mboe

New Reserves



# Bidding Rounds Schedule

OPEN  
ACREAGE  
Brazil  
OIL AND GAS CONCESSIONS

1st Wave

November

2018

OPEN  
ACREAGE  
Brazil  
OIL AND GAS CONCESSIONS

2nd Wave

1st Semester

2019

ROUND  
Brazil  
OIL AND GAS CONCESSIONS

PRE-SALT  
Brazil  
PRODUCTION SHARE

3rd Quarter

2020

PRE-SALT  
Brazil  
PRODUCTION SHARE

ROUND  
Brazil  
OIL AND GAS CONCESSIONS

To be  
defined

PRE-SALT  
Brazil  
PRODUCTION SHARE

ROUND  
Brazil  
OIL AND GAS CONCESSIONS

To be  
defined

2021

TRANSFER OF  
RIGHTS SURPLUS  
Brazil  
PRODUCTION SHARE

October, 28th

# Open Acreage

Continuous offer of blocks and mature fields.

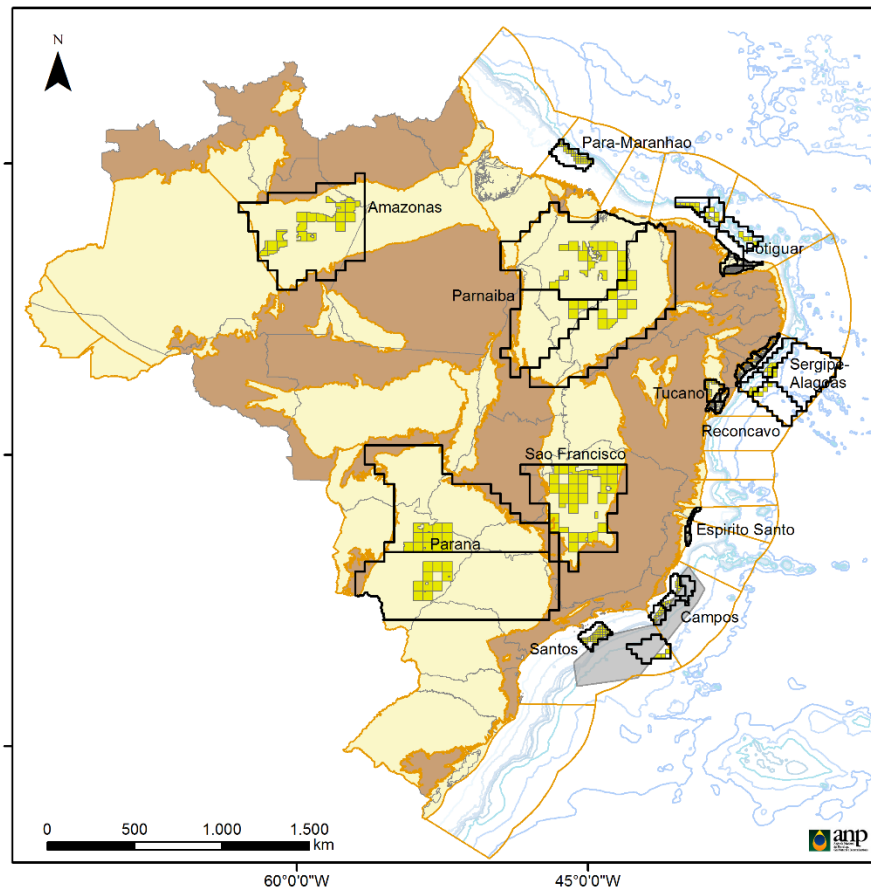
Companies can bid on blocks not sold in previous auctions.

Applications can be submitted anytime and not just at designated points.

It will promote exploration activity especially in onshore areas.



