

The Oil and Gas Industry in Brazil

Upcoming Bidding Rounds and Opportunities

Heloisa Borges Bastos Esteves

National Agency of Petroleum, Natural Gas and Biofuels



Notice

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Energy transition is the future

The competition in the energy markets will intensify



The global energy mix will be the most diversified the world has seen until 2040, with oil, gas, coal and non-fossil fuels, each contributing about 25%



Demand for oil will grow, but will peak in the late 2030s



Demand for natural gas grows strongly and surpasses coal as the second largest source of energy

Brazil needs to boost O&G activities to produce its reserves while they still have value

Electrification and the transition to a low carbon economy have already started



Society and **Governments** made that choice

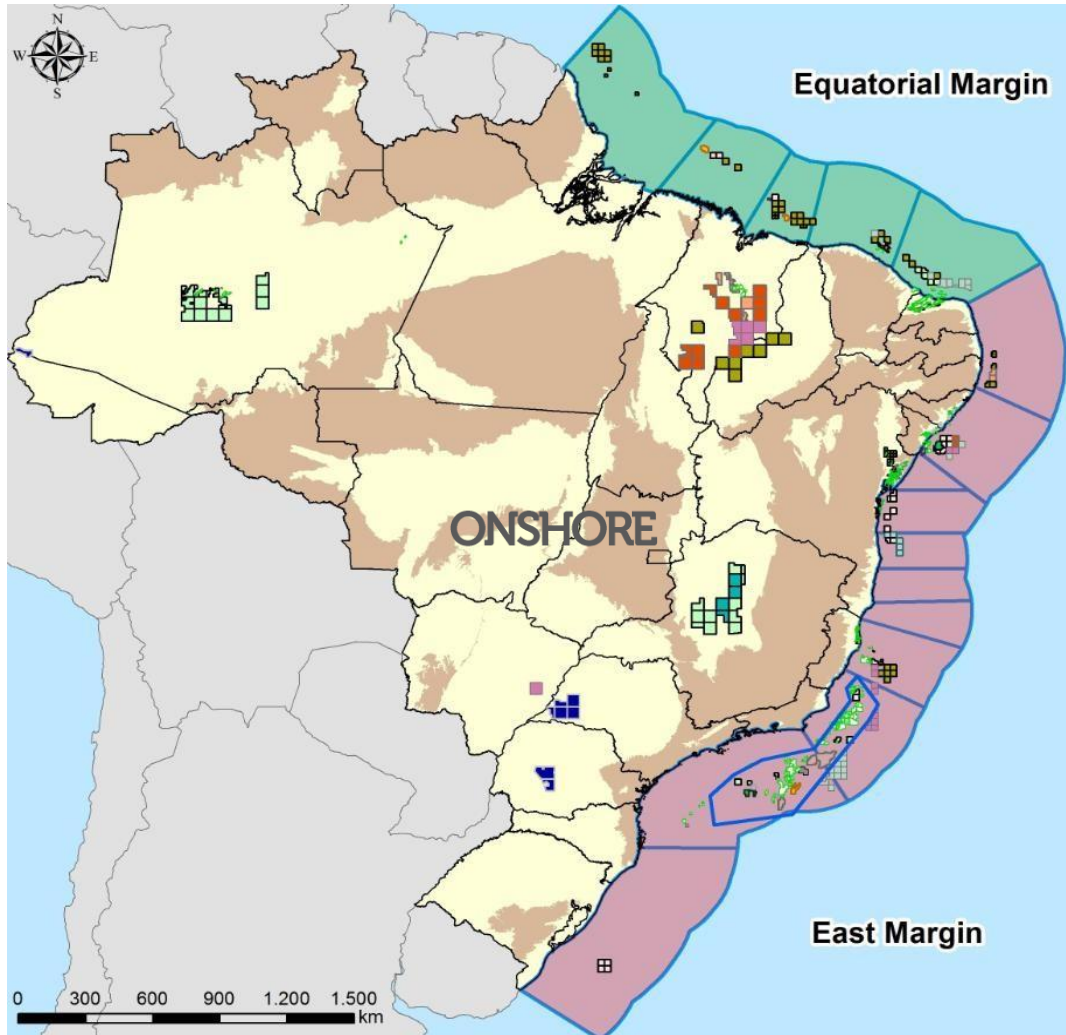


Changes in **mobility** (electric, Self-driving/ autonomous vehicles, app)



Technological Disruptions may speed the change

A lot has been done, but we still need to unlock our full potential



Brazil is a country of continental dimensions, however...



