

Unlocking the Opportunities in the Brazilian Oil Industry

Felipe Kury
Diretor

Jun, 25th, 2019

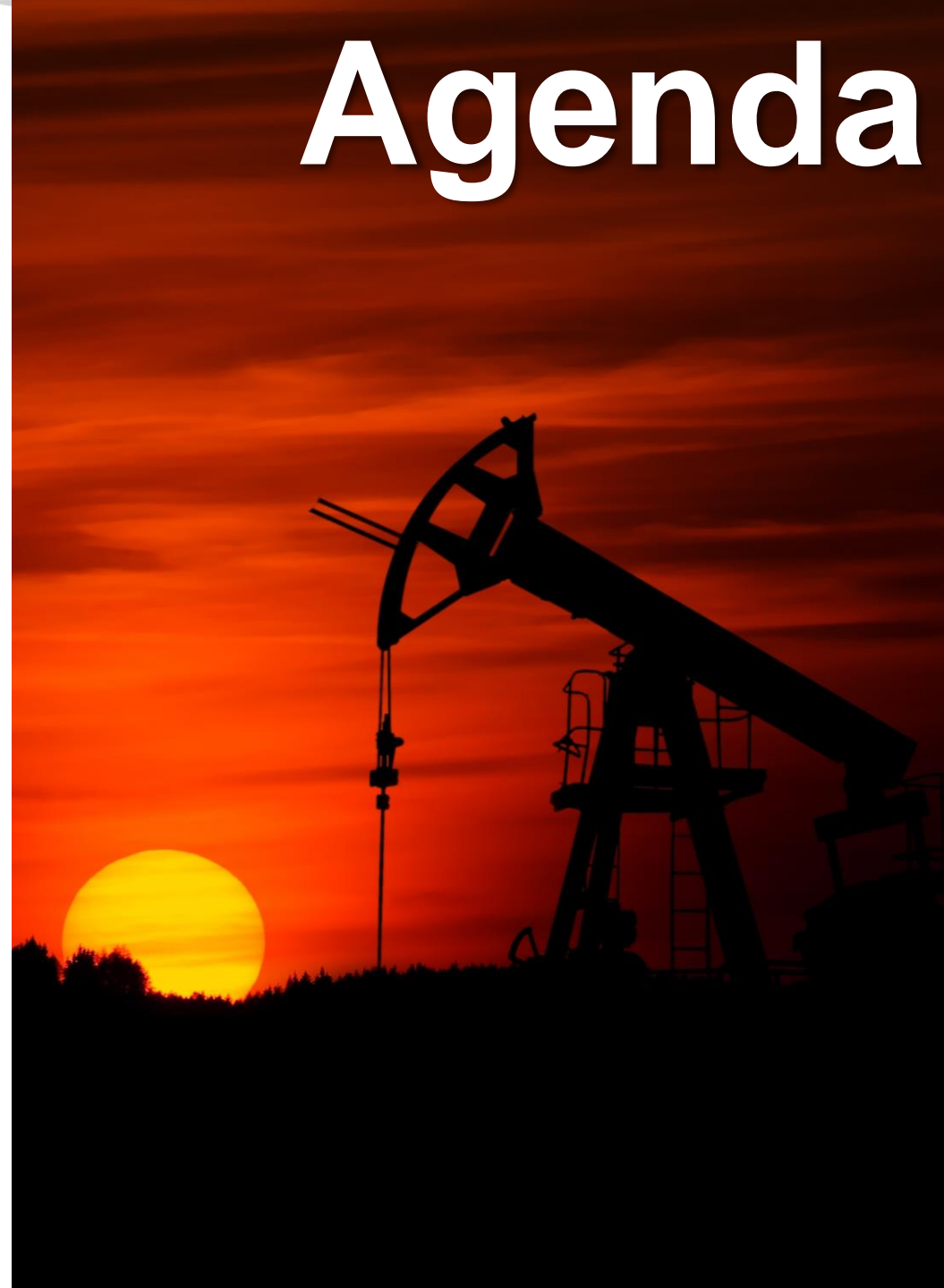
Brazil Oil & Gas Industry Overview

Improvements in E&P Regulation

Enhanced Oil Recovery Initiatives and Impact

Upcoming Bidding Rounds

Agenda





Brazil at a Glance

And the Relevance of Oil and Gas Industry



~1.9 USD

Trillion

GDP (2018)

13% Oil and Gas Industry



~ 210

million

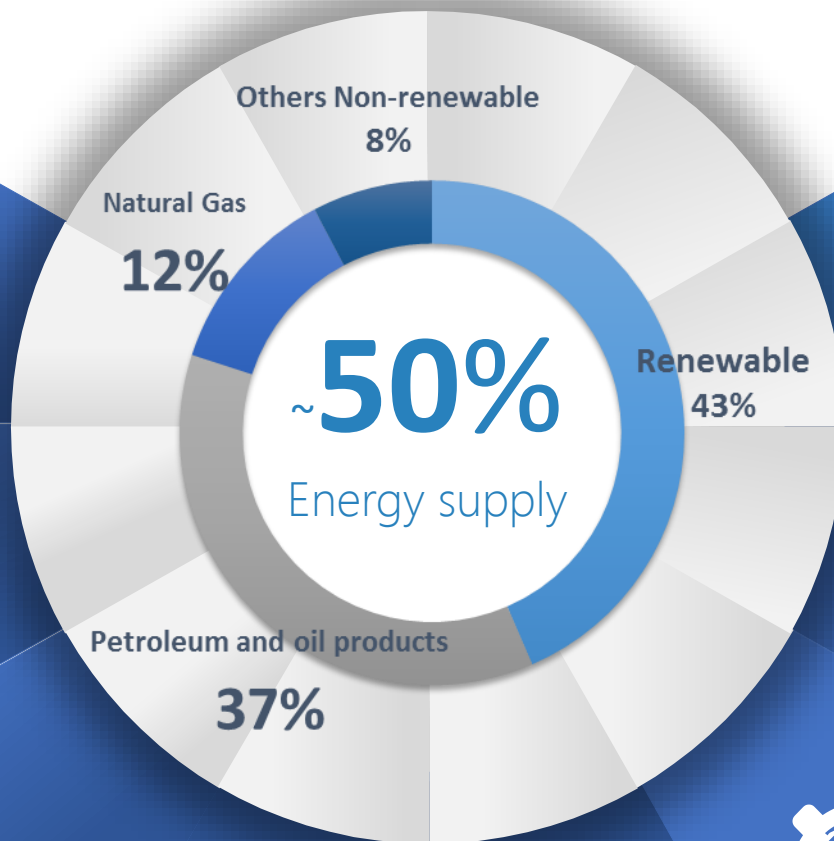
Population (2018)



Largest country
(8.5 million km²)

5th

8th
Largest economy \$



10th

largest oil producer, the
largest of Latin America



7th

largest oil products consumer



7th

Largest FDI destination

Brazil Proven Reserves

December, 2018

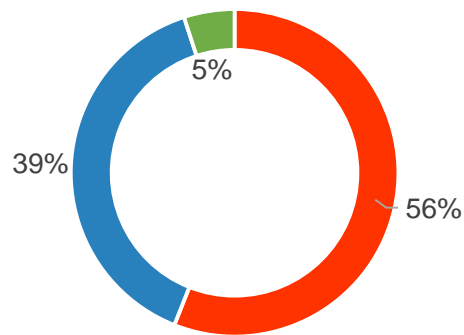
15 Billion boe

Oil
13.2
Billion bbl

Gas
368
Billion m³

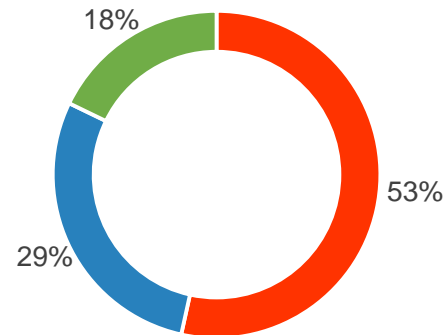
"Figures do not include recoverable resources from some Pre-Salt fields under evaluation nor the areas included in the Transfer of Rights (ToR) surplus."

Oil Proven Reserves



■ Pre-Salt ■ Conventional Offshore ■ Onshore

Gas Proven Reserves



■ Pre-Salt ■ Conventional Offshore ■ Onshore

Pre-Salt



Conventional Offshore



Onshore



Brazil is a Country with Continental-Dimension, however...



