

# Brazil Upstream Opening

The Petroleum Law, Regulation Framework and Competitive Rounds

# Brazil Upstream Opening

Pre -1997: Petrobras 'Monopoly'

1985 - 1997: Paving the road to open Market (CF '85 & Petroleum Law)

1998 - 2005: Concession Regime & Santos Pre-Salt 'Discovery'

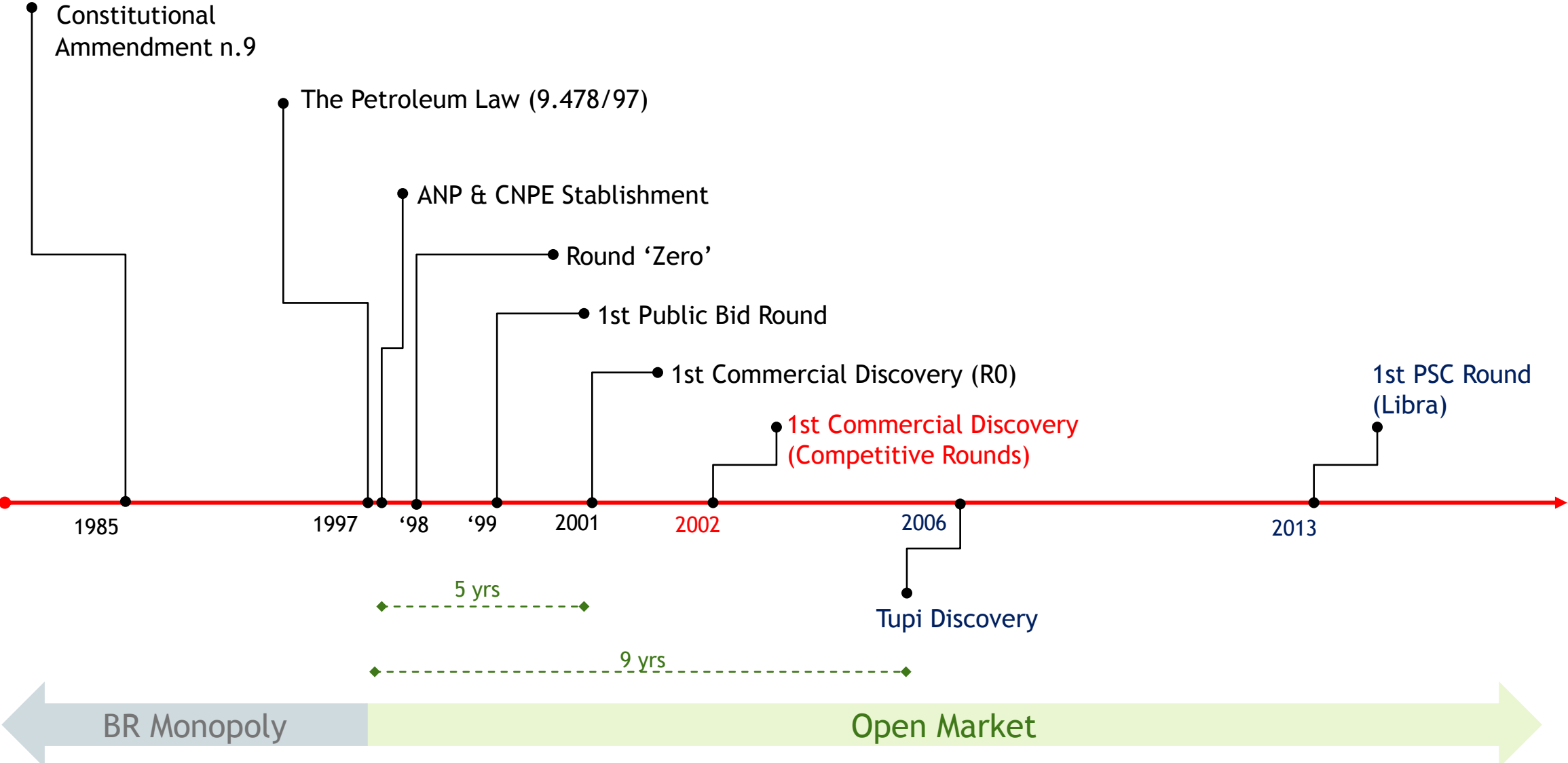
2006 - 2009: Pre-Salt evolving: the scrambling period

2010 - 2012: No Concessions Rounds, Libra & Franco discovers and the Transfer Rights

2013 - 2016: Multiples Regimes, 1st PSC Auction

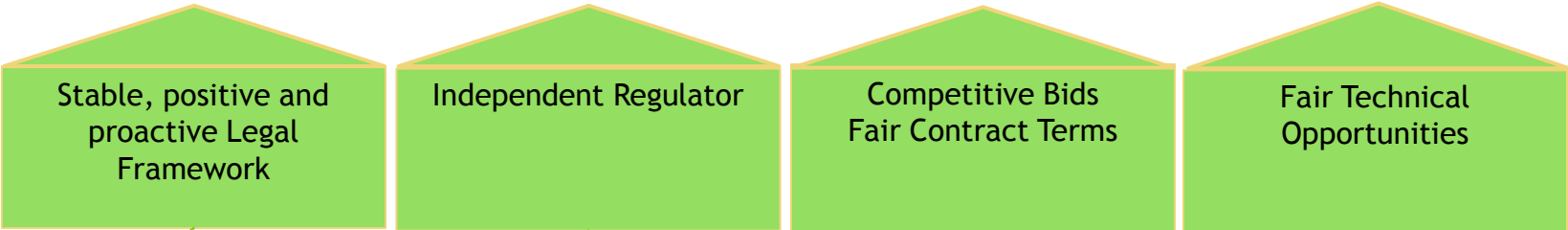
2016 - 2018: Pedal to the Metal

# Upstream Opening: it was a long shot!



## Country Oil & Gas Policy Strategic Goals

Attract Sustainable Investments ?  
 Increase Reserve & Production ?  
 Technology Development ?



CNPE



- Constituição Federal (Art. 177)**
  - Possibilidade da União contratar com empresas estatais e privadas as atividades de pesquisa e lavra de jazidas de petróleo e gás natural, a refinação, importação e exportação dos produtos derivados e transporte marítimo e por conduto de petróleo bruto e seus derivados e gás natural. (Art. 177)
- Lei 9.478/1997**
  - ANP elabora os editais e promove as licitações para a concessão de exploração, desenvolvimento e produção, celebrando os contratos delas decorrentes e fiscalizando a sua execução. (Art. 8º)
- Resolução CNPE nº 22/2017**
  - Definiu os blocos exploratórios e autorizou a ANP a realizar a 15ª Rodada de Licitações – Mar e Terra
  - Aprova as exigências de Conteúdo Local para a 15ª Rodadas de Licitações
- Resolução ANP nº 18/2015**
  - Regulamenta o procedimento licitatório de blocos ou áreas para E&P de petróleo e gás natural.

### Brazil's Prospectivity

| Pre-Salt  | Conventional Offshore  | Onshore  |
|---|--|--|
| <p>High quality <b>Carbonate Reservoirs</b> underneath the salt layer</p> <p>High <b>well productivity</b> more than 30,000 bpd in the beginning of production</p> <p>Potential for giant or supergiant field discoveries</p> | <p><b>Eastern and Equatorial Margin</b></p> <p>Potential for oil discoveries from the Upper Cretaceous to Paleogene turbidite reservoirs</p> | <p><b>Mature Basins</b> (Remaining Potential)</p> <p><b>New Frontier Basins</b><br/>Solimões Basin: Potential for light oil accumulations</p> <p>Paleozoic and Proterozoic basins: gas prone</p> |

# 'Conflicting' Agendas

Country Oil & Gas Policy Strategic Goals

Attract Sustainable Investments ?  
Increase Reserve & Production ?  
Technological Development ?

Conflicting and/or others players' agenda may compromise Energy Policy goals

- ✓ *Contract objectives and targets can be frustrated*
- ✓ *Investments decisions delays*
- ✓ *Revenue from Production and Government Take may be postponed*
- ✓ *Industry development fading away*

# 'Conflicting' Agendas

Country Oil & Gas Policy Strategic Goals

Attract Sustainable Investments ?  
Increase Reserve & Production ?  
Technological Development ?