# Open Acreage 1<sup>st</sup> Wave



## Data packages available

**346,035**  
Km<sup>2</sup> area

**14**  
Mature  
fields

**884**  
Blocks

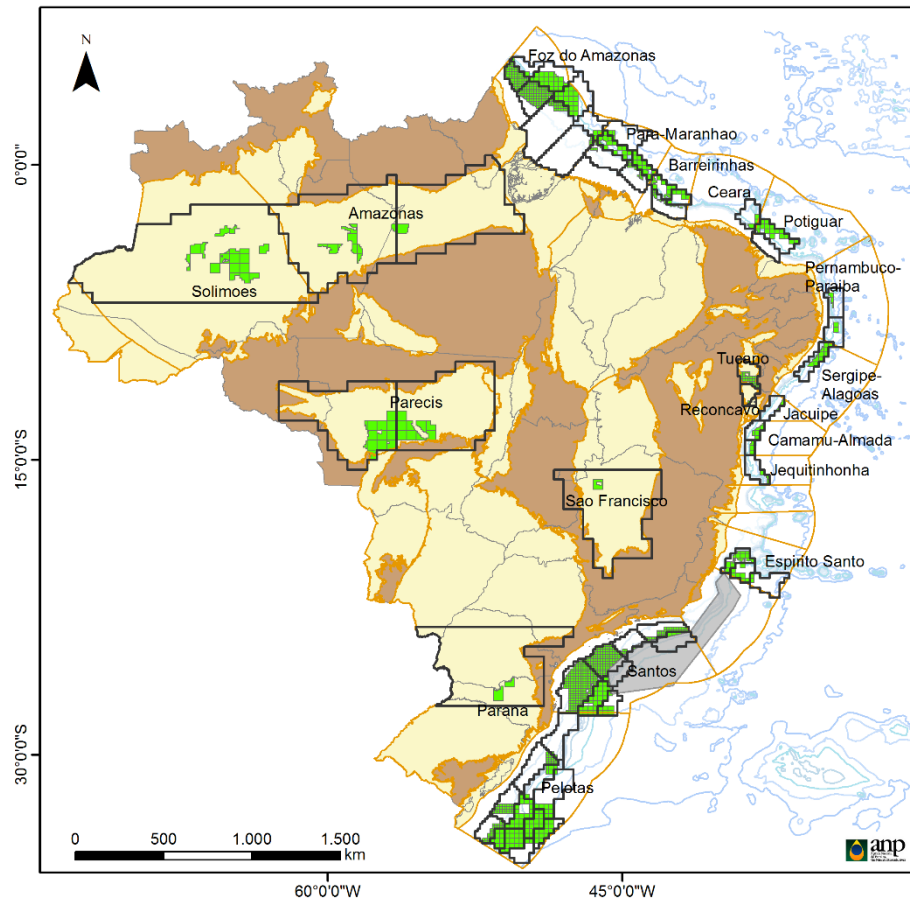
**15**  
Sedimentary  
basins

Blocks not acquired in previous rounds included

**722** blocks in **9** onshore basins

**162** blocks in **6** offshore basins

# Open Acreage 2<sup>nd</sup> Wave



Technical and economic parameters under evaluation

**1,054**  
Blocks

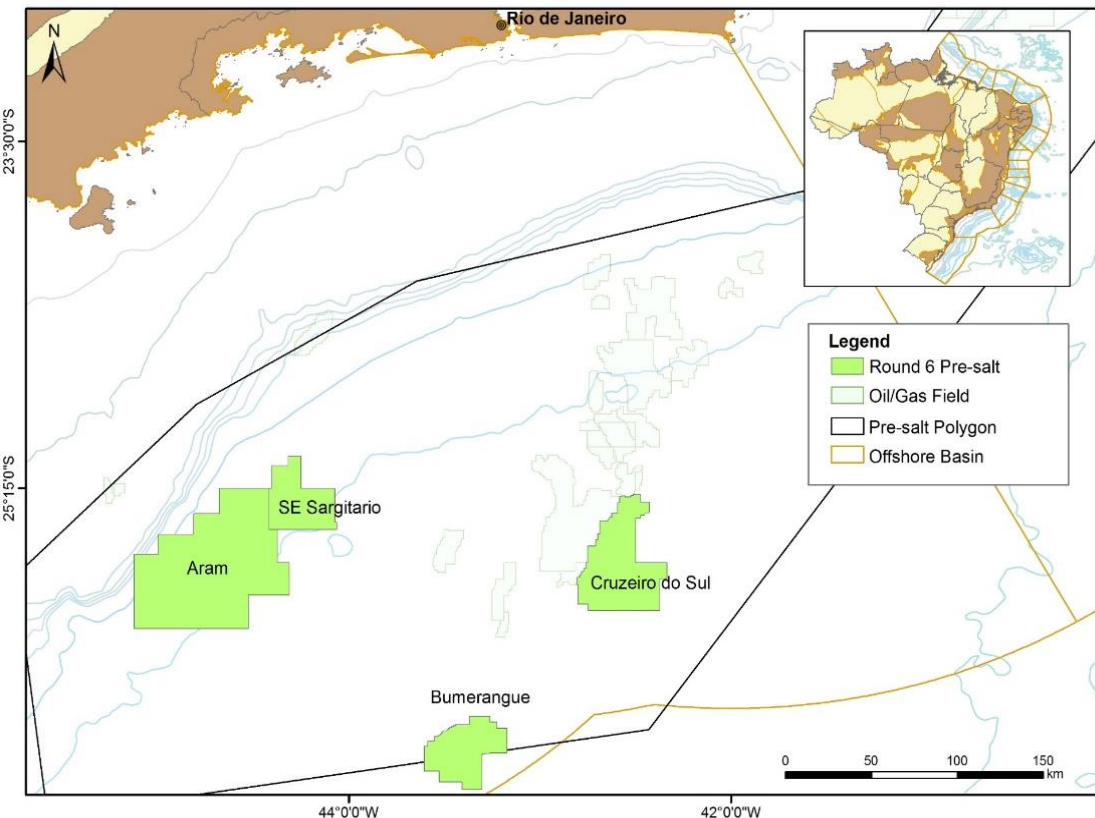
**441,400**  
Km<sup>2</sup> area