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

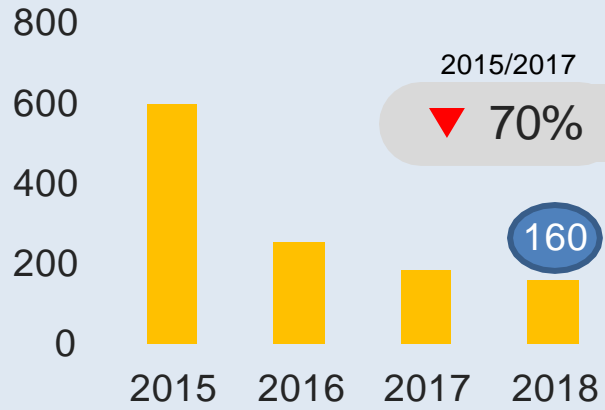


2 basin with no wells

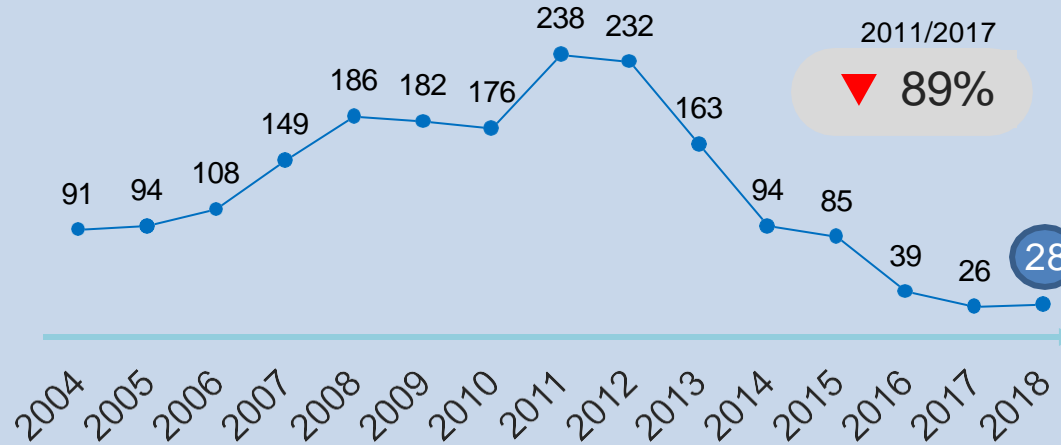


Only **30.000** drilled wells. None them with unconventional drilling techniques.