## Example 1: Local Content Policy

- To set unrealistic Obligatory Minimum %'s may jeopardize bid targets
- May cause delays on Investment Decisions
- Being part of offer may frustrate competition
- Can not replace a Country specific Industry Development policy
- Does require pre-assess domestic suppliers strengths and capabilities
  - ✓ Who is responsible ? At what cost?
- Incentives rather than penalties may work better

# 'Conflicting' Agendas

Country Oil & Gas Policy Strategic Goals

Attract Sustainable Investments ?  
Increase Reserve & Production ?  
Technological Development ?

## Example 2: Environmental Permit Process

- Assure Agencies alignment about X-blocks and Government' goals to minimize uncertainties on project execution as well as mitigate non-compliance risks
- Fit-for-purposes Environ Process to speedup permits and rationalize costs
- Regional Permits: streamlines project execution, minimize cost, increase operation efficiency
- Should not replace Government's obligation to gather raw/primary data or to promote Environmental Programs
- Environ process is not a proper way to 'finance' the Environ Agency
  - *GT and Production revenues can cope with that*

# Environment Permit Process

## Onshore Areas > State Environmental Agencies

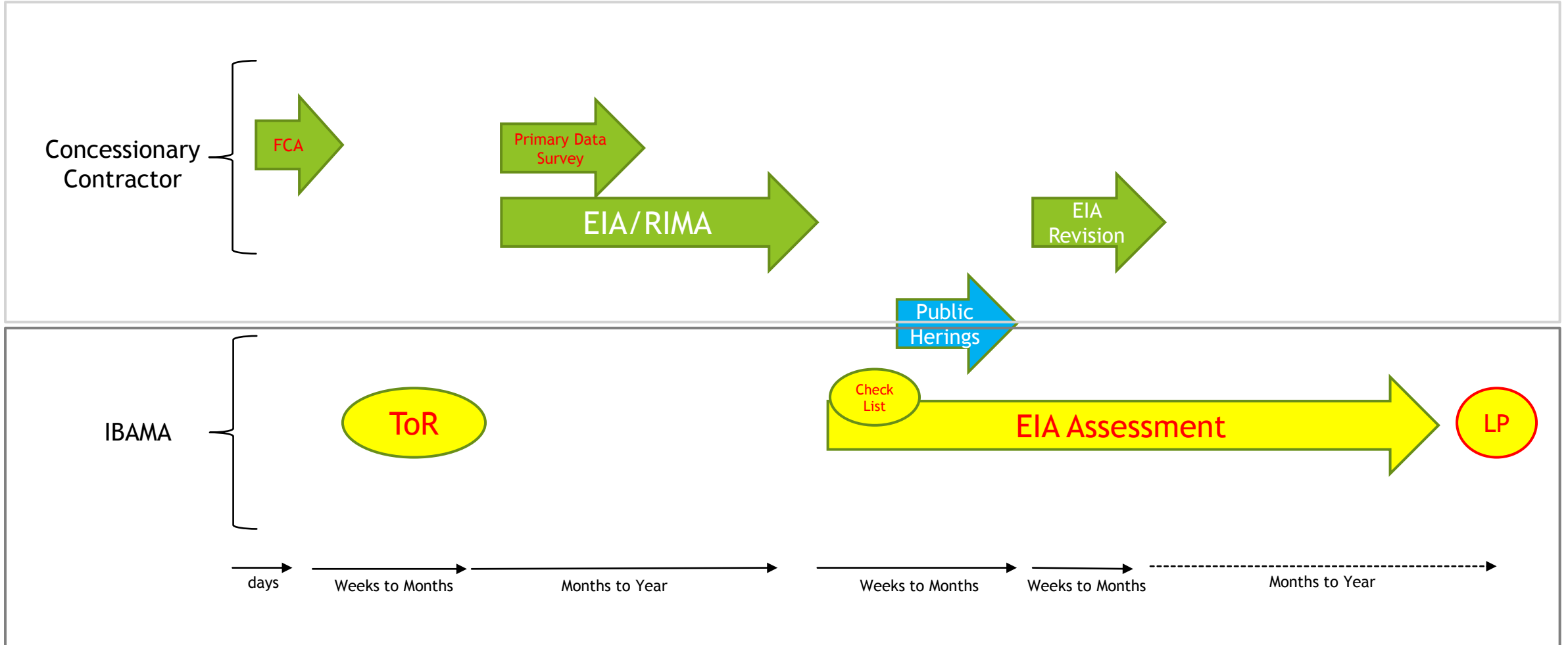
- ✓ Streamline and faster process
- ✓ Little impact on project timeframe (unconventional is an exemption)
- ✓ More aligned with regional econ interest and developments
- ✓ Political influence/control more effective
- ✓ Risk profile:
  - ✓ local, usually limited to ringfence
  - ✓ Air pollution, potential Aquifer contaminations, waste management/disposal, noise, etc.

## Offshore Areas > IBAMA

- ✓ Pending on area sensitiveness can take years
- ✓ Usually, for DW project in Santos and Campos permit process take about 6m-1.5yr
- ✓ May have huge impact on project timeframe and cost
- ✓ Not really concerned with regional econ interest and/or developments; focus is environment protection
- ✓ Political influence/control less effective, if any
- ✓ NGOs can play a relevant role
- ✓ Risk profile:
  - ✓ Regional, usually not limited to ringfence
  - ✓ Oil Spill, Shore touch potential, Impact on 3rd party econ activities (fishing, etc.) and wild life (breeding areas, migration paths, etc.)



# Environment Permit Process at glance



# The Petroleum Law (9.478/97)

## *Gear for success*

### Round Zero

Round Zero ratified the rights of Petrobras in the form of concession contracts on fields that were in effective production on the effective date of the Law. In the case of blocks in which the state company had made commercial discoveries or promoted investments in exploration, had his rights guaranteed for three years to continue exploration and development. In successful cases, you can continue in production activities.

- Rule to easy Petrobras transition from monopoly to a competitive environment
  - ✓ Assure ongoing Project continuity
  - ✓ Reward Petrobras's previous investments (protect value)
  - ✓ Cool down oposition

BUT, aslo worked as an alternative to:

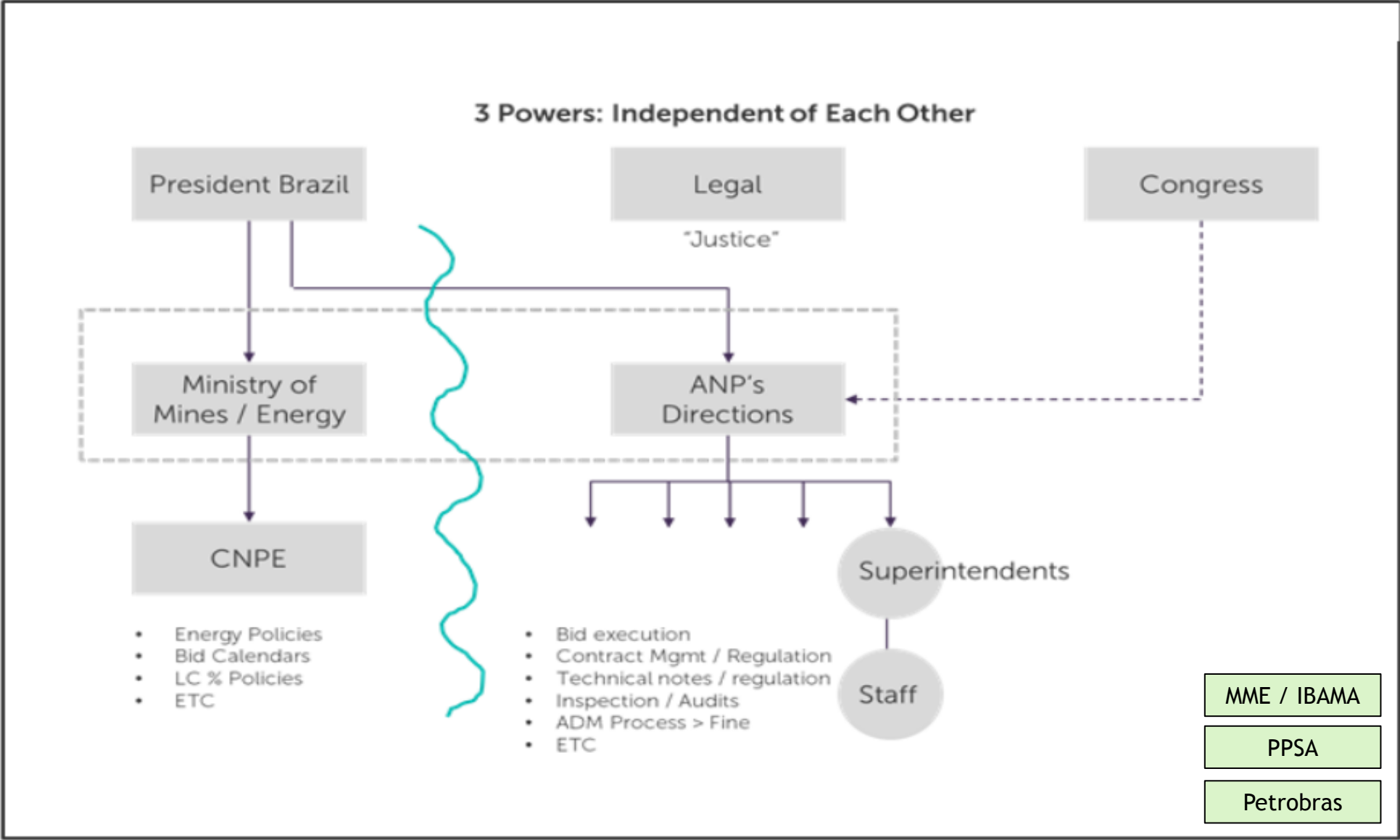
- Petrobras capitalization and risk sharing
- Newcomers to build a more balance portfolio: prodction assets, Discovery assessment phase, etc.
- Alternative to competitive bids