**20**  
Sedimentary  
basins

**85** blocks in **7** onshore basins

**969** blocks in **13** offshore basins

# 6th Pre-Salt Bidding Round (2019)



5  
Areas

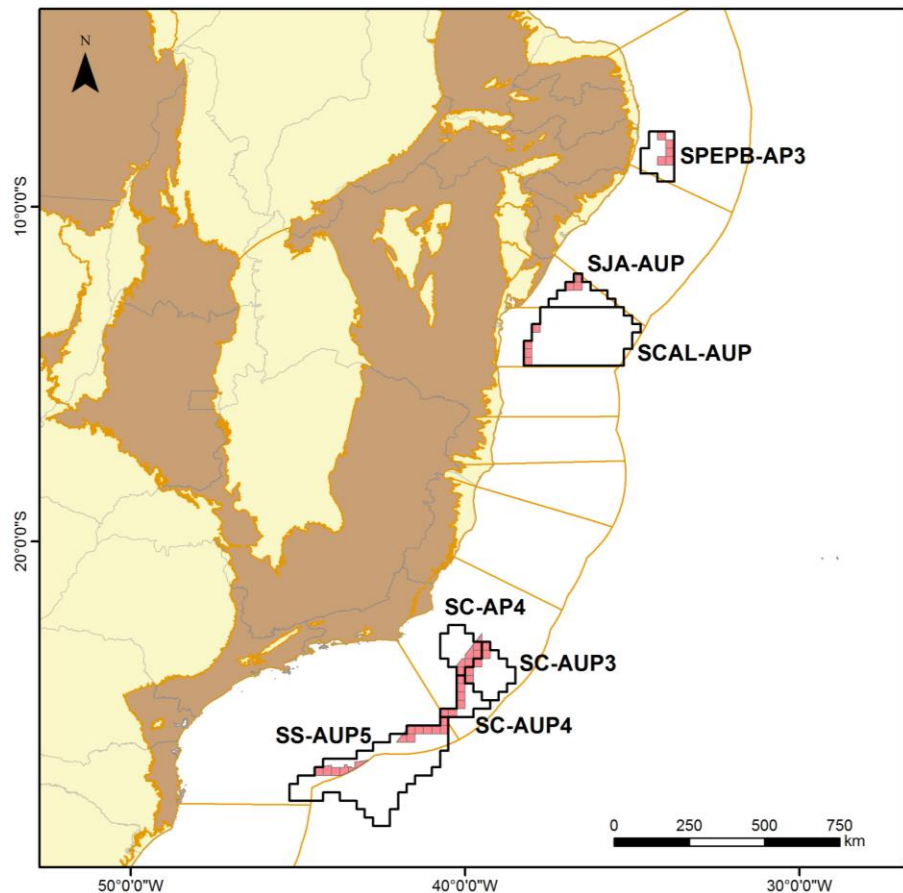
42B/bbl

*Estimated Unrisked Oil in  
Place Volumes (P50)*

Blocks	Min. Oil Profit (%)	Sig. Bonus (R\$)
Aram	24,53	5.050.000.000,00
Bumerangue	26,68	550.000.000,00
Cruzeiro do Sul	22,87	1.150.000.000,00
Sudoeste de Sagitario	26,09	500.000.000,00
Norte de Brava	36,98	600.000.000,00
<b>Total</b>		<b>7.850.000.000,00</b>