Less than **5%** of the sedimentary areas are contracted



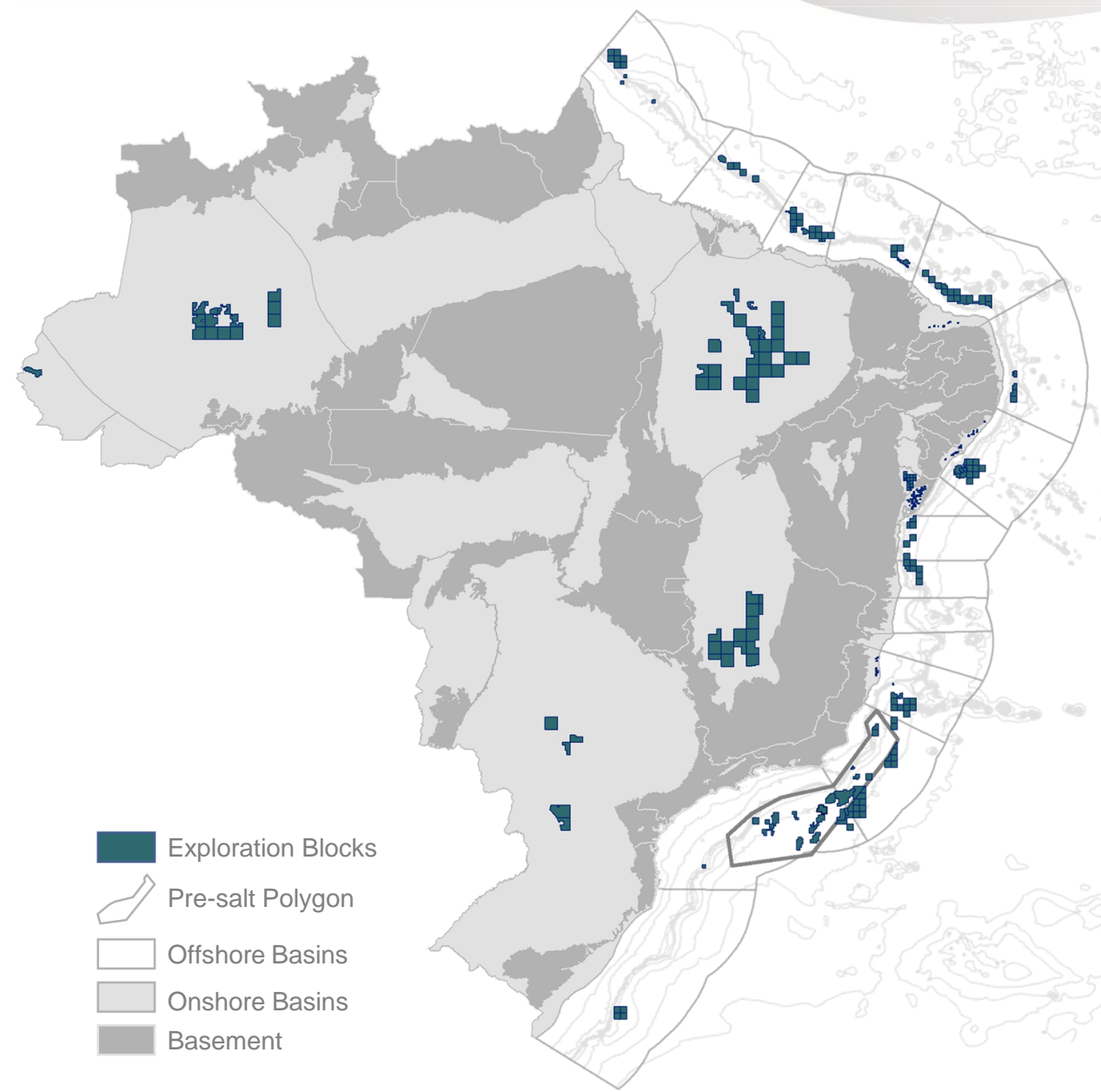
2 Basins without a single well
(Madre de Dios & Pernambuco – Paraíba)



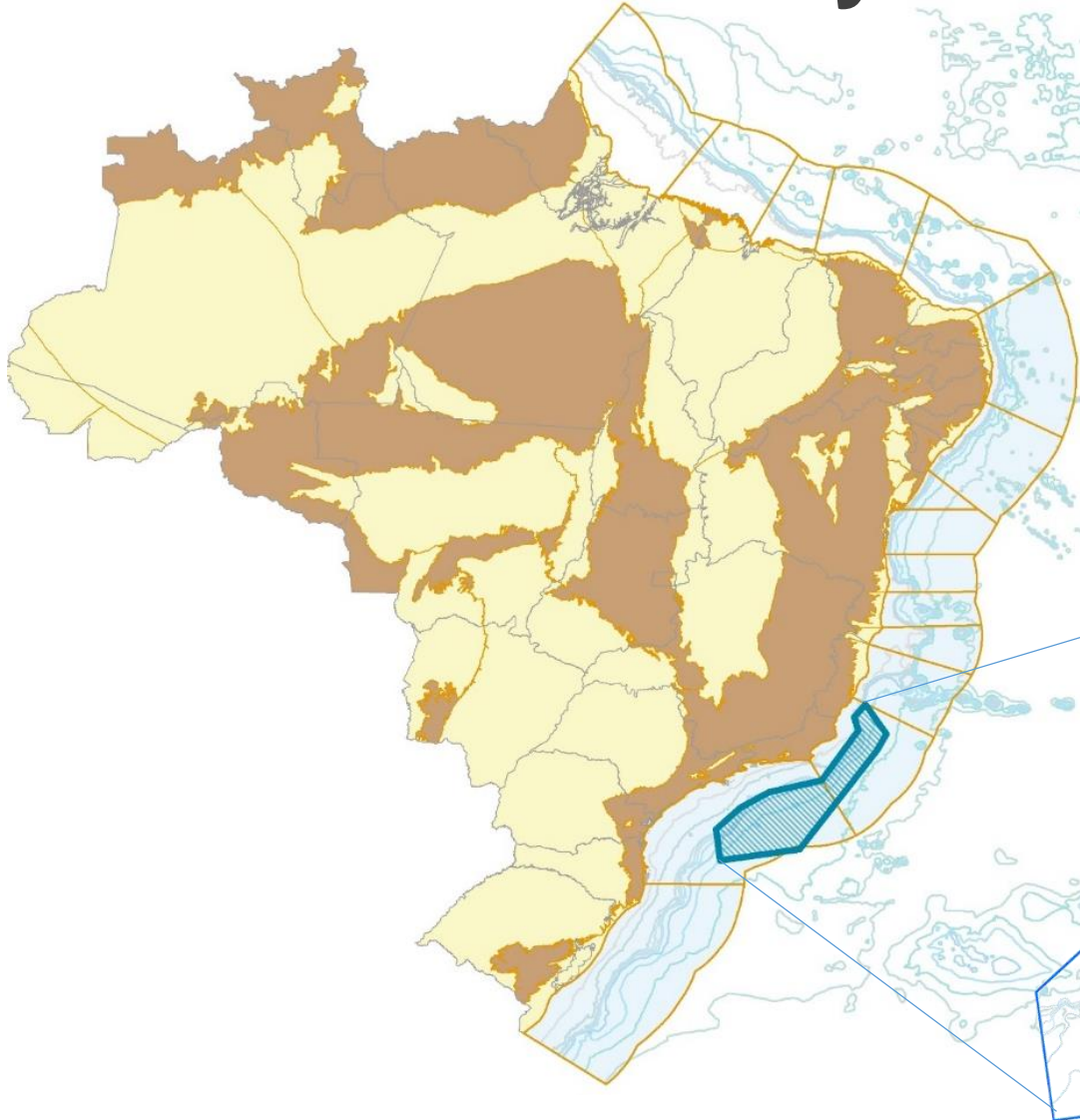
Only ~ **30,000** wells were drilled in Brazil YTD