# The Petroleum Law (9.478/97)

## *Gear for success*

- ▶ Established the Independent Regulator and CNPE
- ▶ Concessions established via Public 'Competitive' Bids
- ▶ Petrobras should compete for areas as any other Oil Co., but Round 'Zero'
- ▶ Oil Property: transferred to concessionary after the measuring point
- ▶ No restriction to commercialization, incl exportation
- ▶ Right to produce, in case of Commercial Discovery
- ▶ Originally: Bid Offers based on MWO + Signature Bonuses
  - ▶ Later, Local Content as part of offer; then, removed!
- ▶ Royalties and others Government Takes specified in the law and regulated via Decrees
- ▶ R&D obligations
- ▶ All Petrobras E&P database transferred to ANP (wells + seismic): Brazil EP DB (BDEP)
- ▶ ANP obligations to invest in G&G acquisition and Regional Studies to promote areas

# Relevant Players



# CNPE and ANP Roles and Responsibilities

**CNPE** is responsible to propose Country Energy Policy and Strategies

Is a Council formed by Ministers (e.g Mines and Energy, Economy, Planning) and Works as a Advisory body to President of Brazil

Is also responsible to approved areas which proposed by ANP are going to be offered during Bid Rounds and also define Rounds Calendars

**ANP** is not a policy maker but the Sector Regulator. Is the Federal agent responsible to assure O&G policies are implemented

Is also responsible for:

- Administration of Concession Contract
- Regulation of Activities, incl. propose technical ordinances and assure technical compliance according to best practices
- Auditing Minimum Obligations
- Hold penalties adm process
- Inspecting E&P activities and approve Plans
- Manage Unitizations
- The study of sedimentary basins in order to propose areas to Bid Rounds and access theirs potential
- Monitor Market and Reserves in order to subsidize CNPE activities
- Administration of Brazil E&P Database
- Prepare, promote and execute Bid Rounds

# Regulation purposes is to maximize contract/activities benefits to State and Society

| Gear                            | Drive   | Impact   |
|---------------------------------|---|--|
| Environmental Permit Process    | Protect Environment and Mitigate Risks  | Project Delays<br>Block Exploration<br>Erode Project Value (1st oil)<br>Impact Gov Take                            |
| Local Content                   | Develop Domestic Suppliers<br>Tech Transfers<br>Create Jobs   | Impact Expl Investment<br>Delays Project and 1st Oil<br>May lead tech inefficiencies<br>Affect Competition         |
| MWO And Fin Guarantees          | Assure Min Investment<br>Collect New Data<br>Resources Assessment   | Compatible with Phase terms, i.e. achievable<br>Offer vs Imposed<br>Match activity cost or is an 'Incentive' to do |
| Taxation (REPETRO)              | Governments Revenues  | Country Competitiveness<br>Boost Exploration<br>Increase changes of Commercial Develop's                           |
| SPEC data                       | Increase country data base<br>Support Bid activities and attractiveness                                   | Confidentiality Period<br>Data Ownership<br>Authorisation vs Free Market   |
| R&D Obligations                 | Tech Transfer<br>Develop Domestic Suppliers<br>Domestic Workforce qualification                           | Balance resources and capacity<br>Studies plus Infrastructure ?<br>Excess of Bureaucracy                           |
| Studies performed by Government | Increase database and knowledge in frontier basins<br>'D-risk' some area to increase bonus/attractiveness | Operated by ...<br>Source of resources<br>Confidentiality & Availability   |
| 'National Data Bank'            | Manage all Data<br>Commercialization by Government  | Access level & cost<br>Gratuity: foment Academia<br>Deal with Core and Samples                                     |

# Concession Contracts

- ▶ Completely aligned with Petroleum Law and is an Annex of Bid Tender Protocol
- ▶ Fixed terms for Exploration and Production
  - *Extensions options defined in contract, incl special treatment for Gas & Heavy Oil discoveries*
- ▶ Set Concessionaries/Contractors Rights and Obligations
- ▶ Royalties is set by Law but incorporated in the Contract
- ▶ Penalties for MWO non-compliance is also in the contract
- ▶ Arbitration Clause in place
- ▶ ANP's discretionarity is limited, but there is flexibility
- ▶ Joint-Venture liability/accountability (no Operator only)
- ▶ Despite Contract is the authorization to execute, some activities requires to obtain the Environmental Permit from IBAMA or pre-spud authorization from ANP
- ▶ Minor changes from Round to Round to incorporate regulatory flexibilizations and/or optimization; indeed, text clarifications
- ▶ Public Hearings is part of bidding process
- ▶ Once signed, RESPECTED! Since opening no single contract was terminated or changed unilaterally by Government

# Smart Regulation

✓ Due to absence of a proper Regulatory Framework, initially used the Contract plus Law and ANP's discretionarily to 'regulates' activities, then (next stage) was to formally build the Tech and Regulatory Ordinances.

- Tax Incentives/Flexibilizations: REPETRO
- Safety Operations (ANP Ordinance) and Emergency Response, incl sharing of infrastructure and services
- Rules to Commercialization (Export Oil)
- Government Take booklet (Inc Reference Prices calculation, Special Participation, etc)
- Access to existing Infra-Structure (gas pipelines, Gas treatment units, etc)
- Discovery Appraisal & Development Plans
- Annual Exploration/Production and Budget Plans (PAP/OAT and PAT/OAT)
- Penalties Regulation
- Production Individualization/Unitization Rules
- Data Access/Confidentiality & Spec Data
- Regional Environmental Permits
- Local Content and R&D ordinances/rules

✓ Focus should be at Principles and Best Practices avoiding to be too much 'Prescriptive'

- *Example: Development Plans*

*There is a requirement to deliver to ANP the simulations grids, static plus dynamic models, etc.*

*Alternatively, could ask to runs specific scenarios (well production thresholds, Injection timing, dense well spacing, etc.)*



# Smart Regulation

✓ The timing of implementation of an objective regulation is critical to assure the success of some initiatives as LC and R&D&I obligations. Without that, better to favor the Incentives to do rather Enforcement and Penalty approach.

✓ Minimize activities that requires an prior spud approval from Regulator:

Appraisals

Development

Production (1st oil)

EWT

Flaring

Decommissioning

✓ Most of activities a awarding notice is a good way to monitoring the operations. Contract itself is the formal Authorization to initiate and execute operations.

✓ Some activities demands an Environ Permit prior to spud. Clear definition about that and criteria to get the Permit will mitigate risk and increase competitiveness/contract efficiency.