# 16th Bidding Round (2019)



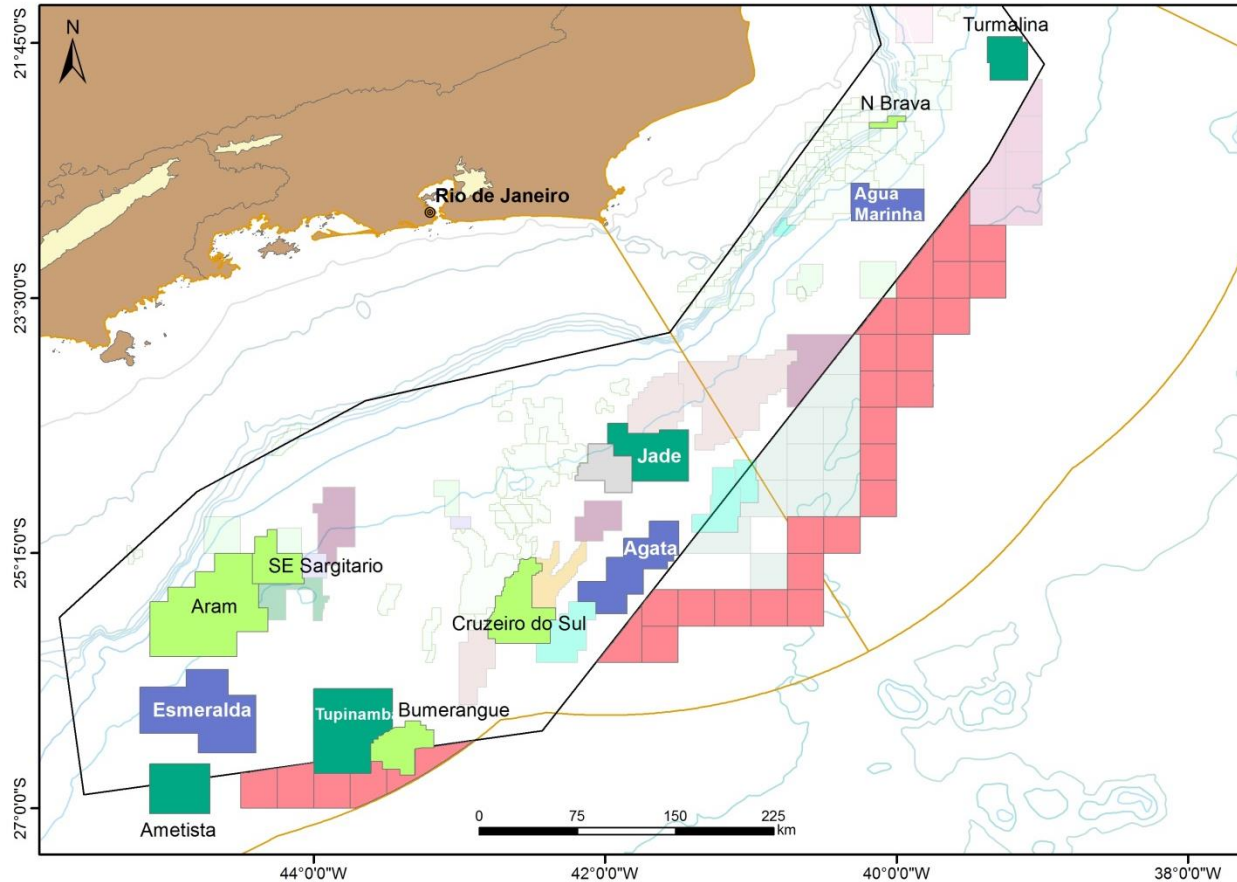
42 Offshore blocks

~30,000 km<sup>2</sup>

*Pernambuco-Paraíba,  
Jacuípe, Camamu-Almada,  
Campos & Santos basins*

# Next Pre-salt Bidding Rounds

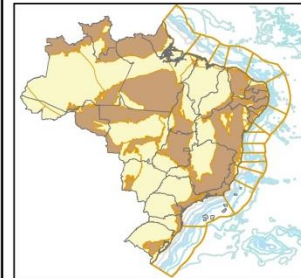
PRE-SALT Brazil 6 PRE-SALT Brazil 7 PRE-SALT Brazil 8 ROUND Brazil 16  
PRODUCTION SHARE PRODUCTION SHARE PRODUCTION SHARE OIL AND GAS CONCESSIONS