❖ **60,000 in Argentina**

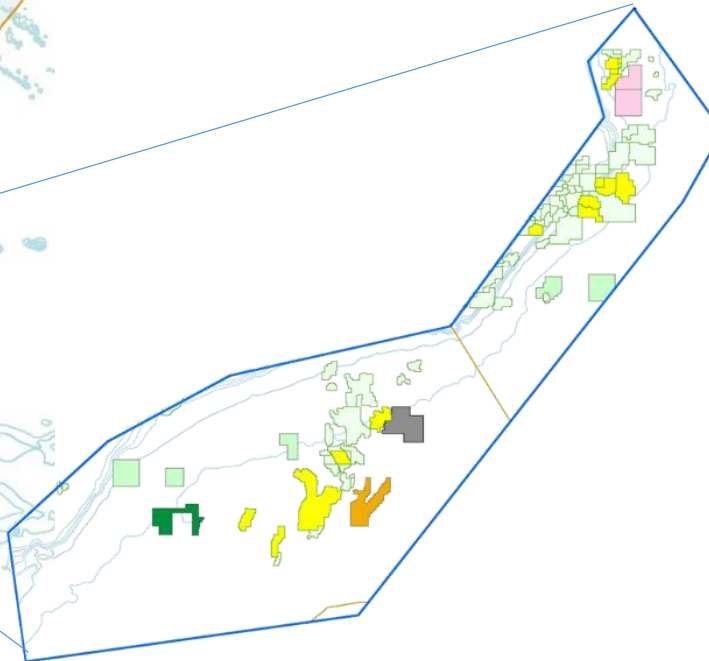
❖ **4 million in USA**



Brazilian Oil Production Is Highly Concentrated at The Pre-Salt Play



Pre-Salt Production ~ 1.5 million bpd - out of 2.5 million bpd Total Production



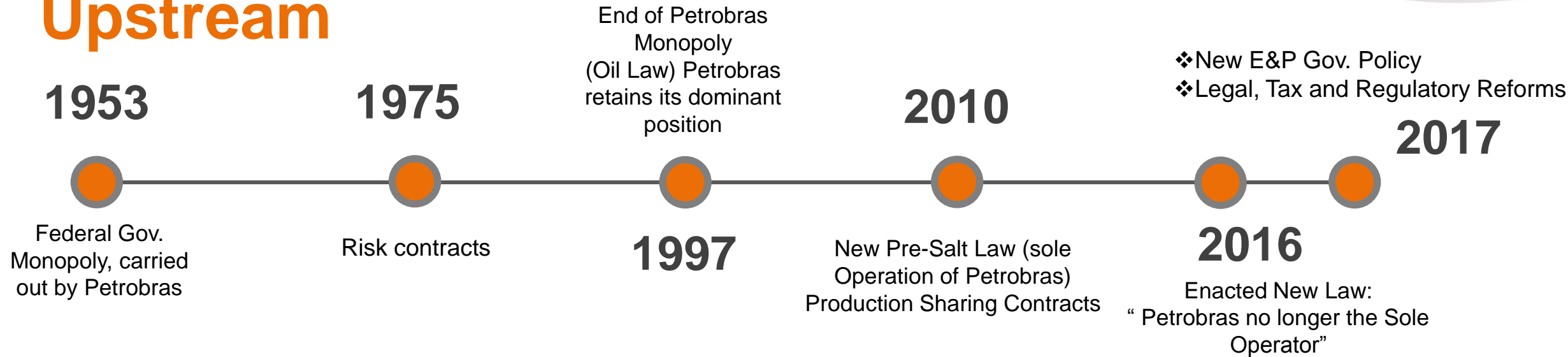
Improvements in E&P Regulation



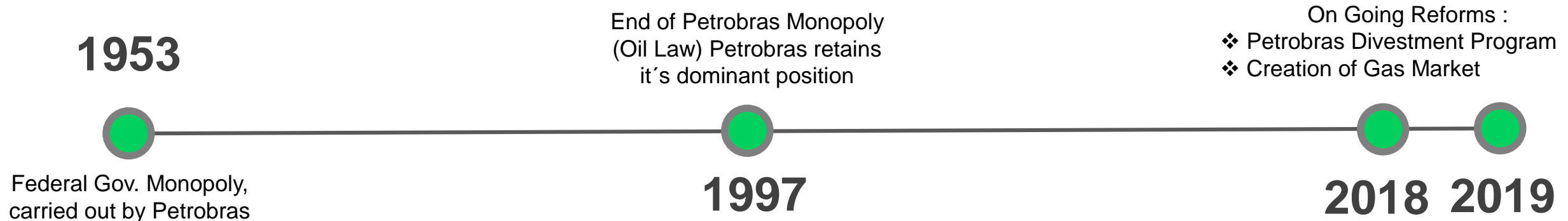
Brazilian Oil & Gas Brief Industry Timeline



Upstream



Downstream



Recent Legal and Regulatory Enhancements



Key Enhancements

- | | |
|--|---|
| <ul style="list-style-type: none"><input type="checkbox"/> Petrobras is no Longer Required to be the Sole Operator at Pre-Salt (Law 13,365/2016)<input type="checkbox"/> REPETRO extension – “Special Tax Regime for E&P Activities”<input type="checkbox"/> 5 Yrs Bidding Rounds Calendar<input type="checkbox"/> New Local Content Rules (2017 onwards and old Contracts) | <ul style="list-style-type: none"><input type="checkbox"/> Royalties Reduction (incremental production in mature fields)<input type="checkbox"/> Open Acreage (Entire Onshore and some Offshore)<input type="checkbox"/> Reserve Based Landing (RBL)<input type="checkbox"/> Extension of Exploration Phase for Rounds 11 and 12 |
|--|---|

Substantial Industry Investments (2017/2018)

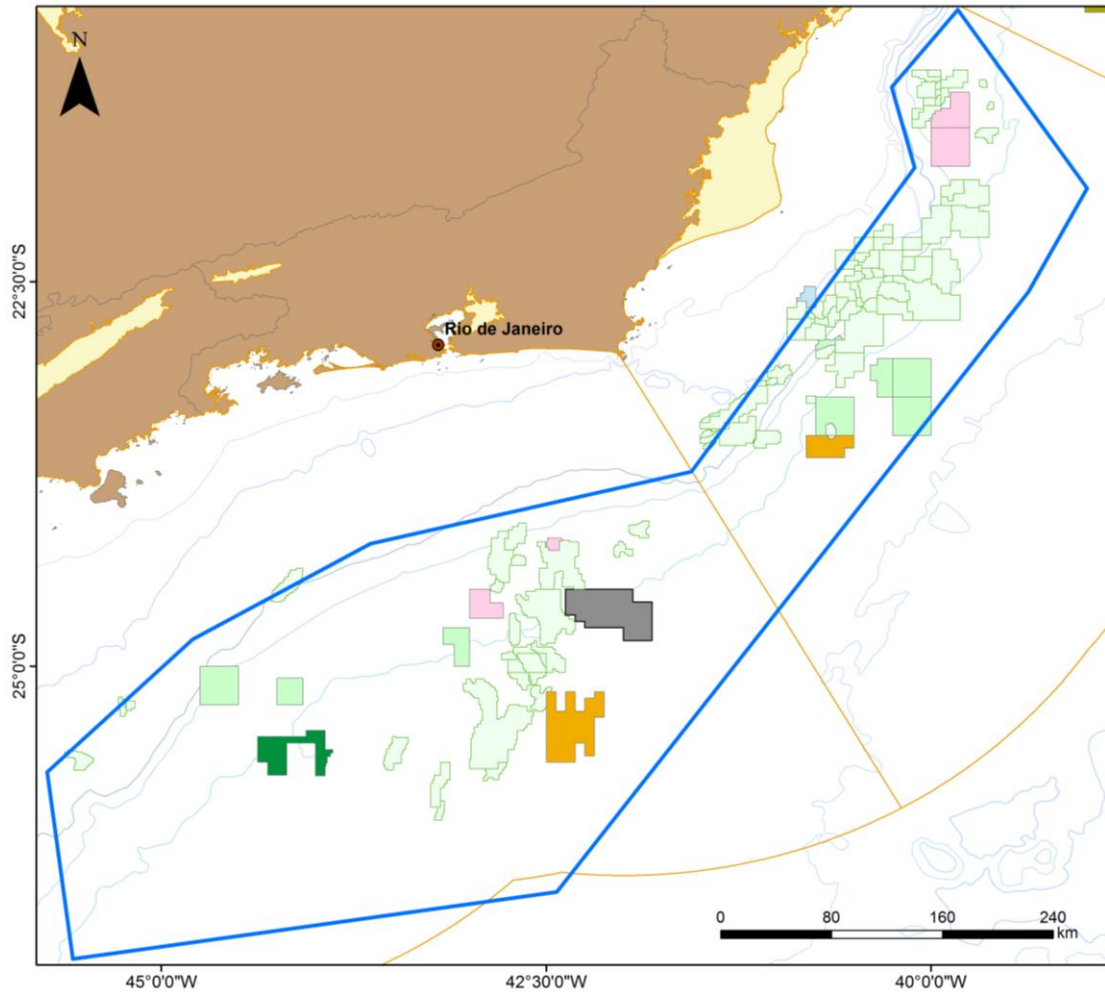


Bidding Round	Acquired Blocks	Signing Bonus (USD billion)	Registered Companies	Winner Companies	Premium
	37 (24 onshore and 13 offshore)	1.035	32	17	1,556%
	3	0.889	10	7	261%
	3	0.768	14	6	202%
	3	0.849	16	7	202%
	22	2.159	17	12	622%
	4	1.838	12	8	170%
Total	72	7.5	<i>Intense Competition Leveraged Bid Rounds Premiums</i>		