✓ Requirements could be set up or adjust based on the size of project (i.e. reserves and production profiles/thresholds)

# Discuss Regional benefits to avoid negative impact of Exploration and Production results

*Royalties split, Tax battle & Infrastructure location*

- ✓ Offshore projects economicity depend on onshore base location, among others factors
- ✓ Split criteria of Revenues from Production may expose or amplify regional conflicting agendas and inequalities
- ✓ Target fair state compensation but also assure a attractive project value to concessionary/contractors
- ✓ Lack of 'Interstates' services and tax agreement can impact projects in bot ways: +/-
- ✓ GT sould benefit the country not a single state or region. Environmental compensations is not a valid argument to GT distribution when dealing with DW projects



# Concession Contract and Competition boosted Exploration beyond Campos DW

DW Exploratory Wells drilled in Santos Basin 16yrs period before and after Petroleum Law!

| #  | Poço           | Início Perfuração | LA > 500 m | WI            |
|----|----------------|-------------------|------------|---------------|
| 1  | 1-RJS-199B-RJS | 05/12/1981        | 808        | Elf-Aquitaine |
| 2  | 1-SCS-009A-SCS | 31/03/1981        | 504,5      | BP            |
| 3  | 1-RJS-317-RJS  | 17/09/1985        | 619        | Pb 100%       |
| 4  | 1-BSS-066-RJS  | 20/09/1991        | 831        | Pb 100%       |
| 5  | 1-BSS-074-BSS  | 08/01/1994        | 1140       | Pb 100%       |
| 6  | 1-BSS-069-BSS  | 10/11/1993        | 1515       | Pb 100%       |
| 7  | 1-BSS-077-BSS  | 17/05/1994        | 585        | Pb 100%       |
| 8  | 1-BSS-075-BSS  | 17/03/1994        | 1351       | Pb 100%       |
| 9  | 1-BSS-076-BSS  | 17/03/1994        | 873        | Pb 100%       |
| 10 | 1-BPS-007-BPS  | 26/01/1995        | 1769       | Pb 100%       |
| 11 | 1-BSS-080-BSS  | 18/04/1995        | 1776       | Pb 100%       |
| 12 | 1-BSS-081-BSS  | 17/07/1995        | 1361       | Pb 100%       |
| 13 | 1-BSS-083-BSS  | 23/11/1996        | 1522       | Pb 100%       |
| 14 | 1-SCS-009-SCS  | 01/03/1981        | 504,5      | Pb 100%       |
| 15 | 1-RJS-199A-RJS | 23/11/1981        | 808        | Pb 100%       |
| 16 | 1-RJS-199-RJS  | 19/11/1981        | 808        | Pb 100%       |

← 16  
(in 16 yrs)

> 100  
(in 16 yrs)

★  
(Pre-Salt 1st Discovery in 2005)

| #   | Poço             | Início Perfuração | LA > 500 m |
|-----|------------------|-------------------|------------|
| 1   | 3-RJS-740-RJS    | 25/06/2015        | 2046       |
| 2   | 1-SPS-032A-SPS   | 11/01/2000        | 1996       |
| 3   | 1-SHELL-004A-RJS | 30/03/2001        | 1557       |
| 4   | 1-SHELL-005-RJS  | 24/04/2001        | 1881       |
| 5   | 3-RJS-552-RJS    | 27/09/2000        | 1524       |
| 6   | 1-KMG-001-SPS    | 02/03/2001        | 1639       |
| 7   | 3-RJS-550A-RJS   | 24/05/2000        | 1573       |
| 8   | 3-RJS-550-RJS    | 30/04/2000        | 1573       |
| 9   | 1-AHA-RJS        | 15/10/2000        | 1052       |
| 10  | 1-AHC-RJS        | 12/04/2001        | 1094       |
| 11  | 1-RJS-551-RJS    | 10/03/2001        | 1489       |
| 12  | 1-RJS-559-RJS    | 04/06/2001        | 1560       |
| 13  | 1-RJS-559B-RJS   | 16/06/2001        | 1549       |
| 14  | 1-SHELL-004-RJS  | 25/02/2001        | 1557       |
| 15  | 1-RJS-559A-RJS   | 11/06/2001        | 1560       |
| 16  | 3-RJS-560-RJS    | 08/08/2001        | 1491       |
| 17  | 1-RJS-568-RJS    | 08/09/2001        | 1629       |
| 18  | 1-RJS-566-RJS    | 02/09/2001        | 1207       |
| 19  | 1-RJS-563-RJS    | 01/09/2001        | 1412       |
| 20  | 3-SHELL-008-RJS  | 18/08/2001        | 1555       |
| 33  | 1-RJS-582A-RJS   | 02/11/2002        | 1493       |
| 34  | 1-AGIP-002-RJS   | 22/01/2003        | 1765       |
| 35  | 1-RJS-598D-RJS   | 01/01/2003        | 1967       |
| 36  | 1-KMG-002-SPS    | 28/06/2002        | 1514       |
| 37  | 3-RJS-588-RJS    | 12/01/2003        | 1271       |
| 61  | 5-PRP-001-RJS    | 22/06/2009        | 1230       |
| 62  | 2-ANP-001-RJS    | 18/12/2009        | 1894       |
| 63  | 4-RJS-668-RJS    | 30/03/2010        | 2136       |
| 64  | 2-ANP-002-RJS    | 08/05/2010        | 1973       |
| 65  | 1-RJS-672-RJS    | 06/11/2010        | 1533       |
| 66  | 1-SHELL-023-RJS  | 09/08/2010        | 2011       |
| 97  | 3-RJS-731-RJS    | 11/08/2014        | 1963       |
| 98  | 3-RJS-731i-RJS   | 07/08/2014        | 1963       |
| 99  | 3-RJS-741-RJS    | 26/09/2015        | 1911       |
| 100 | 3-RJS-739-RJS    | 02/05/2015        | 1952       |
| 101 | 3-RJS-735A-RJS   | 16/02/2015        | 2159       |
| 102 | 3-SPS-104DA-SPS  | 14/09/2014        | 2024       |
| 103 | 3-RJS-739A-RJS   | 25/05/2015        | 1951       |
| 104 | 3-TMB-002A-RJS   | 08/03/2015        | 1494       |
| 105 | 3-RJS-742-RJS    | 06/02/2016        | 2034       |

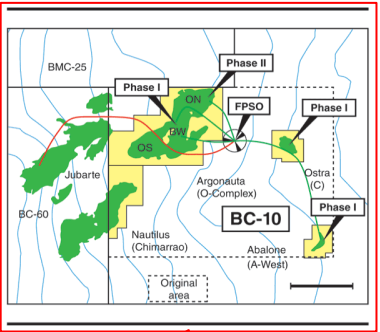
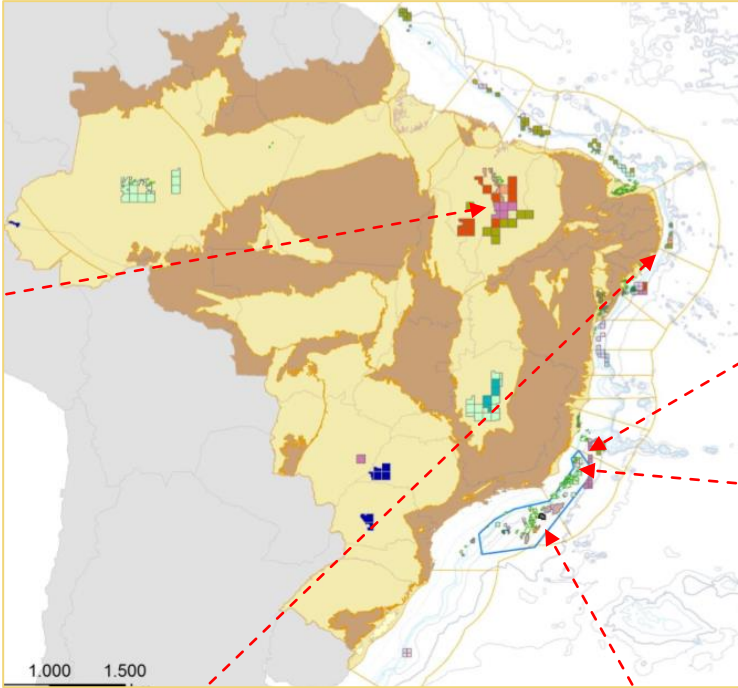
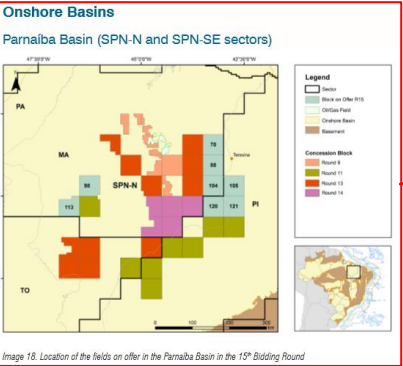
-(21-32)