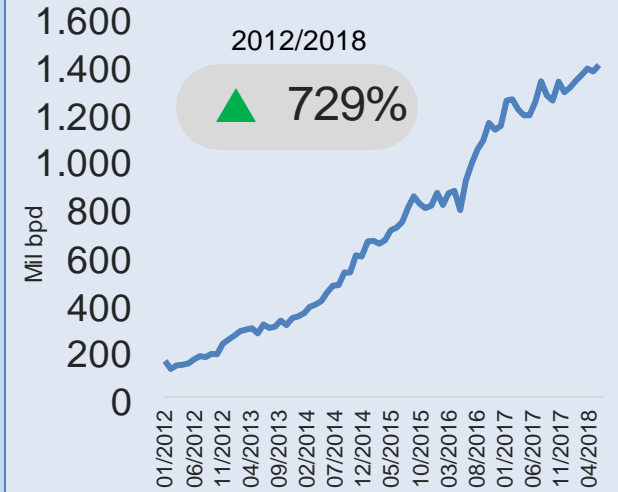
Concluded Development Wells



Concluded Exploration Wells



Pre-salt Oil Production

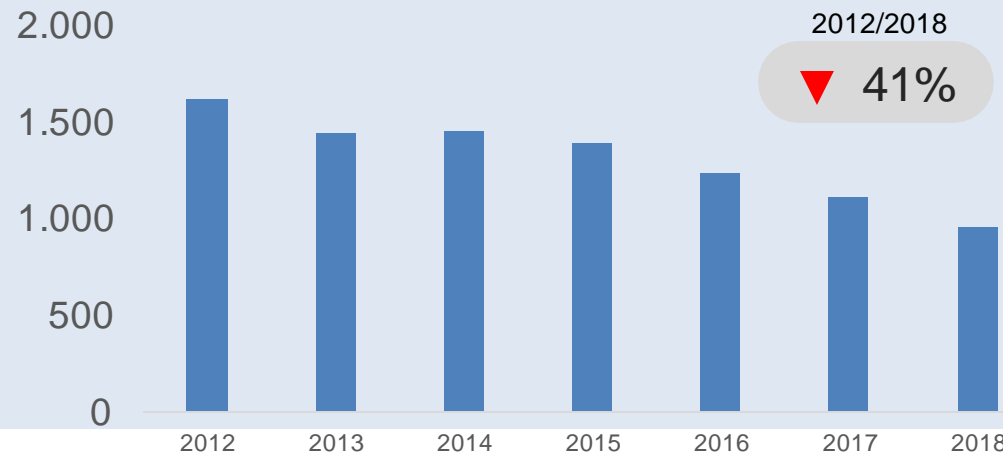


2012/2018
▼ 38%

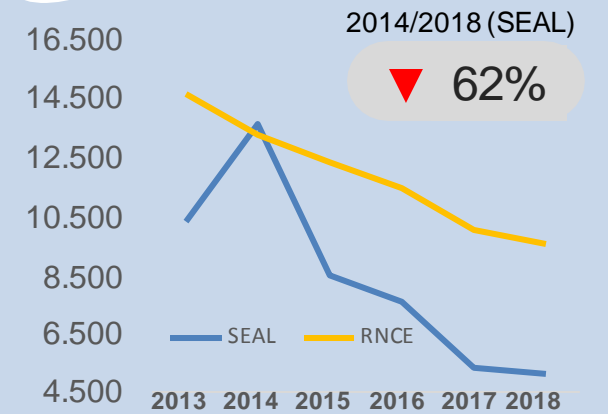
Onshore Oil Production (October/2018)

107.415

Campos Basin Post-salt Oil Production



N.E. Basins Offshore Oil Production



Attracting the right players to each opportunities

Pre-Salt



Conventional Offshore



Onshore



01 Supermajors
Great Companies

02 Great Companies
Exploration Experts
Mature Fields Operators

03 Small and Medium-sized Companies

Supported by the financial market and demanding suppliers and companies of goods and services

A lot has been done

End of
2016

Petrobras no longer the Sole Operator
(Law No 13,365/2016)

2017

Bidding Rounds Schedule until 2019

(CNPE Resolution No 10/2017)
New Local Content Rules
(CNPE Resolution No 07/2017)

New E&P Policies
(CNPE Resolution No 17/2017)

Prorogation of Exploration Phase of the 11th and 12th Bidding Rounds (ANP Resolution No 708/2017)

REPETRO extension
(Law No 13,586/2017)

2018

ANP Resolution on Exemption of Local Content for agreements until the 13th Bidding Round

(ANP Resolution No 726/2018)
ANP Resolution on the reduction of royalties on incremental production (ANP Resolution No 749/2018)

ANP Decision on Mature Fields Operated by Petrobras Agreements Assignmet Resolution and reserve based lending

2019

Review of the Agreement of the Transfer Of Rights Surplus and Guidelines for the Bidding Round of the Surplus

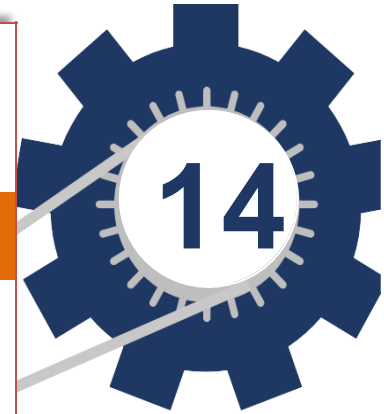
Open Acreage

Decommissioning Resolution (under public consultation)

Abandonment Guarantee Resolution (under public consultation until the end of the year)