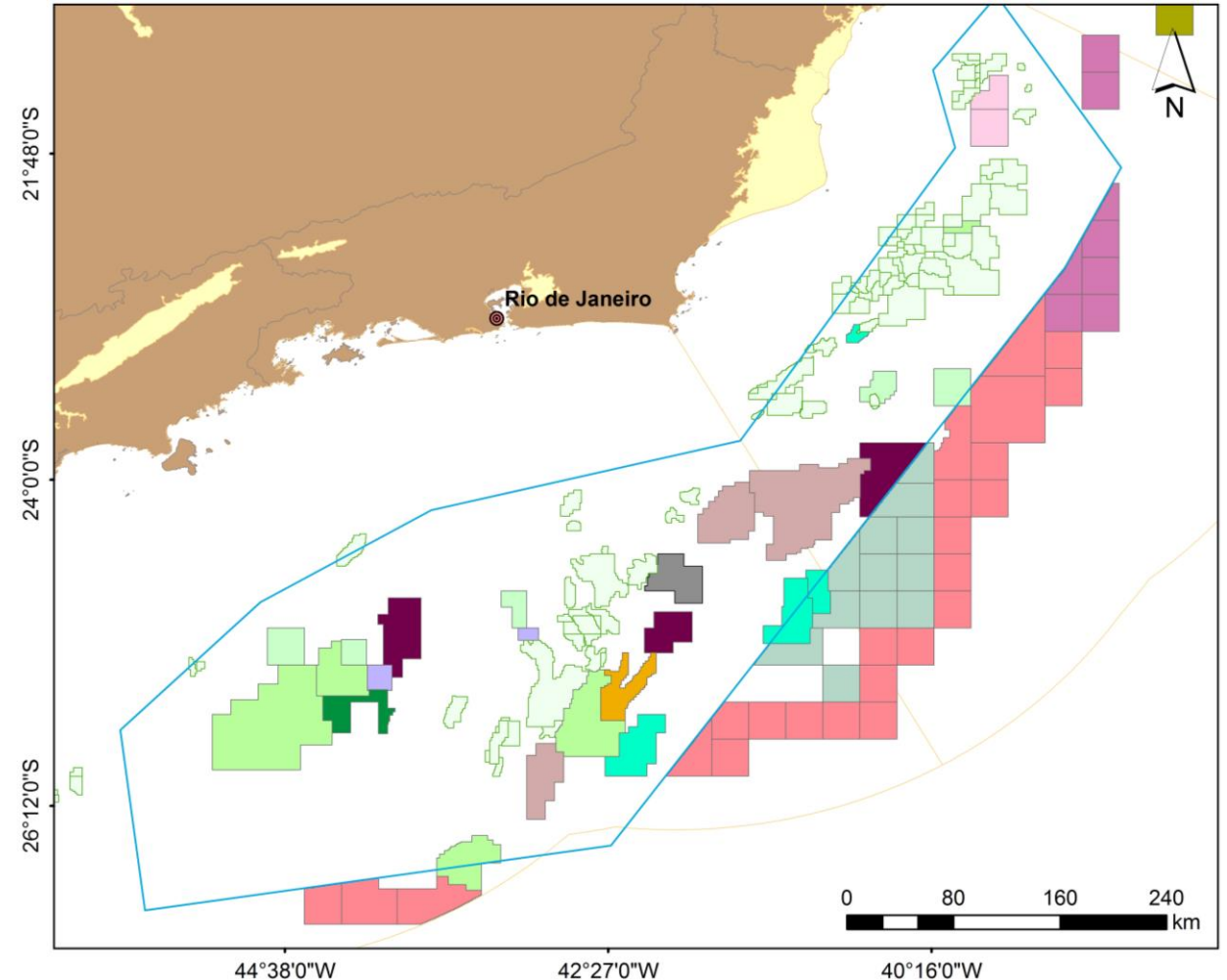
Pre-Salt Exploration has Dramatically Increased!



2015



2019 (Includes R16 & LP6)



Expected Impact from Recent Bid Rounds...

2017-2018



Brasil
14th 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

Enhanced Oil Recovery Initiatives and Impact



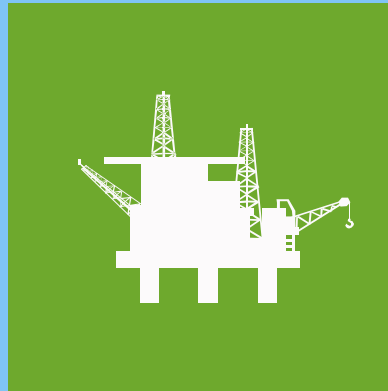
Three Different E&P Environments



Onshore

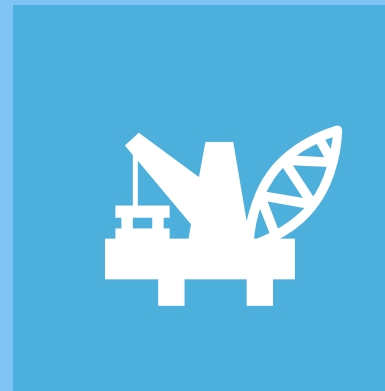
Mature Basins and New Frontier Basins (mostly gas prone). Potential for unconventional to be unleashed.

Production



Conventional Offshore

All the East Margin of the Pre-Salt region and Equatorial Margin, including **New Frontier areas** and a significant number of large Mature Fields.

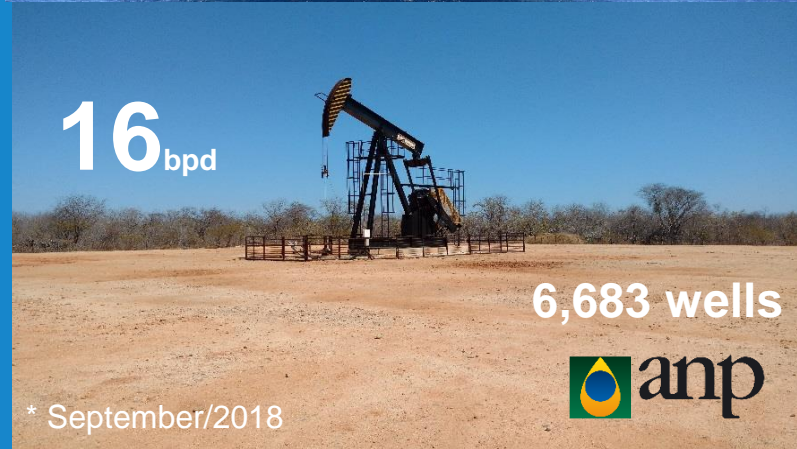


Pre-Salt

One of the World's
hottest oil play, home
to the largest
offshore oil
discoveries in the last
decade, **High
Quality and High
Productivity
Reservoirs**