-(38-60)

-(67-96)

# Discoveries that counts!

Onshore: The Hawk's nest at Parnaiba Basin (Gas @ 0.8 tcf recoverable); in Production. Round 7

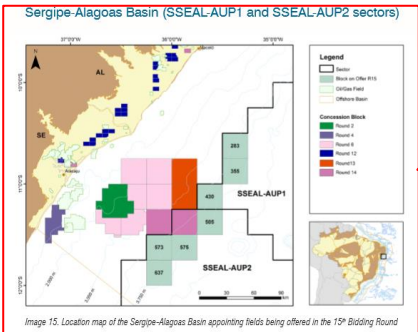


Offshore: Parque das Conchas (BC-10) and Parque das Baleias (BC-60), Campos Basin, DW, both in Production. Round Zero

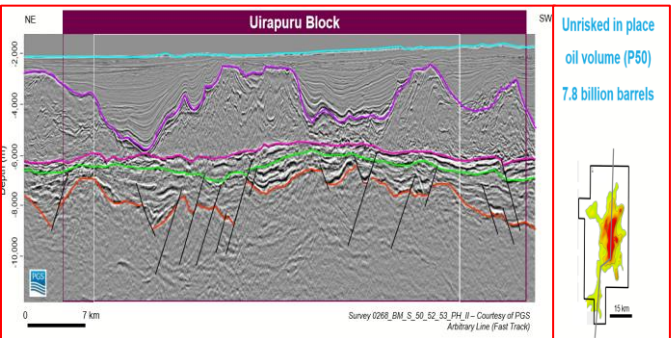
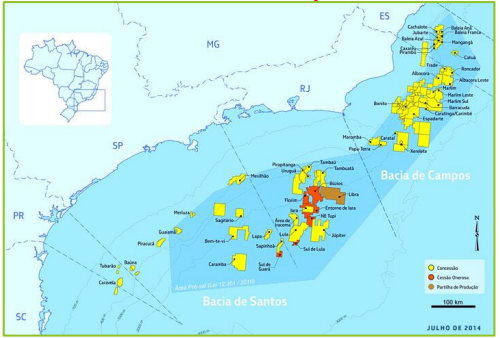


Offshore: Peregrino, Heavy Oil, BM-C-7, Campos Basin, DW, in Production. Round 2

Offshore: Farfan & Moita Bonita cluster at Sergipe Basin, DW, New Play, Commerciality to be proven; Round 2



## Pre-Salt Cluster



Source: BC-10/60 Picture (<https://www.offshore-mag.com/articles/print/volume-70/issue-7/flowlines-pipelines/how-bc-10-got-its-pipes.html>); others ANP

# Then... Santos Pre-Salt first discover and Tupi!

2005 - Paraty well in BM-S-10 (Petrobras, Galp, BG, Chevron JV)

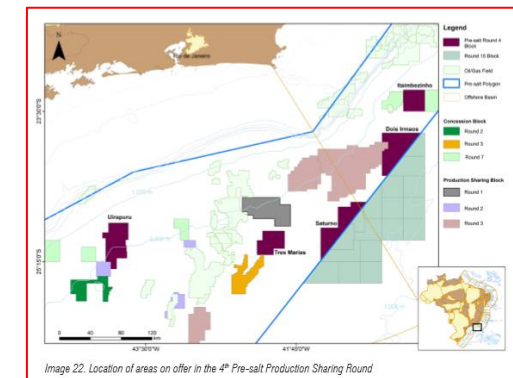
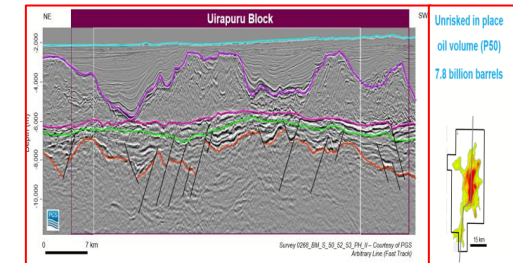
2006 - Tupi Discovery in BM-S-11 (Petrobras, Galp and Repsol)

2006 - Round 8 suspended in the spot

Definition of:

- ✓ *Pre-Salt Polygon*
- ✓ *BR operator exclusivity*
- ✓ *BR compulsory 30% participation*
- ✓ *Lock post-salt potential*
- ✓ *PSC Introduced*
- ✓ *Creation of PPSA*
- ✓ *Transfer Rights*

2010 - Libra Auction, *after 4 yrs wo Bid Rounds!*



# Then.... Santos Pre-Salt

R2 mainly post-salt targets up to Parati discovery!

**Informações Técnicas**  
**Bacia de Santos - Geral**

- Offshore da região SE do Brasil
- 109 Poços Exploratórios / 352.000 km<sup>2</sup>
- Contém 7 campos de óleo e um de gás (Merluza)
- Descoberta recente de campo gigante de petróleo

Initially R2 blocks was considered as mainly post-salt. After BM-S-10 Parati well discovery exploration focus shifted toward Pre-Salt

- BM-S-8 BM-S-9 BM-S-10 BM-S-11
- Águas profundas a ultra-profundas
- Turbiditos, rifts
- Intensa tectônica de sal
- SW da recente descoberta

**Objetivos da seleção e perfil dos blocos escolhidos**

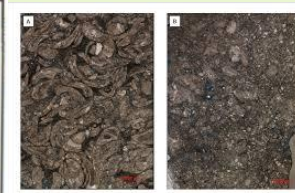
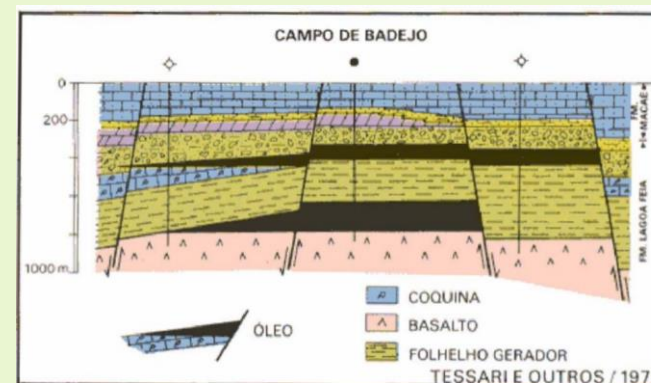
- Maior diversidade de companhias
- Menor demanda de investimento por bloco
- Tamanho x investimento x incertezas
- Processo de Nomações

- Sistema Petrolífero comprovado

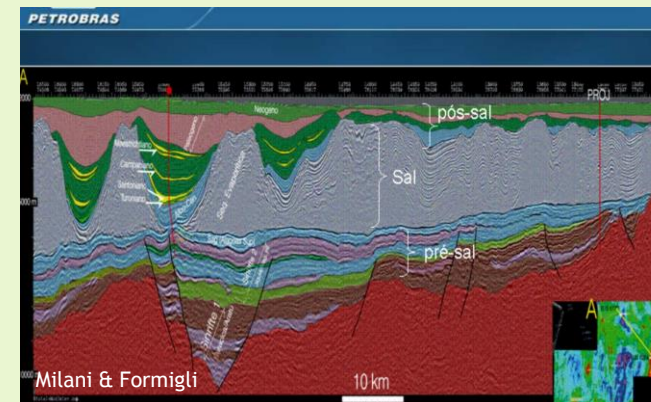


Round 2  
Signature Bonus

Different Geological Model but better then expected!