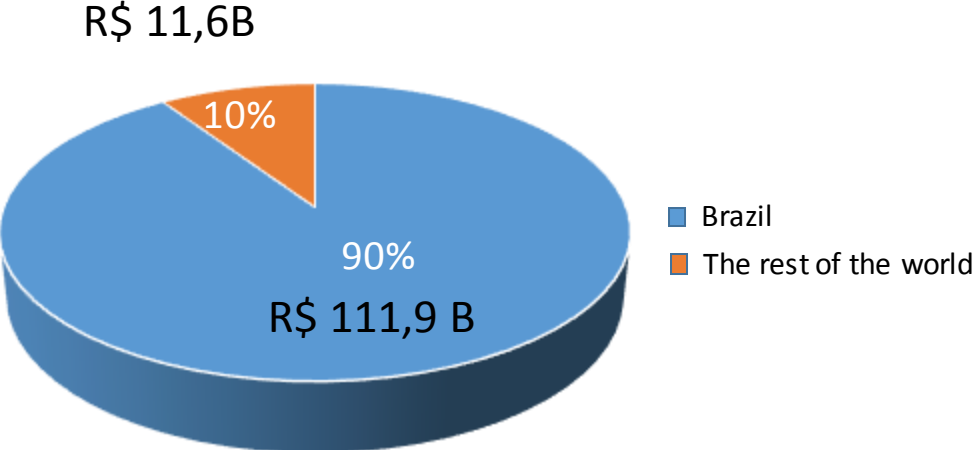
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Bidding Rounds (2017-2021)



Industry Escalade

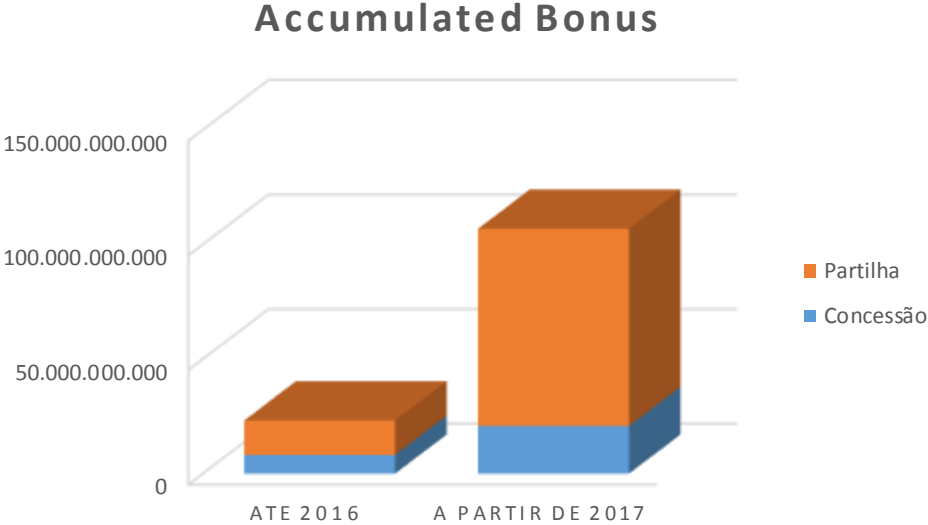
Concentration of World E&P bonuses in Brazil from 2017



* Based on the report published in the newspaper O Globo of 11/03/2019

R\$ 220 B, anual average of exploratory investments in the world (includes bônus payments)

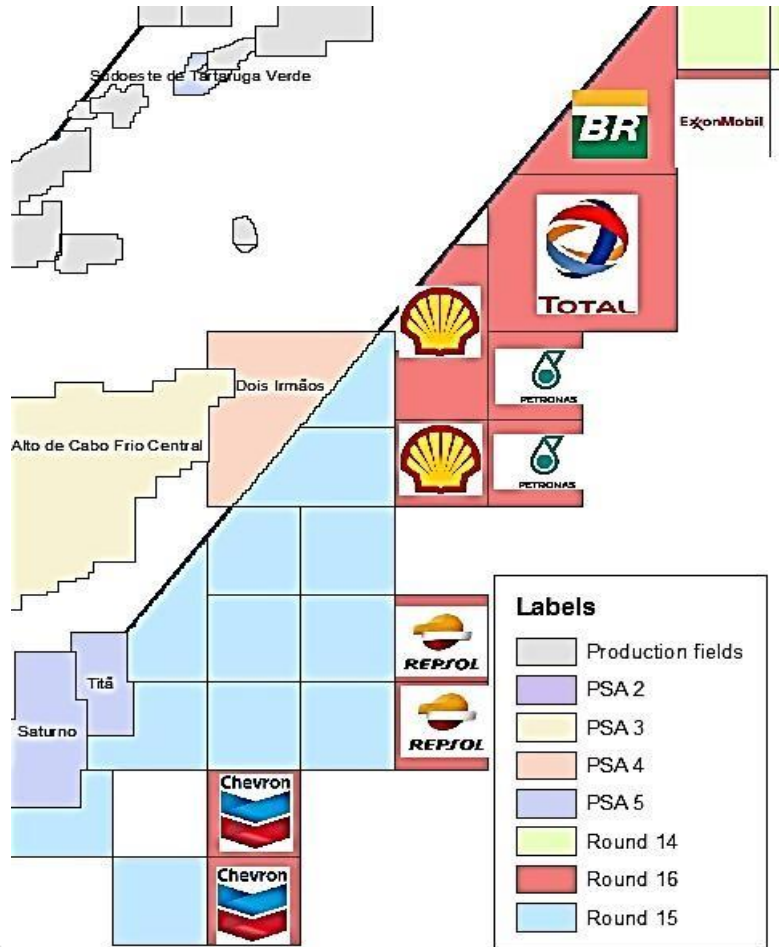
The bonuses collected in 2019 represent 40% of this amount