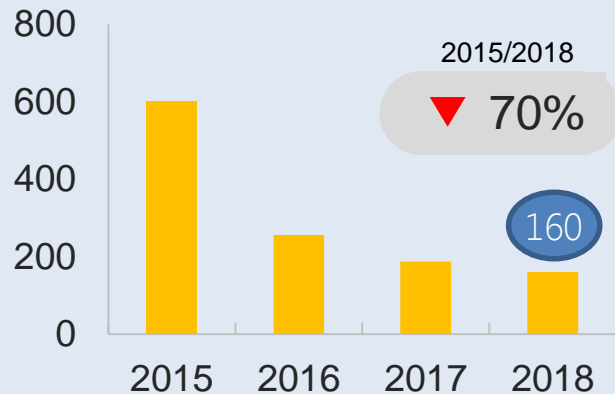


Average oil production per well

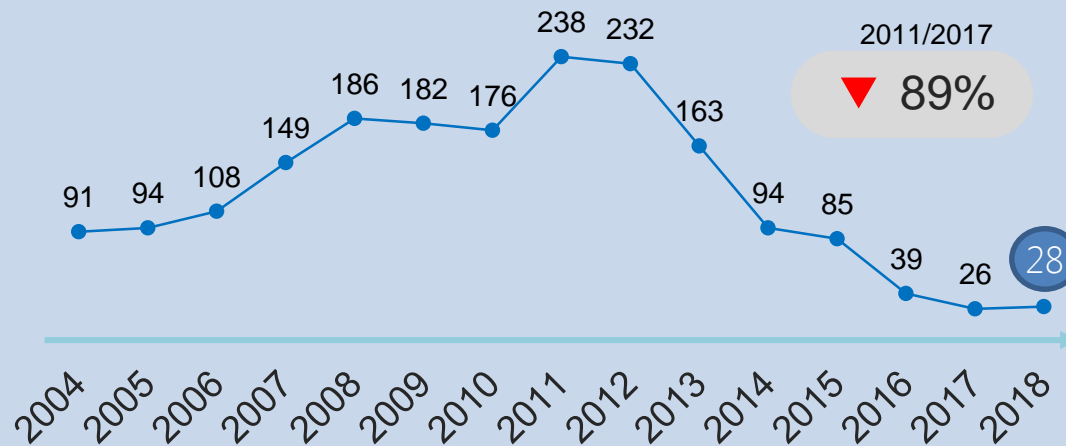


Increasing Exploration and Revitalizing Activities

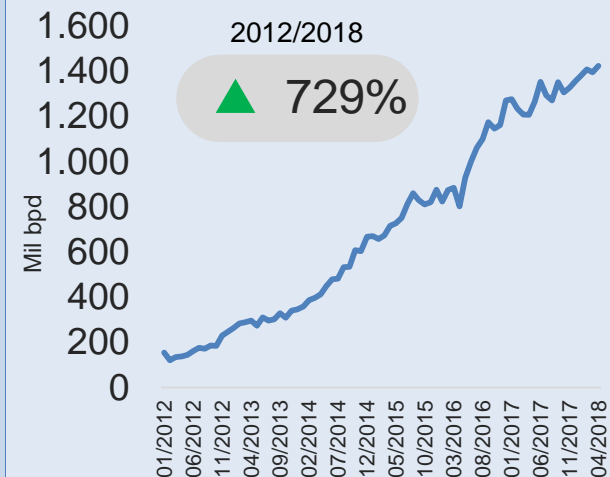
Development Wells Concluded



Concluded Exploration Wells



Pre-Salt Oil Production

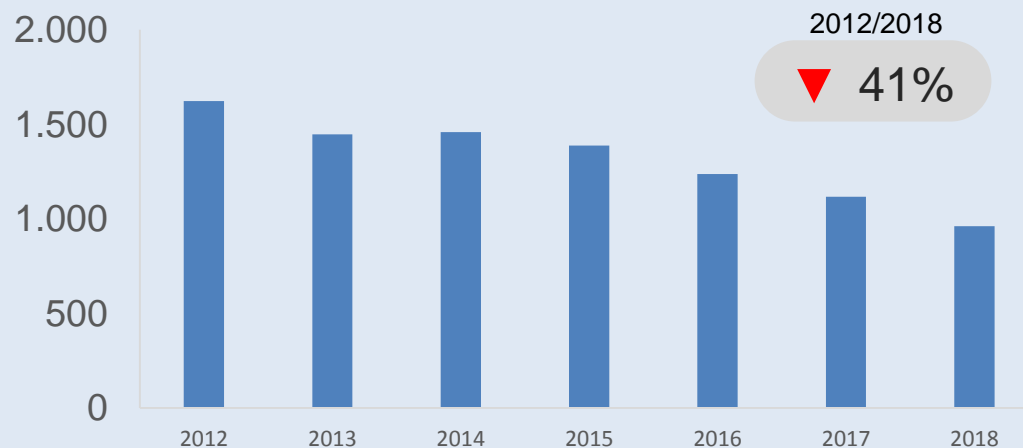


2012/2018
▼ 38%

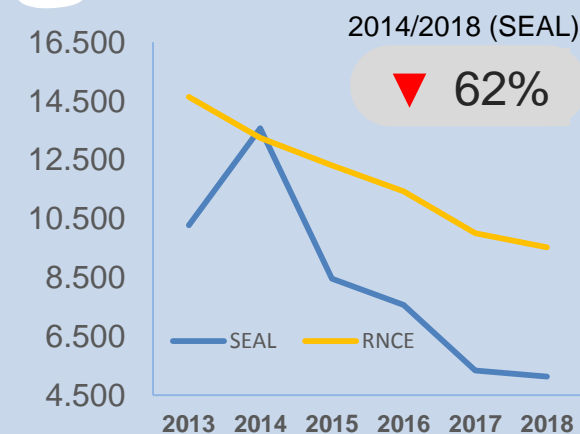
Onshore Oil Production
(April, 2019)

103,717

Post-Salt Campos Basin Oil Production



Northeast Basins Offshore Oil Production



Petrobras Divestment Plan (~254 Fields)

❖ Unique opportunity to **Revitalize** activities in the **Onshore and Shallow Water** fields by attracting specialized mature field players

❖ **Increase Production and Recovery Factor** of the mature basins (specially in Campos Basin)

(2012/2018)

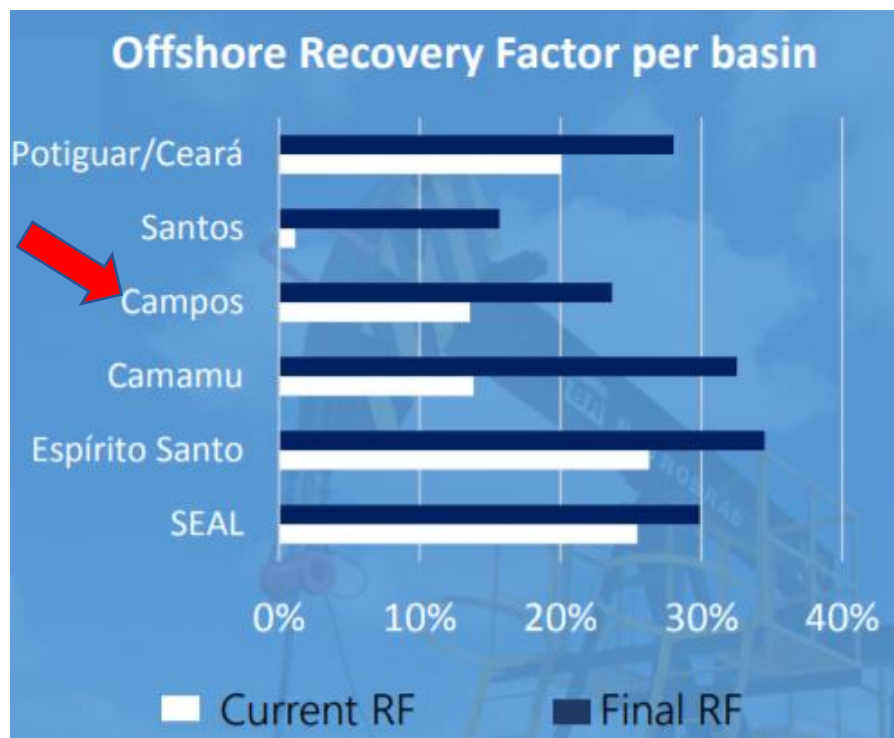
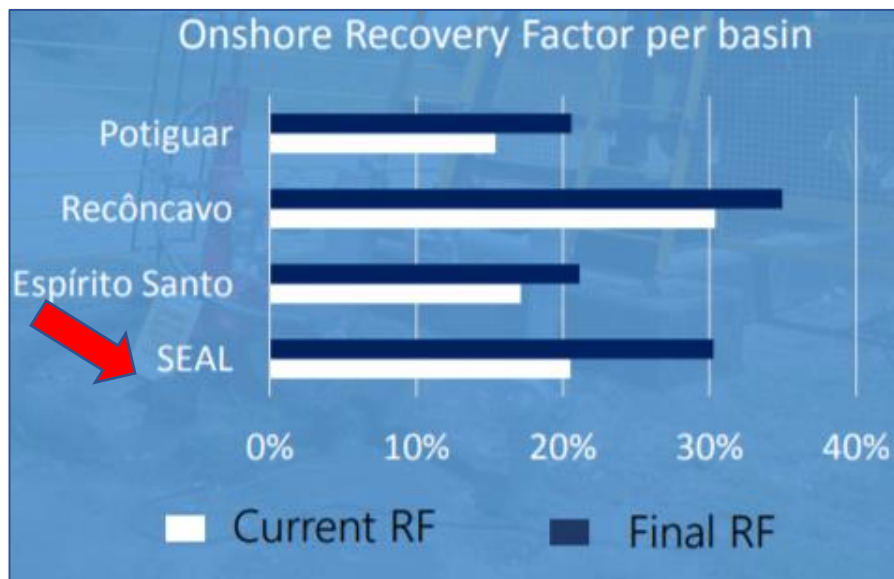
▼ ~30%

The production has declined 30% over the last 5 years

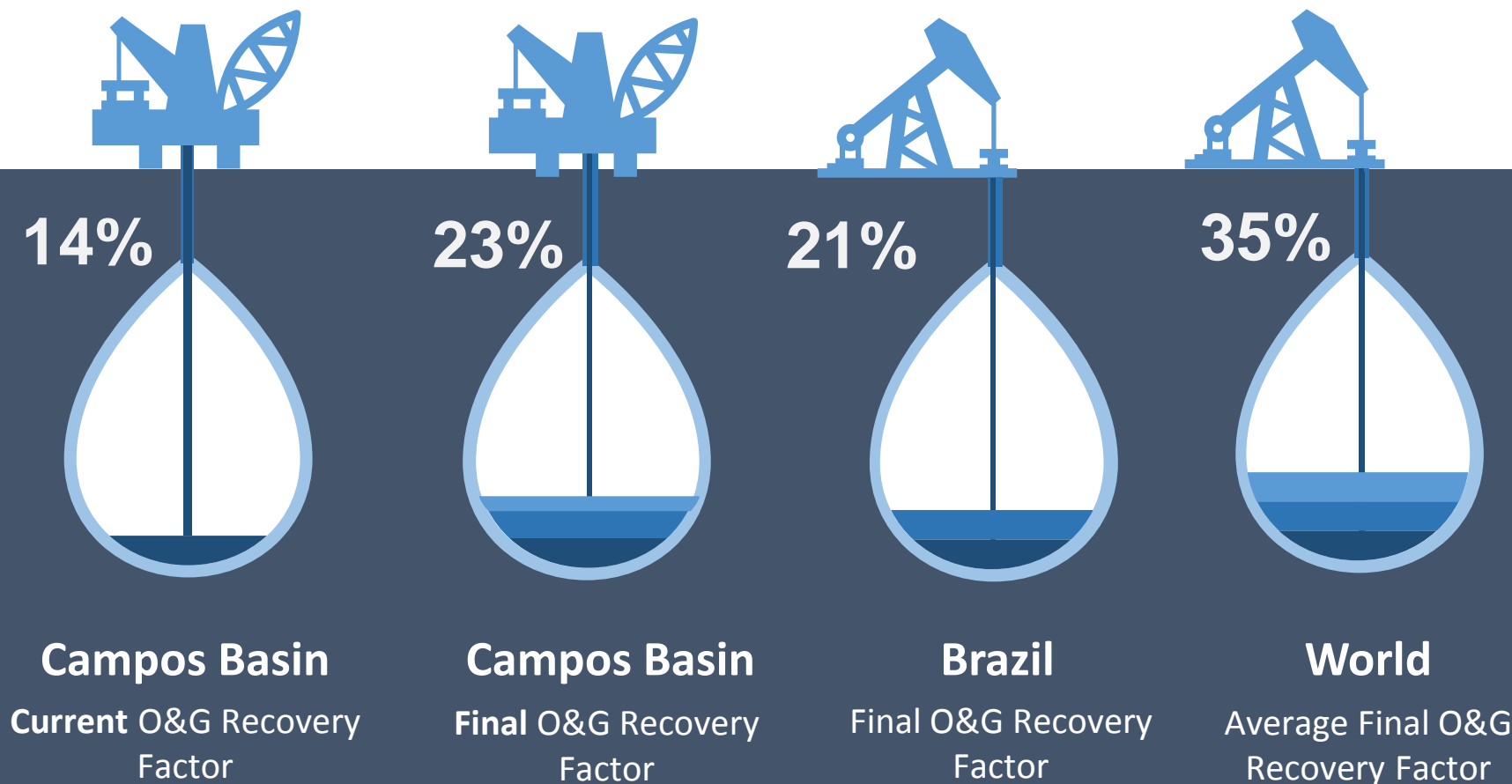
(2012/2018)