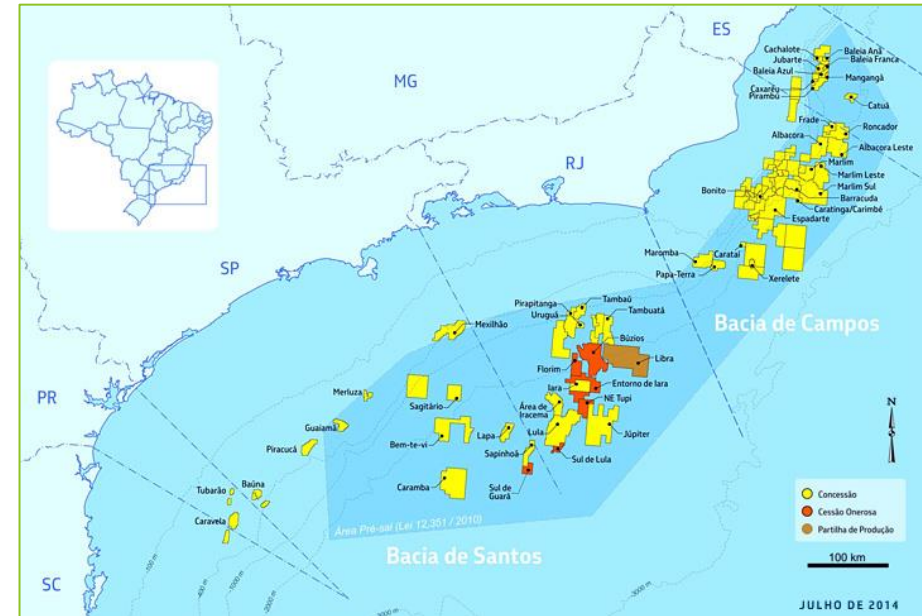
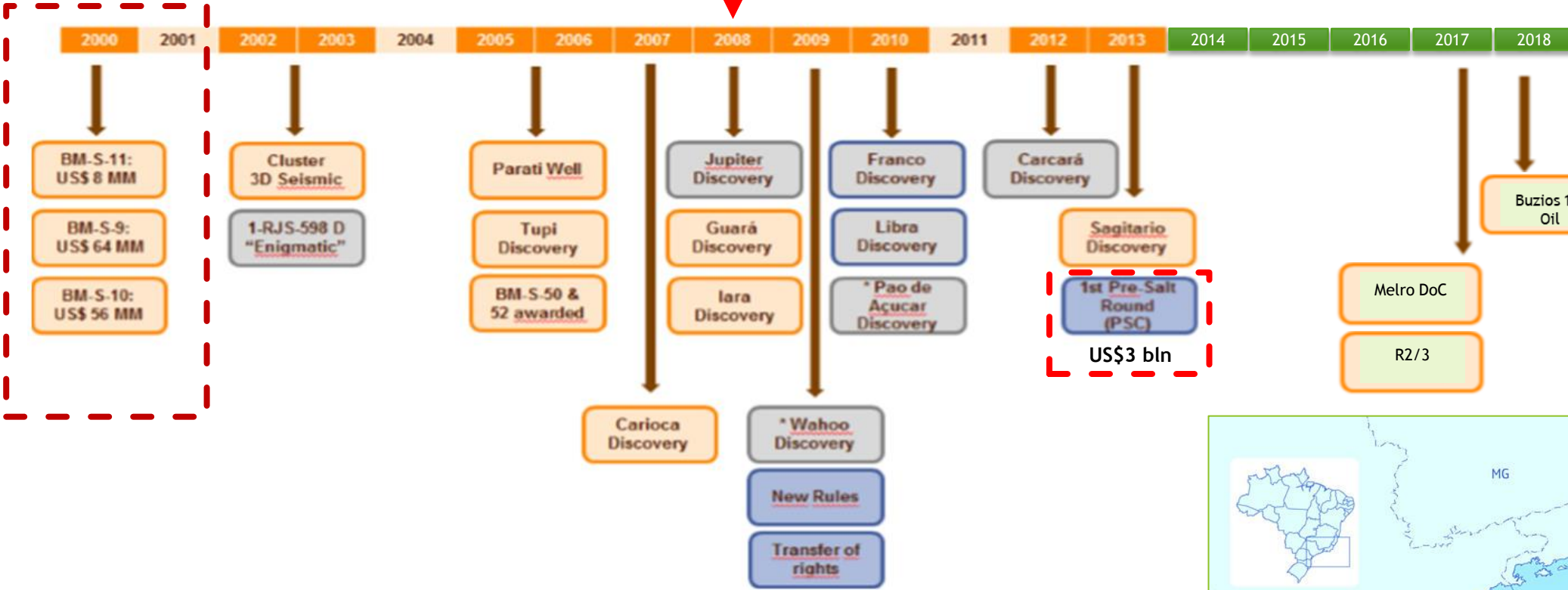


Seção geológica do Campo de Badejo, Bacia de Campos



# Pre-Salt Milestones

R8 Suspended



# Santos Pre-Salt led to 'adjustments'

- 2005 - Paraty well in BM-S-10
- 2006 - Tupi Discovery in BM-S-11
- 2006 - Round 8 suspended in the spot

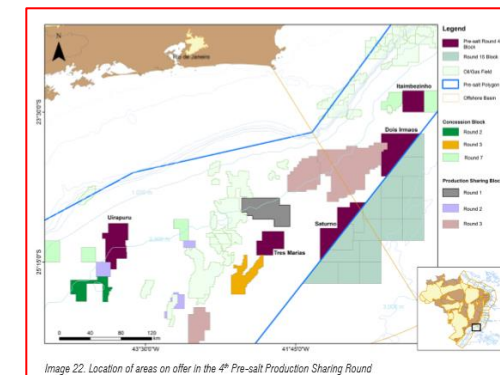
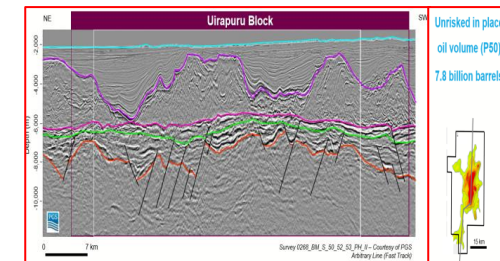
Definition of:

- ✓ *Pre-Salt Polygon*
- ✓ *BR the PS only operator*
- ✓ *BR compulsory 30% participation*
- ✓ *Stablishment of PSC*
- ✓ *Creation of PPSA*
- ✓ *Transfer Rights / BR Capitalization*

Could Brazil have done differently?