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New Operators

16th Bidding Rounds



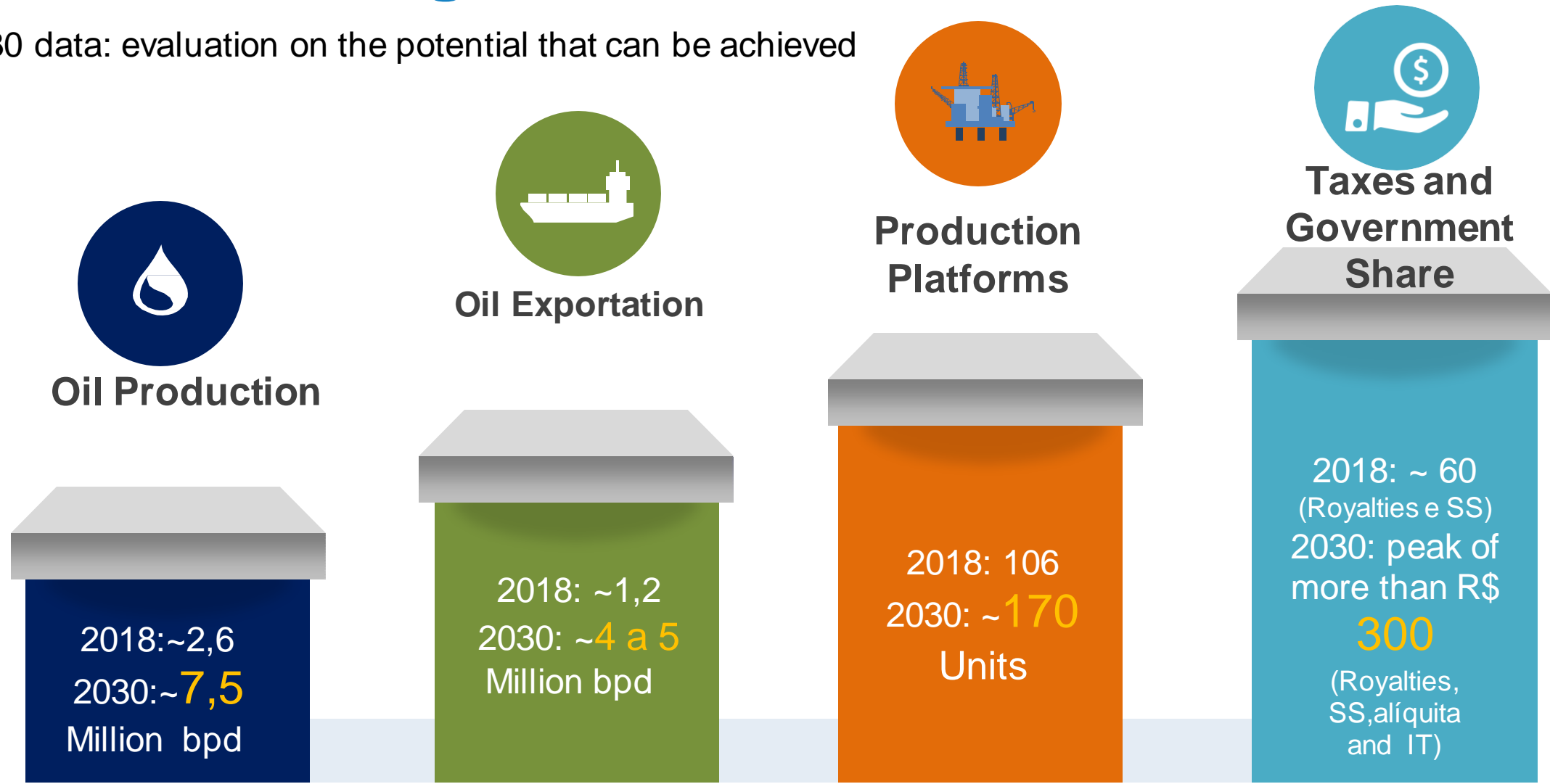
Open Acreage

- 10 new independent Onshore Operators
- Increase of 40% in the quantity of independent operators

Increase of 15% in the total of Exploration Agreements.