▼ ~75%

Development drilling has declined 75% in the last 5 years



Potential Impact on Maximizing The Recovery Factor



1% addition in Campos Basin:

985 Mboe

New Reserves

1% addition in Onshore:

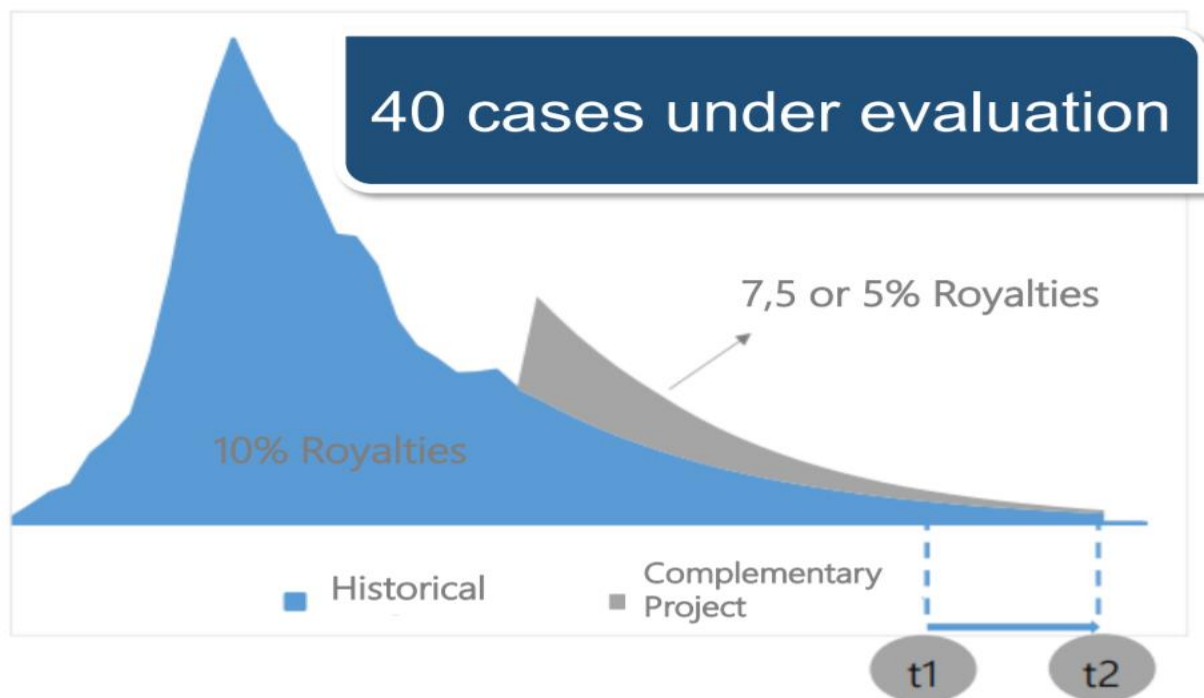
200 Mboe

New Reserves

Royalties Reduction & Maximize Field's Recovery Factor

ANP Regulation on Royalties Reduction (up to 5%) on Incremental Production for Mature Fields

- ❖ *Mature Fields: 25 years in Production and/or;*
- ❖ *Cumulative Production $\geq 70\%$ of Estimated Recovery of 1P Reserves*
- ❖ *Number of 241 Matures Fields Eligible (53% of Brazilian Fields & Campos Basis Represent 54%)*



Promote Field **Life Extension**

Maximize **Recovery Factor**

Increase project **Profitability**

More **Jobs** and **Income**

Increase **Mature Fields**
attractiveness

ANP International Collaboration with NPD



Main Objectives:

- ❖ Boost Exploratory Activities
- ❖ Increase Number of Discoveries
- ❖ Improve Recovery Factor

Partnering in Key Areas

- ❖ Mutual Support and Advice
- ❖ Share Experiences (IOR\EOR and Data Management)
- ❖ Identify Areas of Expertise & Collaboration
- ❖ Industry Development /Incentives

Regulatory Practices

- ❖ Structure
- ❖ Regulatory Targets
- ❖ Oversight
- ❖ Performance Measurement



Upcoming Bidding Rounds



Bidding Round 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 16
OIL AND GAS CONCESSIONS

PRE-SALT
Brazil 6
PRODUCTION SHARE

3rd Quarter

2020

PRE-SALT
Brazil 7
PRODUCTION SHARE

ROUND
Brazil 17
OIL AND GAS CONCESSIONS

To be
defined

2021

PRE-SALT
Brazil 8
PRODUCTION SHARE

ROUND
Brazil 18
OIL AND GAS CONCESSIONS

To be
defined

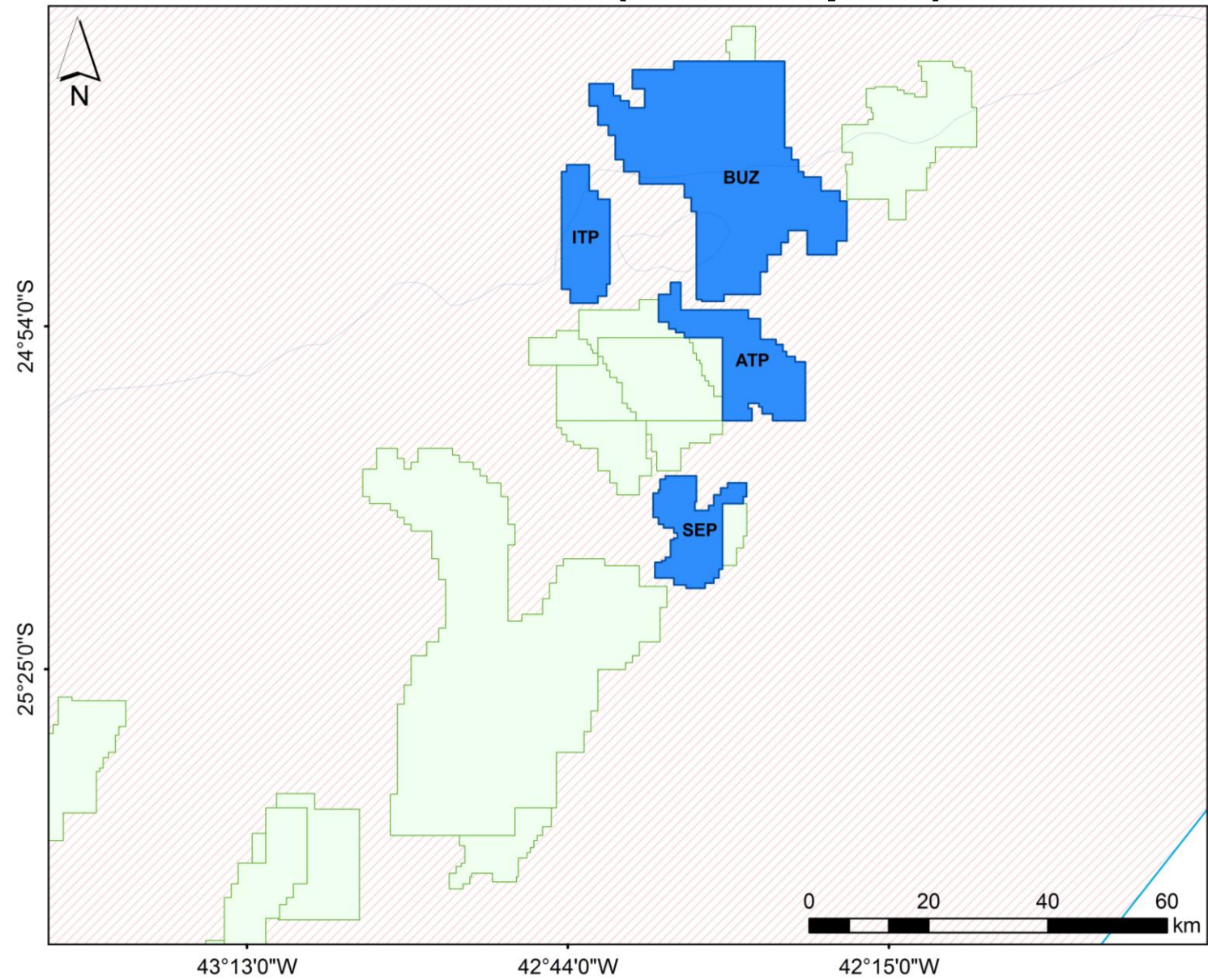
TRANSFER OF
RIGHTS SURPLUS
Brazil
PRODUCTION SHARE