➤ Changes in the Special Participation and Royalties

➤ Define Strategic Blocks w/Presalt target and specific terms





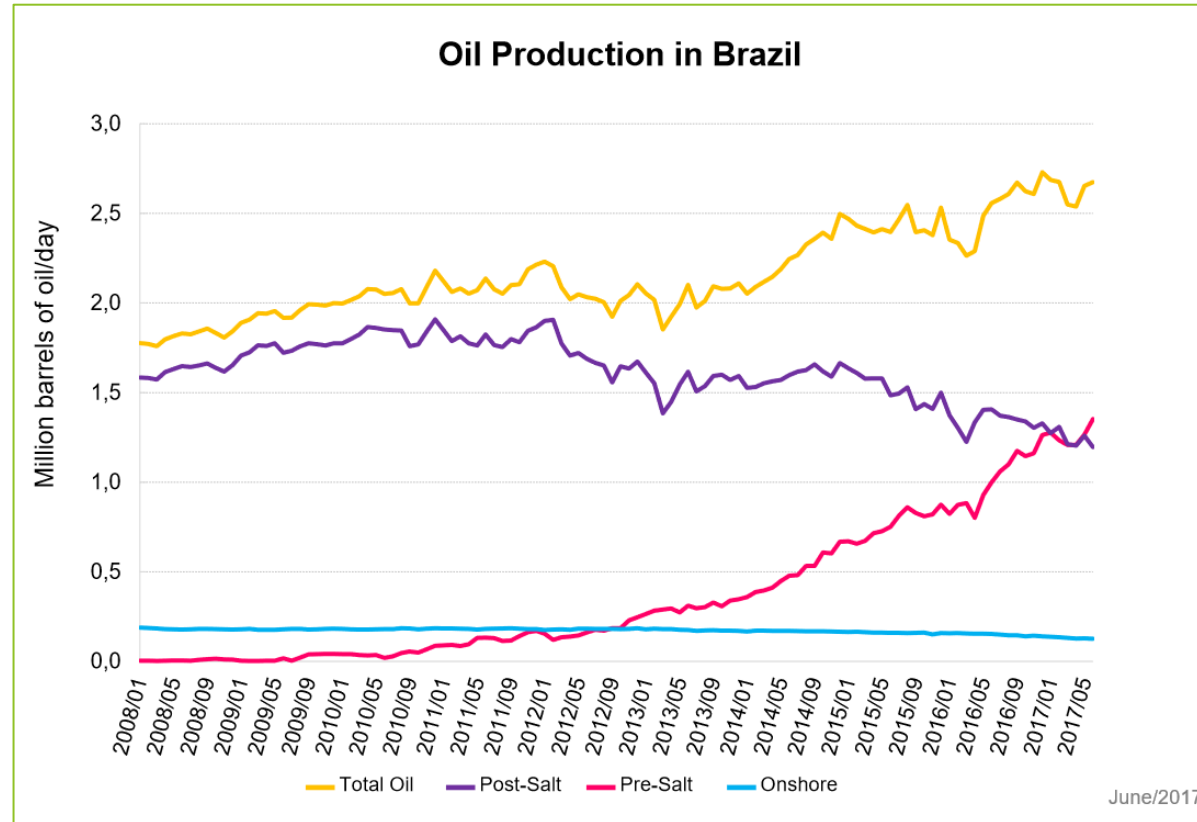
# Impact on Rounds

- ✓ Santos Presalt potential realized in 2005
- ✓ Round 8 was suspended in 2006
- ✓ 2006-09 Government preparing new legal framework to introduce PSC regime
- ✓ Round 14 '17 & 15 in '18 - Back to 'normal' but Pre-Salt Polygon in place



| Round                  | Year | Contract Type   | Remark   |
|------------------------|------|-----------------|--|
| 15                     | 2018 | Concession      |  |
| PS 2 & 3               | 2017 | PSC             |  |
| 14                     |      | Concession      | All Core Basins                                    |
| <i>2 yrs wo offers</i> |      |                 |  |
| 13                     | 2015 | Concession      | Campos Shallow Waters; No Santos blocks            |
| PS R1                  | 2013 | PSC             | Libra  |
| 12                     |      | Concession      | onshore blocks only                                |
| 11                     |      | Concession      | Campos and Santos out                              |
| <i>4 yrs wo offers</i> |      |                 |  |
|                        | 2010 | Transfer Rights | Direct Negotiation w/ Petrobras                    |
| 10                     | 2008 | Concession      | Campos, Santos and Esp Santo out                   |
| 9                      | 2007 | Concession      | Santos out   |
| 8                      | 2006 | Concession      | Pre-salt areas but Bid was suspended and cancelled |

# Impact of Post-Salt Production



In Summary, since Santos pre-salt discovery in 2005 CA-ES and Santos post-salt exploration has been jeopardized by Government policy! Campos' production has declined, no relevant Reserves reposition and revamp will take longer!

# Three Regimes in place

1998

|  |
|--|
| Concession Contract<br>(Royalties + Special Participation) |
| Post-Salt areas  |
| Regulated by ANP   |
| Competitive Bids   |

2010

|   |
|---|
| Production Share Agreements<br>(Profit Oil) |
| Pre-Salt Polygon                            |
| Regulated by ANP                            |
| PPSA lead OPCOM                             |
| Competitive Bids                            |
| BR leaverages                               |

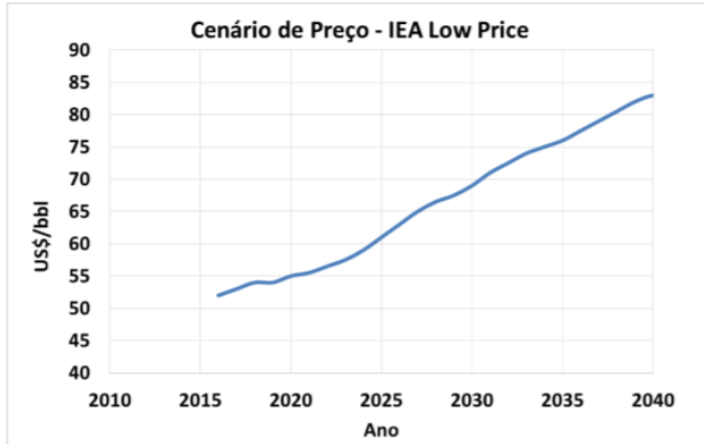
|  |
|--|
| Transfer Rights<br>(Concession type)     |
| Pre-Salt Polygon                         |
| Regulated by ANP                         |
| BR 100%. contracted direct by Government |
| Up to 5 bln bbl                          |

# Concession vs Production Share

- In PSA contracts...
  - ✓ PPSA is 'part of consortium' with 50% of voting rights
  - ✓ Have no share in the Asset, but manages the Government share of production
  - ✓ Have Veto Power at OPCOM
  - ✓ do not make disbursements and is carried during Expl Phase
  - ✓ is responsible to audit the Oil Cost
  - ✓ is responsible to commercialize Government production share
  
- ANP is the Regulator
  - ✓ *From Agency point of view: BR, PPSA and others companies are contractor to be regulated*
  
- Petrobras may preempt and claim Operatorship

|                        | PSA   | Concession  |
|------------------------|---|---|
| <b>Production</b>      | Split between Country and Contractors                           | 100% Concessionary  |
| <b>Control</b>         | Originally Operated by Petrobras, but no longer PPSA lead OpCom | No participation of Government                              |
| <b>Signature Bonus</b> | Pre-defined by ANP  | Minimum defined by ANP, but Bid offer criteria              |
| <b>Country's take</b>  | Royalties at 15%<br>% Profit Oil<br>Less Taxation               | Royalties 5-10%<br>Special Participation<br>Higher Taxation |
| <b>Oil Co's take</b>   | Oil Cost + % Profit Oil   | Production  |

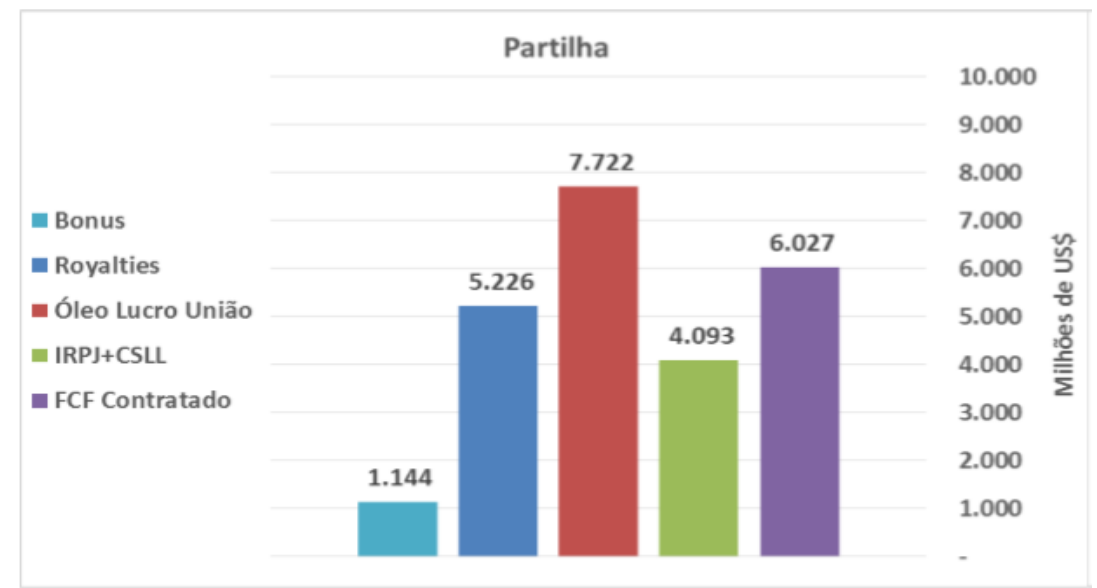
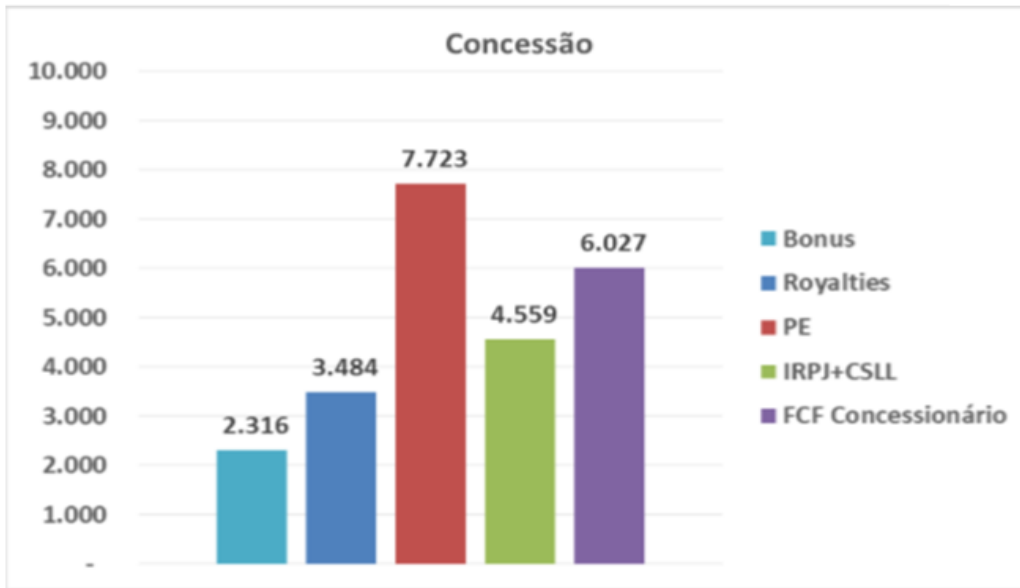
# Concession vs Production Share



