Brazil’s Oil Prospectivity and New Licensing Rounds

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Outline

1. Brazil’s Current State
2. Brazilian Oil Prospectivity
3. Upcoming Bidding Rounds in Brazil
4. Conclusion
Brazil’s Current State

Sedimentary Area: 7.5 million km²

Area under concession
~ 280,000 km²

339 Blocks

447 fields

105 group companies

Production
(Feb, 2018)
Oil 2.62 million barrels/d
Natural Gas 110 m³/d

Proven Reserves
(Dez, 2017)
Oil 12.8 billion barrels
Natural Gas 367 billion m³

10th largest oil producer in the world and the largest in Latin America
Brazil’s Current State

1998
Production (Dez, 1998)
970 thousand bbl/d
30 million m³/d

2017
Production (Feb, 2017)
2.6 million bbl/d
110 million m³/d

Oil Export (2000)
18.68 bbl/d

Crude Oil Export
1 million bbl/d
Brazil’s Prospectivity

Wide variety of plays under exploration and production

Two main plays producing in Brazil:

Turbidite Sandstones

Pre-salt Carbonates

Potential for much more to be explored in conventional and unconventional plays
Brazil’s Prospectivity

**Pre-Salt**
- High quality *Carbonate Reservoirs* underneath the salt layer
- High *well productivity* more than 30,000 bpd in the beginning of production
- Potential for giant or supergiant field discoveries

**Conventional Offshore**
- **Eastern and Equatorial Margin**
  - Potential for oil discoveries from the Upper Cretaceous to Paleogene turbidite reservoirs

**Onshore**
- **Mature Basins** (Remaining Potential)
- **New Frontier Basins**
  - Solimoes Basin: Potential for light oil accumulations
  - Paleozoic and Proterozoic basins: gas prone
Brazil’s 15th Oil & Gas Licensing Round

A variety of operators and a geographic diversity

22 blocks were acquired (Total area 16,400.30 km²)

12 winning companies from 11 countries

The largest signature bonuses in concession bidding rounds ever (R$ 8 billion)

A variety of operators and a geographic diversity
Brazil’s 15th Oil & Gas Licensing Round
Petrobras has exercised its preferential right for the 4th Pre-salt Bidding Round. The public session for submission of bids is on Jun the 7th, 2018.

4 blocks in Pre-Salt play:
Potential for huge oil discoveries
Unrisked oil in place volume (P50) ~14 billion barrels
Unrisked in place oil volume (P50)
7.8 billion barrels
Unrisked in place oil volume (P50)  
7.8 billion barrels
This auction will include the blocks withdrawn by TCU from the 15th Bidding Round and the 4th Pre-Salt Round, as well as Pau-Brasil and Sudoeste de Tartaruga Verde blocks. Yet to be approved by CNPE.

Unrisked oil in place volume (P50) ~16.5 billion barrels.
5th Pre-salt Bidding Round

Base of Salt Depth Structural Map

Saturno
Dione
Titã

25 km
# 5th Pre-salt Bidding Round

*Pre-salt Bidding Round*

### Depth (m)

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*Survey 0268_BM_SANTOS_FASE_VII_B – Courtesy of CGG: Arbitrary Line (Fast Track)*

**Dione Prospect**
Open Acreage 1st Cycle

884 Blocks
Total Area: 345,800 km²

Offshore and Onshore Areas

Blocks not awarded in the 15th Bidding Round are included

90 days from the submission of each offer to execute the auction

Deadline for the disclosure of parameters and rules of the Open Acreage
Beginning of the Open Acreage 1st Cycle From 5/2/2018
Submission Offers From 11/1/2018

Election Period

2018
Open Acreage 2nd Cycle

Deadline to disclosure parameters and rules
December/2018

1,054 blocks
Total Area: 441,400 km²

Offshore Areas
Foz do Amazonas, Para-Maranhao
Barreirinhas, Ceara
Potiguar
Pernambuco-Paraiba
Sergipe-Alagoas
Jacuípe, Camamu-Almada
Jequitinhonha, Espirito Santo
Santos and Pelotas

Onshore New Frontier Basins
Solimoes
Amazonas
Parecis
São Francisco
Parana
Tucano
What’s up for 2019?

6th Pre-salt Auction & 16th Bidding Round
2019 6th Pre-salt Bidding Round

Aram Block

Prominent Basement High
Four-way Closure
Amplitude Anomalies

Survey: R0014_BS_1_SOUTH_PSDM – Courtesy of PGS

Area: 1,500 km²
6th Pre-salt Bidding Round

Aram Block

Crossline 4802

Top of Salt (Aptian/Albian)  Base of Salt (Aptian)  Basement  Fault

Prominent Basement High
Four-way Closure
Amplitude Anomalies

Area: 1,500 km²
Conclusions

Brazil has highly promising oil prospectivity and wide diversity of plays and it is on the eve of becoming the largest offshore market in the world;

In 2018, 2 more pre-salt auctions will take place in Brazil;

Estimated unrisked in place volume surpasses 30 billion barrels of oil for the 4th and 5th Pre-Salt Licensing Rounds;

Beyond the pre-salt auctions, ANP is also starting the open acreage process which will allow companies to have more flexibility to orchestrate deals with the Brazilian government and access to almost 2,000 blocks (~800,000 km²).

Besides all this, in 2019 there will be new bidding rounds, with very promising areas and potential for giant oil discoveries.
National Agency of Petroleum, Natural Gas and Biofuels

ANP

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