Transfer of Rights Surplus

Auction Date: Nov 6th, 2019

AREA	BONUS (BILLION REAIS)	PROFIT OIL (% MIN)
Atapu	13,742	25.11
Itapu	1,766	19.82
Buzios	68,194	23.25
Sepia	22,859	27.65
TOTAL	106,561	

Potential Recoverable Resources:
~ 6.0 – 15.0 Billion boe (ToR Surplus)

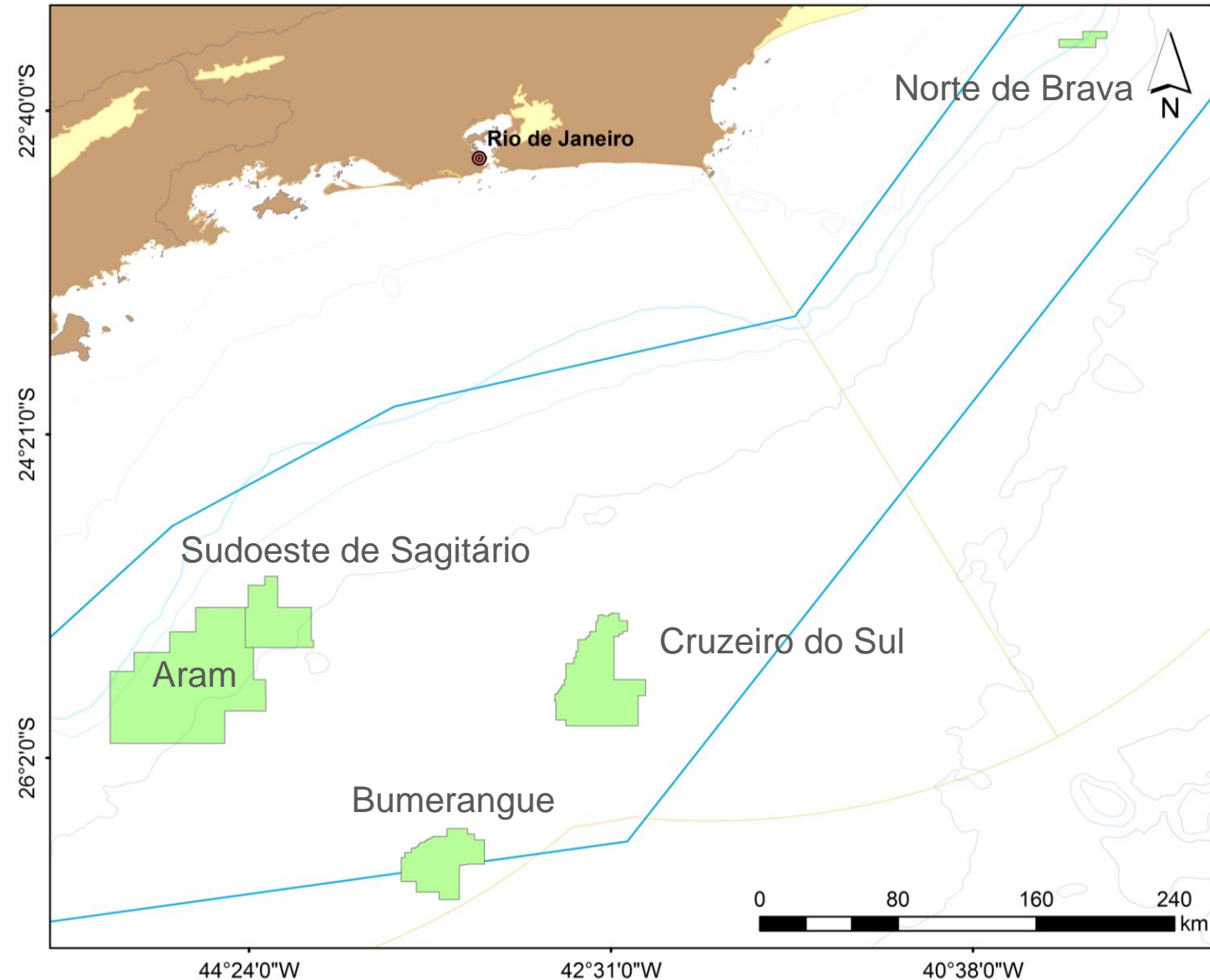


6th Pre-Salt Licensing Round

Auction Date: Nov 7th, 2019

AREA	BONUS (BILLION REAIS)	PROFIT OIL (% MIN)
Aram	5.05	24.53
Bumerangue	0.55	26.68
Cruzeiro do Sul	1.15	22.87
Sudoeste de Sagitário	0.50	26.09
Norte de Brava	0.60	36.98
TOTAL	7.85	

**Unrisked Oil in Place Volume ~
42 Billion bbl**



16th Bidding Round

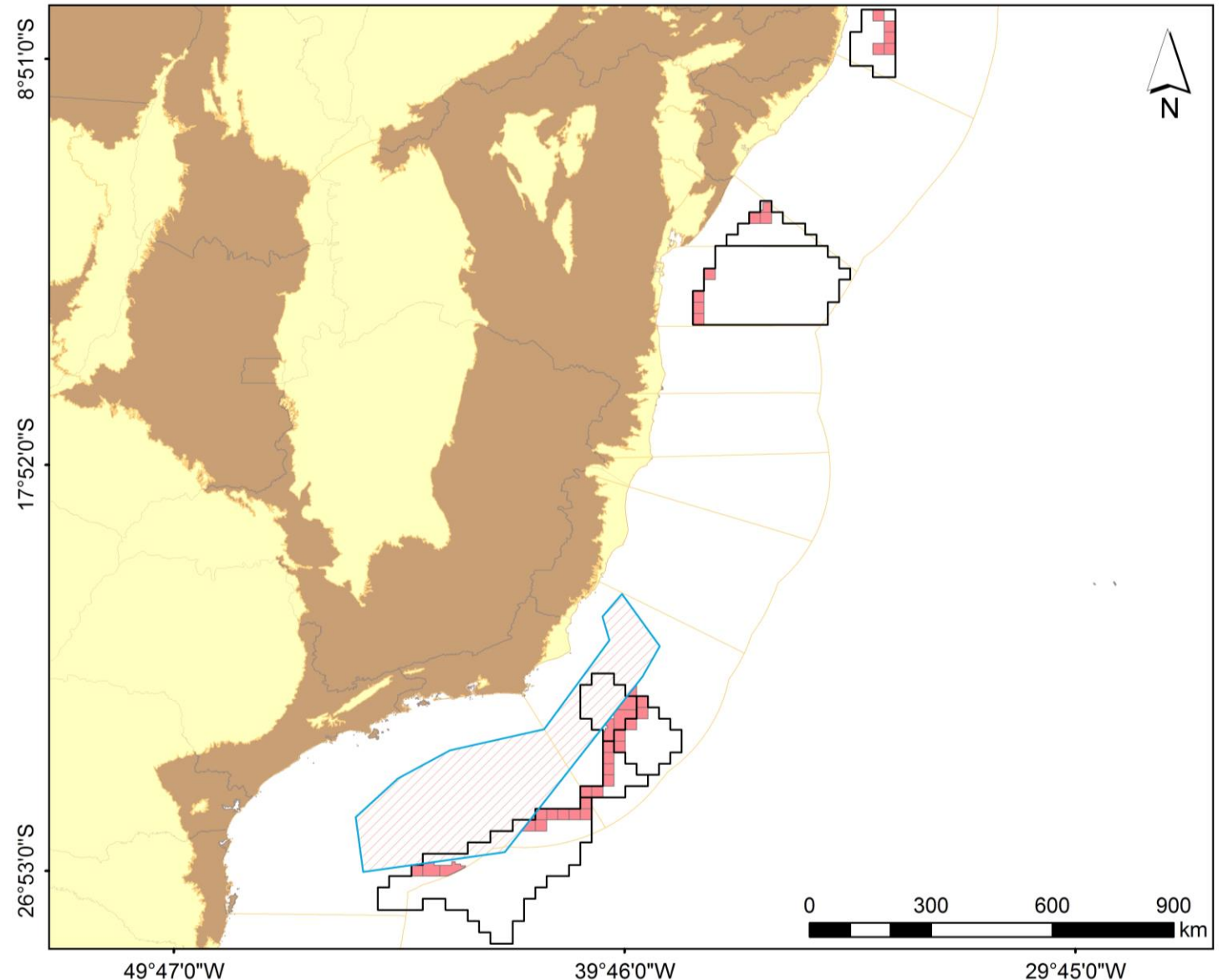
36 blocks

~ 29,000 km²

~ BRL 3.2 B (min. Signing Bonus)

