

Setting the scene for well intervention in Brazil

UPSTREAM

1953

Petrobras' monopoly

1975

Risk Contracts: minimal impact

1997

End of monopoly (Oil Act)
Bidding Rounds (Concession contracts)

2010

New pre-salt law (Petrobras sole operator - PSC)

2018

New E&P policies (Petrobras repositioning (focus on large offshore fields, mature fields divestment))

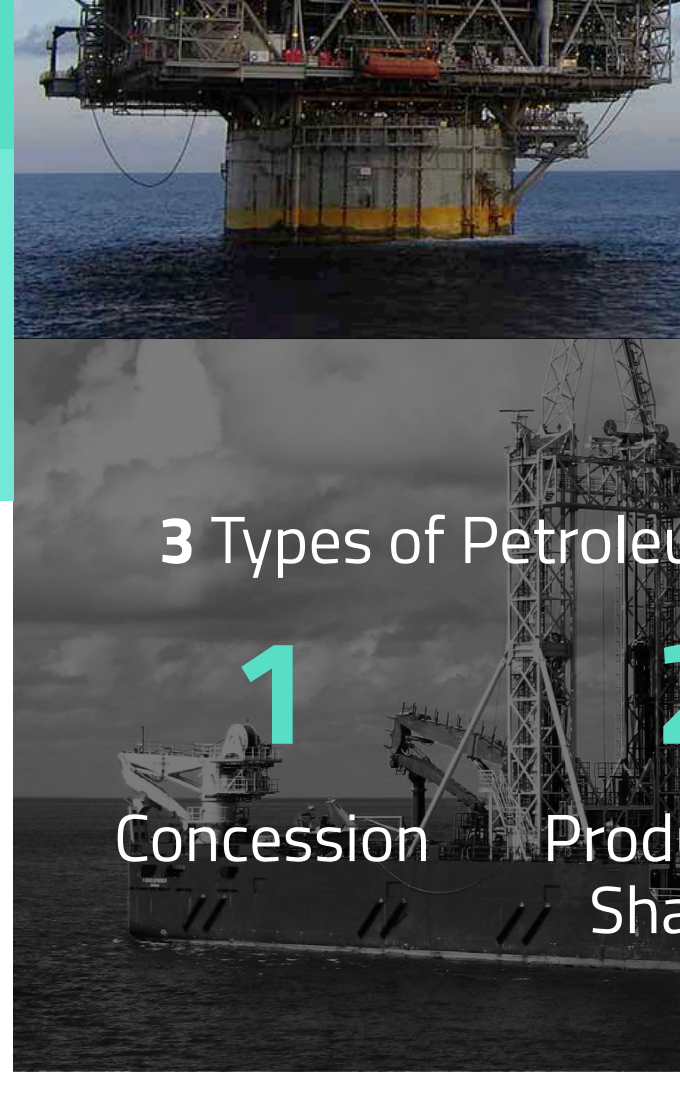
E&P SECTOR

The numbers do not reflect all the Brazilian potential

447 fields

339 exploratory blocks

105 group companies



2017

Crude oil exports: 1 million bpd

Required R&D investments: R\$ 1.3 billion

20 rounds carried out

A DIVERSE OIL INDUSTRY

ANP's 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

Only 29 companies operate production fields in Brazil

Only 43 companies produce in Brazil

Only 4 companies operate production in Brazilian deep water (Feb. 2018)

2018

6% Others

94% of the Brazilian production is operated by

BR PETROBRAS

94% Petrobras

3 Types of Petroleum Fiscal Regimes:

1

Concession

2

Production Sharing

3

Transfer of Rights

FUTURE

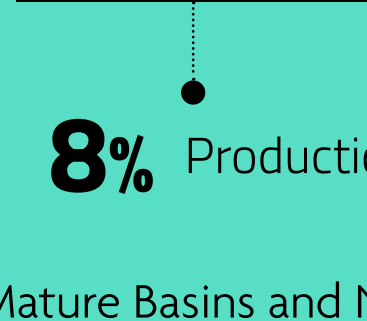


A diverse oil industry with **multiple players** and **operators** creating an open and competitive market

Petrobras' **divestment plan** (more than 100 concessions) + **Partnerships** with majors in the big mature fields to execute intervention projects + Bidding **Rounds**/Open Acreage