Several blocks in  
the Pre-Salt play  
including **giant** leads

## Legend

- Round 16
- Round 6 Pre-salt
- Round 7 Pre-salt
- Round 8 Pre-salt
- Oil/Gas Field
- Pre-salt Polygon
- Offshore Basin



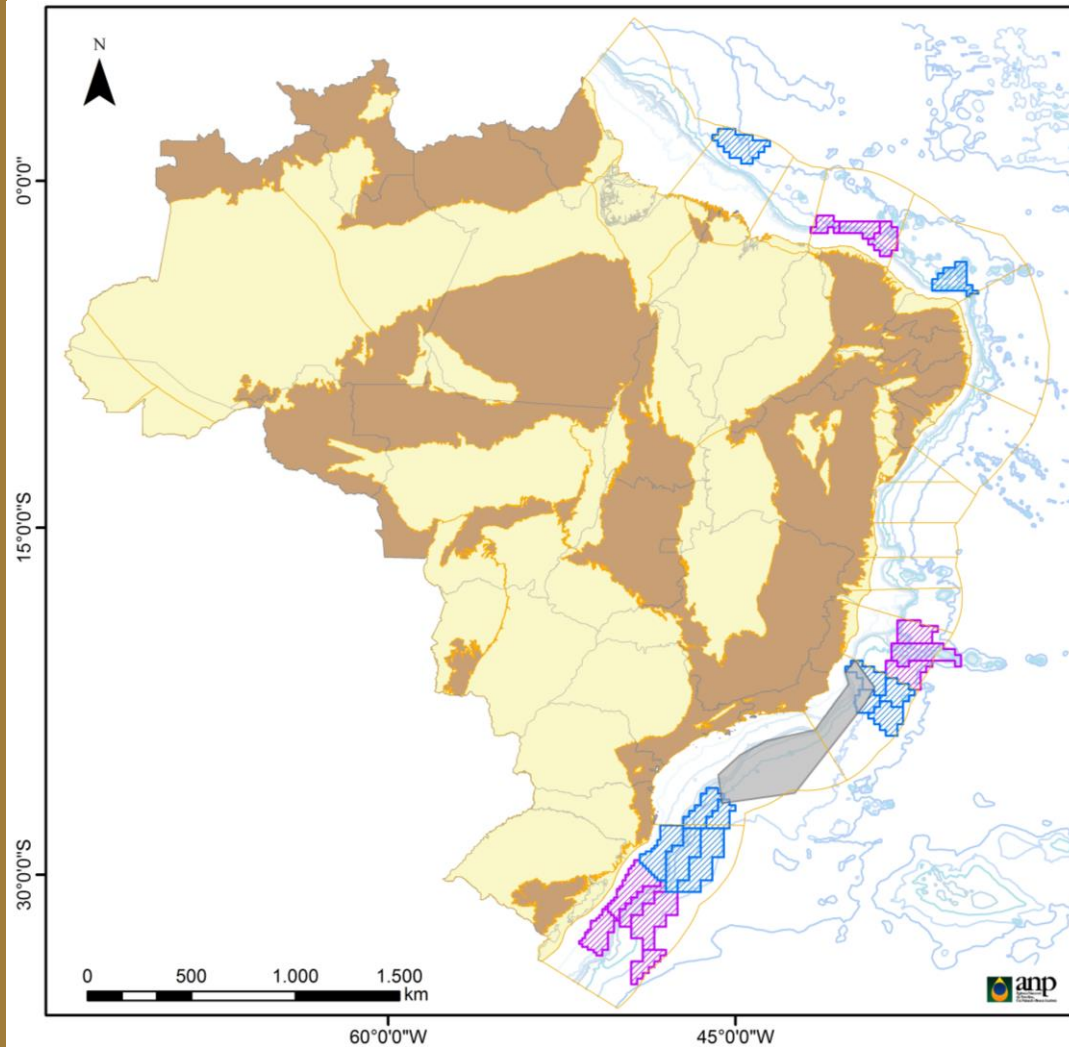
# Sectors Under Examination

2020

Para-Maranhão, Potiguar,  
Santos Campos & Pelotas  
Basins

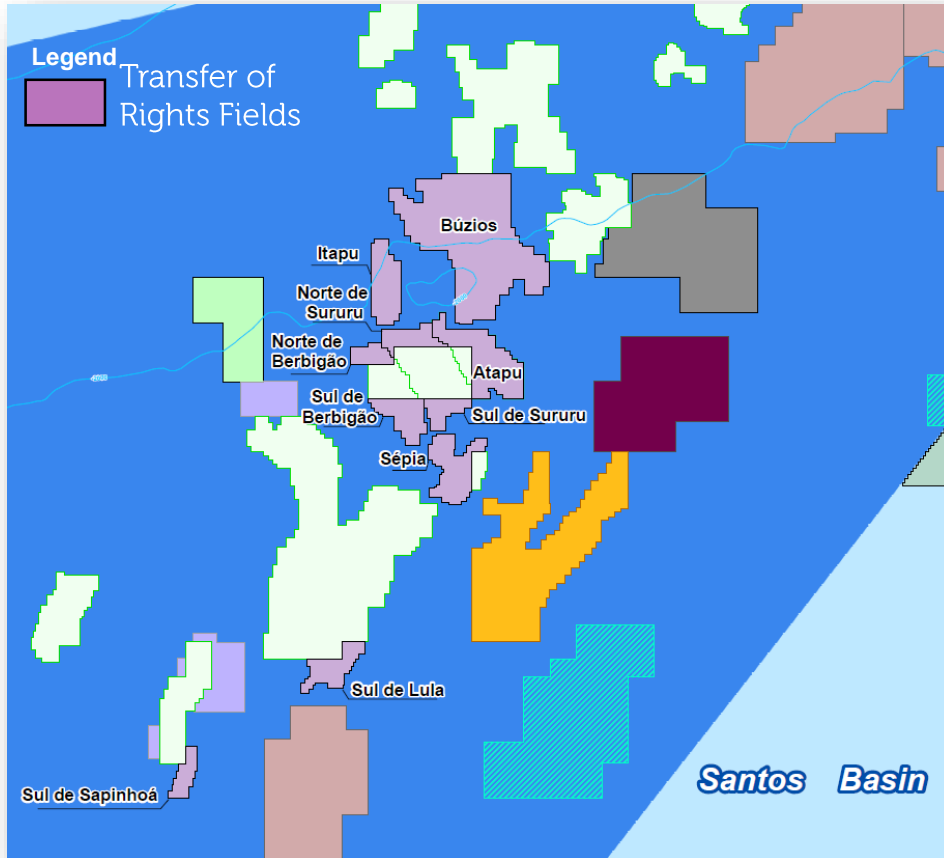
2021

Ceara, Espírito Santo & Pelotas  
Basins



# Transfer of Rights Surplus Opportunities

TRANSFER OF  
RIGHTS SURPLUS  
Brazil  
PRODUCTION SHARE



October, 28th



4

Fields

Atapu, Itapu,  
Buzios and  
Sepia

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# Attract Suitable Players

## Pre-Salt



01

- Supermajors
- Major Operators

## Conventional Offshore



02

- Major Operators
- Exploration Specialists
- Mature Field Players

## Onshore



03

- Small and mid - sized Companies

Supported by Oilfield Service Companies, Suppliers and Financial Institutions !

# Brazil E&P Potential

**5.5M**  
bpd

**Production  
Forecast  
(next 10 years)**

**>50**  
New FPSOs

**The most prominent  
deepwater  
environment**

**Mature  
Fields/  
Basins**

**Improve Recovery  
Factor**

1% addition

- ❖ 2,2Bboe reserves