- ❖ Pernambuco-Paraiba
- ❖ Jacuipe
- ❖ Camamu-Almada
- ❖ Campos & Santos Basins

Auction: Oct 10th, 2019

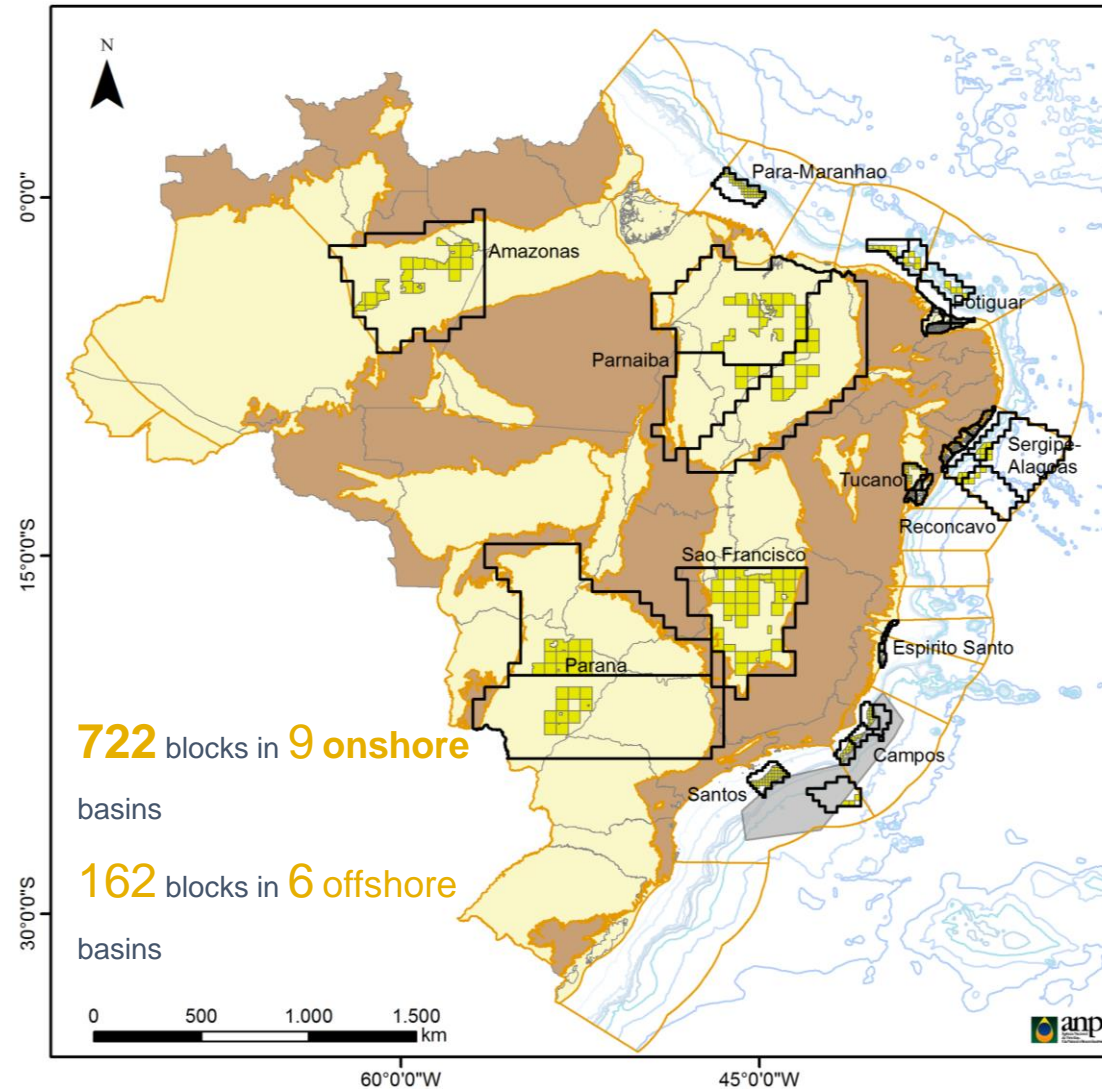


Open Acreage



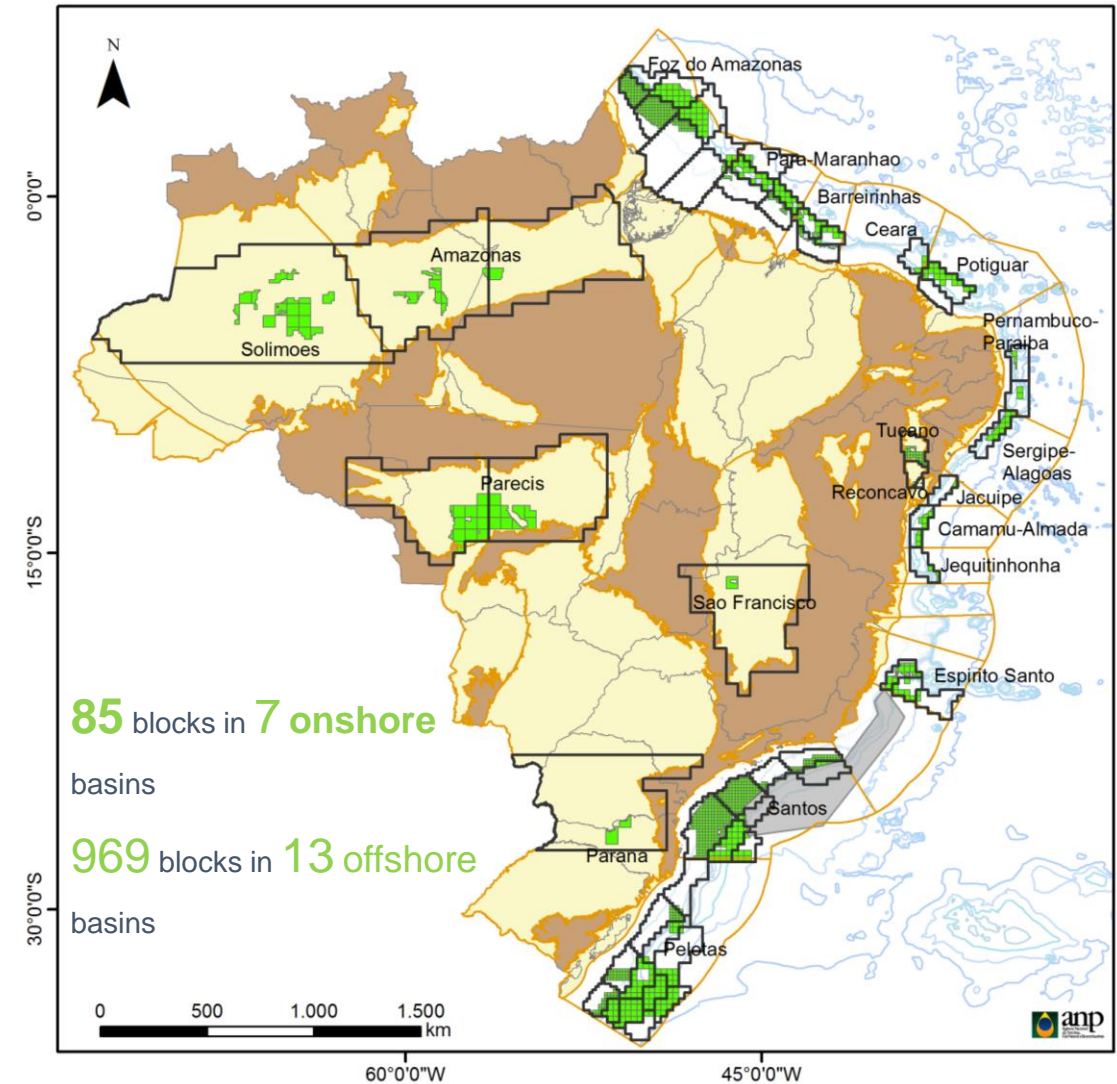
1st Wave

Currently, there are 600 blocks up for offer



2nd Wave

More than 1,000 blocks will be up for offer



Final Remarks



Brazil E&P Potential

7.5

M bpd

>50
New
FPSOs

Mature
Fields/
Basins

New
Frontier
Basins

Forecast (next 10 years)
Transfer Rights Upside
• ~ + 2.0 M bpd

The Most Prominent
deepwater environment

Improve Recovery Factor
1% addition
2.2 Bboe reserves
US\$18B investments

We barely Know our
Potential.
Unconventional resources
under discussion

Contracted / In Progress

Need 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 Environments.

Attract the Right Players

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

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

Increase E&P Activities

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

Create a Secondary Market
Attract mid/small size companies

Maximize Production

- ❖ Diversity of Players
- ❖ EOR/IOR initiatives
- ❖ New R,D&I focus
- ❖ Financing Opportunities (e.g RBL)

Brazilian National Agency of Petroleum, Natural Gas and Biofuels ANP

Av. Rio Branco, 65, 12º - 22º andar
Rio de Janeiro – Brasil

Tel: +55 (21) 2112-8100

Additional Information

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

www.anp.gov.br