THREE DIFFERENT E&P ENVIRONMENTS

Onshore



8% Production

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

Conventional Offshore



37% Production

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

Pre-Salt



55% Production

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

Average oil production per well

16,691 bpd

85 wells

16 bpd

6,744 wells

1,702 bpd

627 wells

* September/2018

The main oil companies agree that oil demand will peak until 2040, leading to a **competitive** environment to produce the reserves worldwide

Environment	Number of Producer Wells	Oil Production (thousand bpd)	Average Oil Production per well (bpd)
Pre-Salt	83	1,408	16,968
Conventional Offshore	621	1,090	1,632
Onshore	6,994	117	17

Source - * Monthly Production Report from Feb/2018

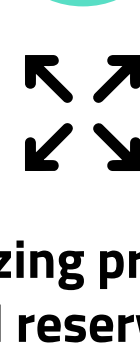
ANP'S THREE MAIN GOALS

1



Increasing the exploratory activities

2



Maximizing production and reservoirs recovery factors

3



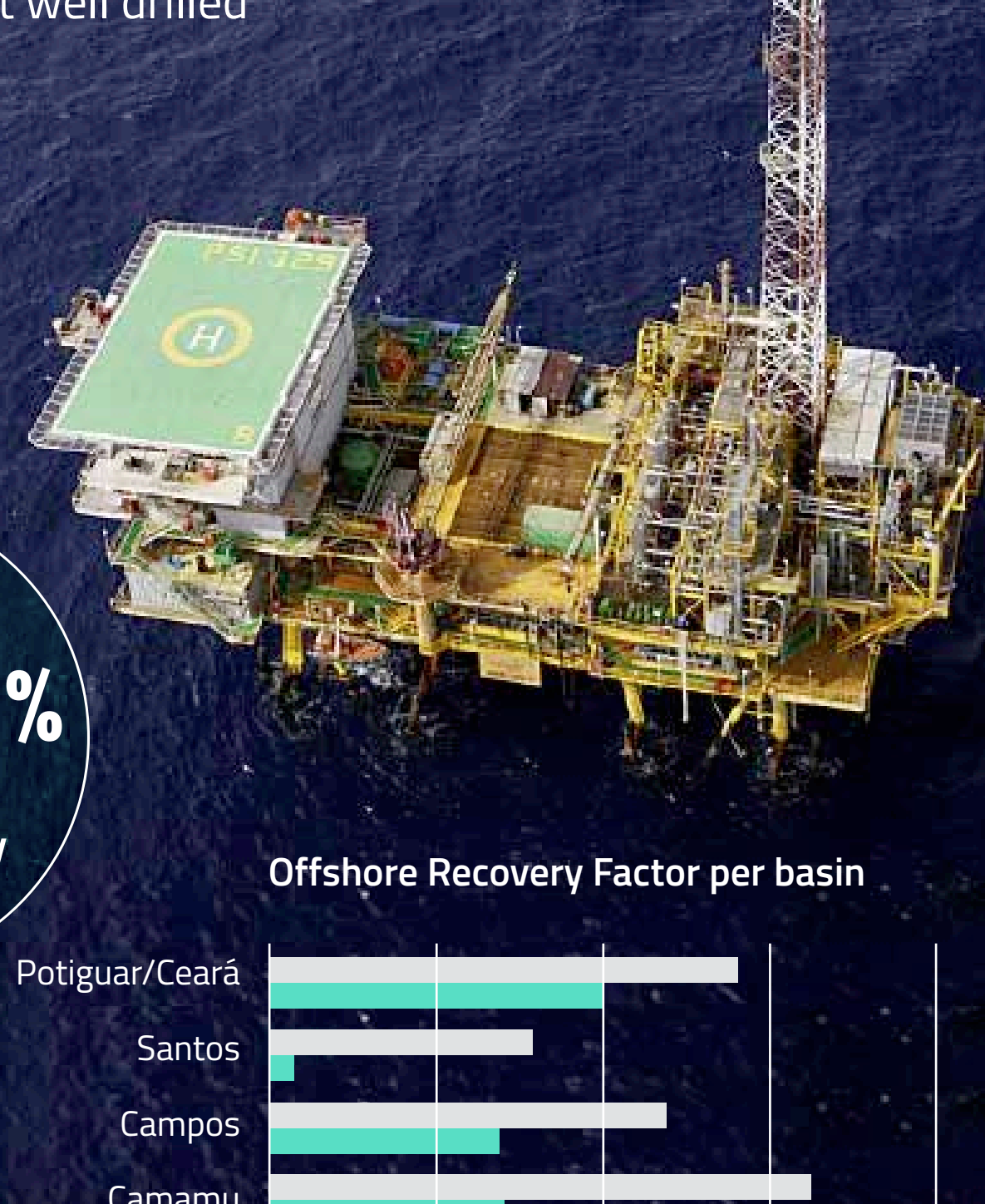
Attracting the right player for each environment