- ❖ US\$18B investments

**New  
Frontier  
Basins**

**We barely Know our  
Potential...**

Unconventional resources  
under discussion

**Contracted / In Progress**

**to be unlocked**

# Final Remarks

ANP main objective is to promote a Predictable and Stable Regulatory Framework , that Attract New Investments and Accelerate the Development of the Pre-Salt, Conventional Offshore and Onshore E&P Environment.

## Attract the Right Players

- ❖ Giant Fields
- ❖ New Frontiers
- ❖ Mature Fields
- ❖ Onshore

***Create Value  
through a  
Developed,  
Diverse and  
Competitive  
Market!***

## Increase E&P Activities

- ❖ Accelerate Pre-Salt Development
- ❖ Improve Mature Fields Production
- ❖ Improve Recovery Factor
- ❖ Enhance Onshore Incentives
- ❖ Expedite Environmental Licensing

**Create a Secondary Market**  
Attract mid/small-sized companies

## Maximize Production

- ❖ Diversity of Players
- ❖ EOR/IOR initiatives
- ❖ New RD&I focus
- ❖ Financing Opportunities

# National Agency for Petroleum, Natural Gas and Biofuels – ANP

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***Additional Information:***

<http://rodadas.anp.gov.br/en>

[www.anp.gov.br](http://www.anp.gov.br)