A drastic change in the industries activities

2030 data: evaluation on the potential that can be achieved



Brazil' Potential

7,5_M
bpd

Production Potential
in 2030

Contracted or ongoing

>60
New
FPSOs

The most prominent
Offshore
environment

Mature
Fields

Low recovery factor on
average. High potential for
attracting investments

New
Frontiers

The Brazilian potential is
unknown. The discussion
on the use of
unconventional resources
must increase

Potential Impacts on the Brazilian Economy

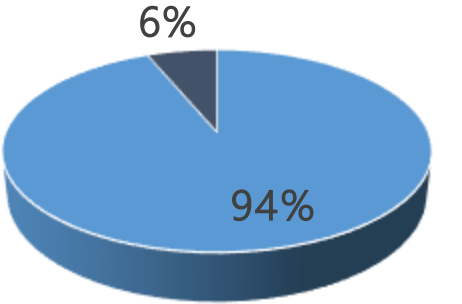
Bidding Rounds	Platforms*	Production Peak (MM bpd)	Nominal Investments (billions)*	Tax Revenue Nominal Values (billions)
BID until 2016	27	2,5	US\$ 130 (R\$ 520)	US\$ 450 (R\$ 1.800)
BID 2017, 2018 2019	22	2,5	US\$ 126 (R\$ 504)	US\$ 487 (R\$ 1.948)
Transfer of Rights Surplus	17	2	US\$ 105 (R\$ 420)	US\$ 489 (R\$ 1.956)
Aumento em 5% no Fator de Recuperação (revitalization)	-	11 Bi boe in new reservois	US\$ 90 (R\$ 360)	US\$ 55 only roalties (R\$ 220)

* Estimates

Investments (until ~ 2030)	~R\$ 1,8 trillions	Investments R,D&I R\$ 3 billion/ year, with peak around R\$ 5 billion/ year
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A diverse oil industry

Goal: to create a regulatory environment that enables the establish of a real oil industry in Brazil, with a significant number of players operating in each environment



■ Petrobras ■ Others

36 companies operate production fields in Brazil

Only 52 companies have oil production in Brazil

Only 7 companies operate production in Brazilian offshore

Petrobras' **divestment plan** (more than 100 concessions)