CONVENTIONAL OFFSHORE

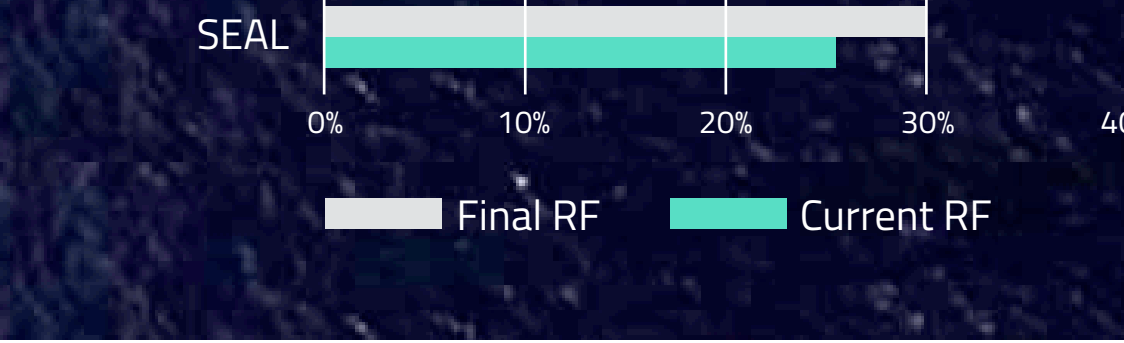
2 years without a single wildcat well drilled

24% Campos Basin Final Recovery Factor

Goal: to increase production and the **recovery** factor of the mature basins (specially in Campos basin) This can only be achieved by well intervention activities



Offshore Recovery Factor per basin



ATTRACTING THE RIGHT PLAYERS

Supported by oilfield service companies, suppliers and financial institutions

Pre-Salt



1

Supermajors
Major Operators

Conventional Offshore



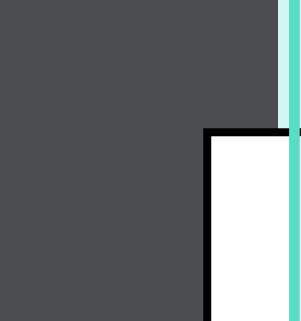
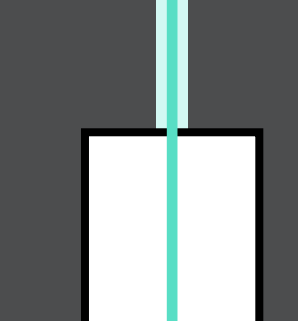
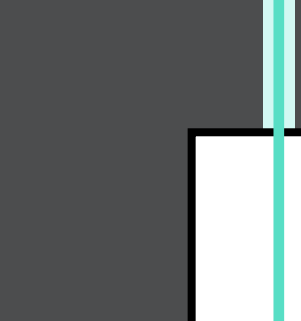
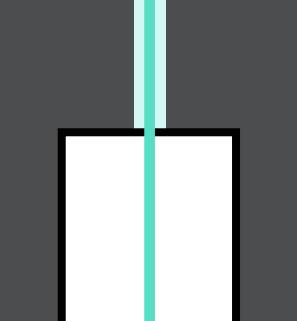
Onshore



3

Small and Medium Companies

MAXIMIZING THE RECOVERY FACTOR



14%

Campos Basin Current O&G Recovery Factor

21%

Brazil Final O&G Recovery Factor

23%

Campos Basin Final O&G Recovery Factor

35%

World Average Final O&G Recovery Factor

1% addition in Campos Basin: 985 Mboe New Reserves

200 Mboe New Reserves

1% addition in Onshore: 200 Mboe New Reserves

200 Mboe New Reserves

*Source: Annual Reserves Bulletin (12/31/2017)

BRAZIL'S POTENTIAL

5.5 m bpd

Potential forecast production in 10 years, creating a growing & steady intervention market

>60 New FPSOs

The most prominent deep water environment

Mature fields/basins

Low recovery rate in average. High potential for attracting new intervention investments

New Frontier Basins

We barely know our potential. Unconventional resources discussion should progress

CONTRACTED OR IN PROGRESS

NEED TO BE UNLOCKED

Erin Smith
esmith@offsnet.com +44 (0) 20 3409 3042