+ **Partnerships** with majors in the big mature fields

+ Bidding **Rounds/** Open Acreage



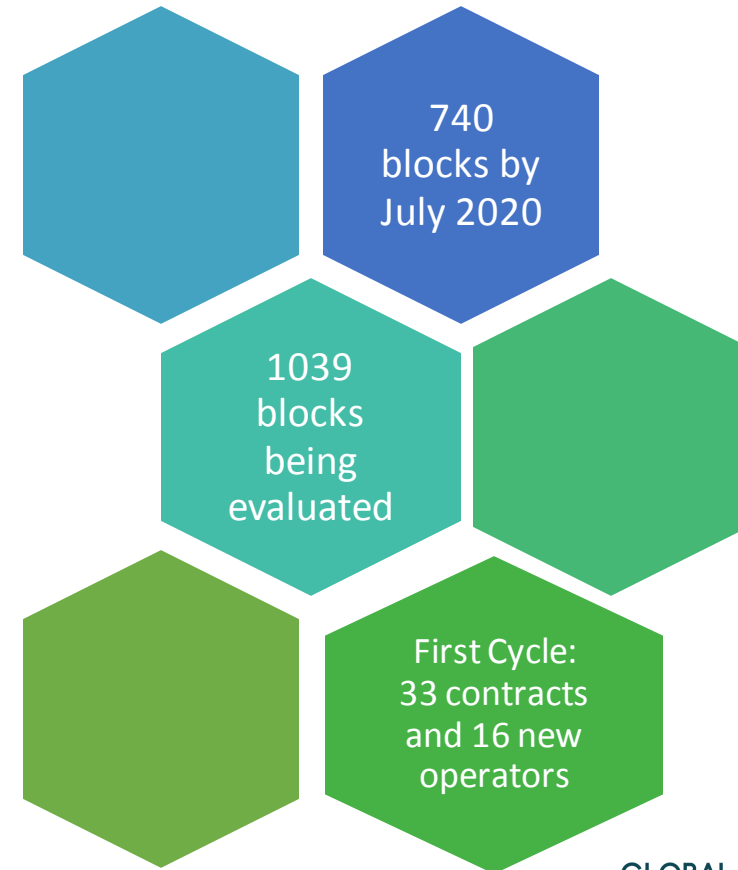
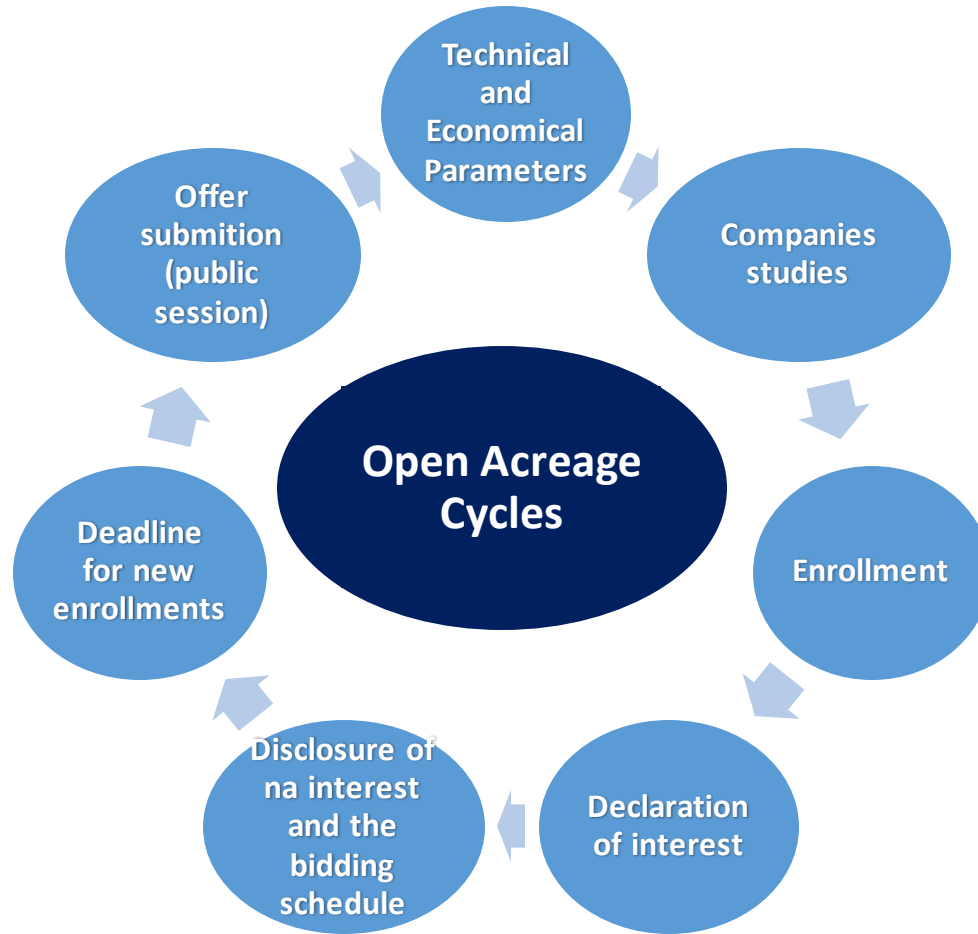
A diverse oil industry with **multiple players** and **operators**



94% of the Brazilian production is operated by Petrobras.

A **diverse** oil industry (open and competitive market)

Open Acreage: on demand Bidding Rounds





Opportunity in **E&P**: immediate certification of reserves; fast development of production; increase of reserves and of production



For the first time effective **opening** of natural gas market



Refining and Oil Supply: creation of a competitive marketing, open and diverse



Development of a modern, diverse and competitive chain of **suppliers**

This is, potentially, the **biggest** transformation in the sector, completing the opening started in 1997

**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

More information:

rodadas.anp.gov.br/pt/

rodadas@anp.gov.br