Premissas:  
 Projeto Típico do Pré-Sal  
 Volume Recuperável = 2 Bi bbl  
 Cenário de Preço do Óleo: IEA Low Price  
 Taxa de Desconto = 10%  
 Partilha: Regras do Leilão de Libra  
 Concessão: Regras Atuais da ANP  
 GT Descontado = 75% (para ambos)

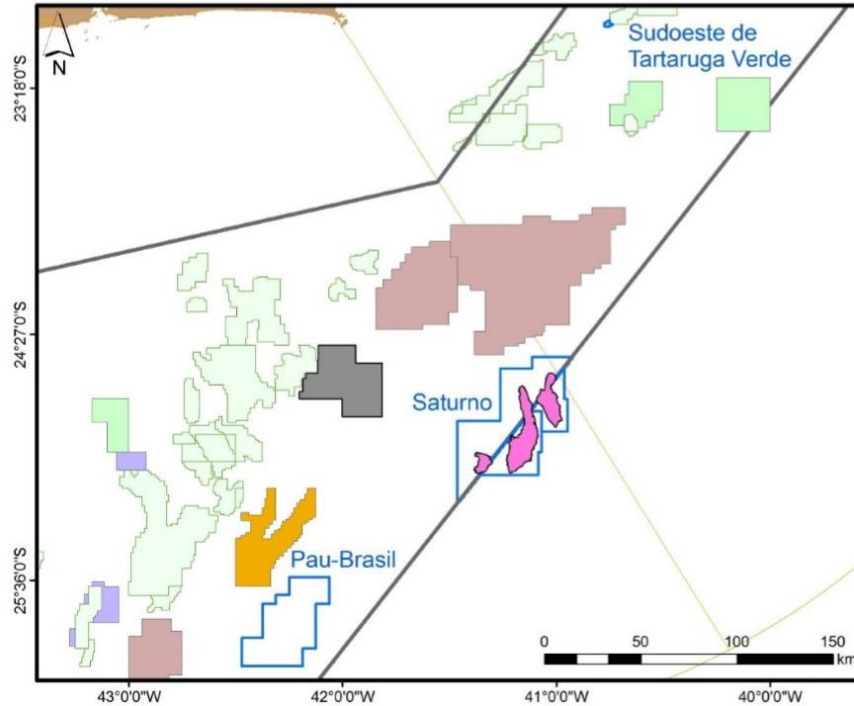


Antonio Cláudio de França Corrêa  
 Humberto Quintas



# Colateral Damange: Increase Unitizations complexity

- ✓ Complexity due diff regimes, obligations, government take, operatorship, etc.
- ✓ PPSA represent Government, but ANP runs the process and approvals
- ✓ Lack knowledge regarding to this transation
- ✓ Process definition in paralel to negotiations
- ✓ PPSA carry during appraisal



Yet to be approved by  
CNPE

This auction will include the blocks withdrawn by TCU from the 15<sup>th</sup> Bidding Round and the 4<sup>th</sup> Pre-Salt Round, as well as Pau-Brasil and Sudoeste de Tartaruga Verde blocks

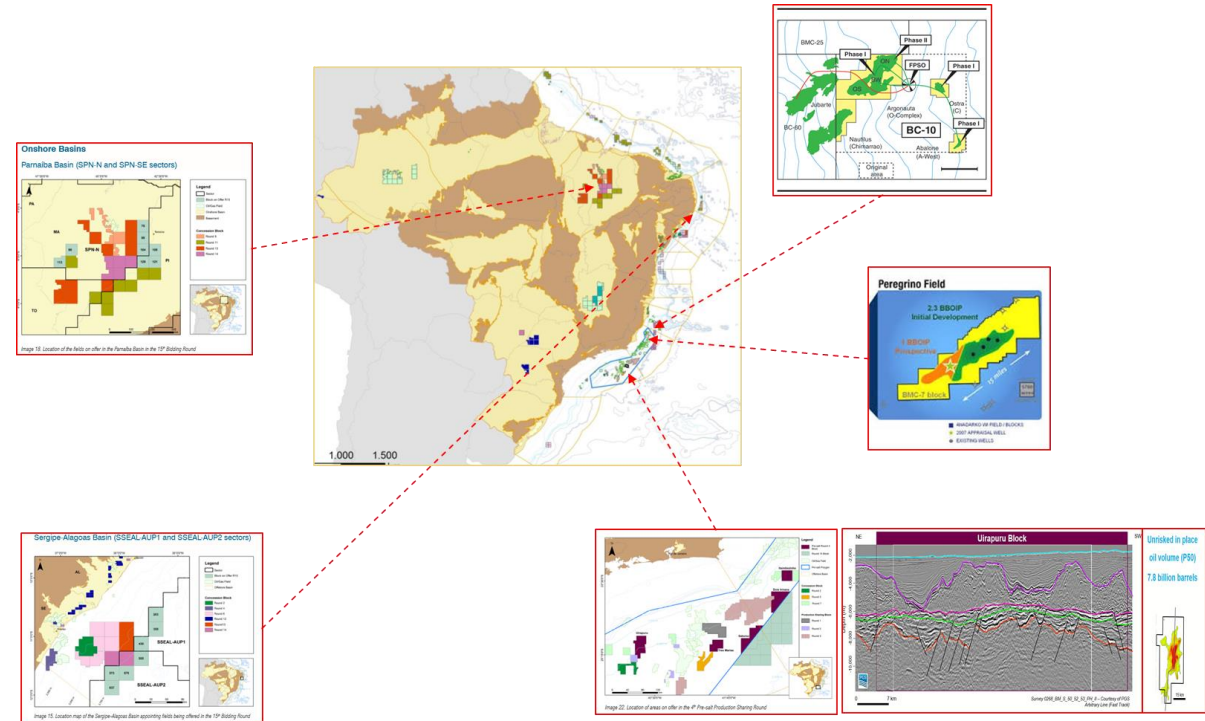
Unrisked oil in place volume (P50)  
**~16.5 billion barrels**

- Delays Investment Decisions
- Postponement 1st Oil
- Project Value erosion
- Uncertainties impacting country competitiveness and bid attractiveness
- Impact on Bid schedules and targets

# Be careful limiting yourself or exposing misalignments

In Brasil...

- ✓ Unconventional' reservoirs potential: investigation were blocks in SFR and Paraná onshore basins by Public Attorney; several contract suspended by ANP or relinquished by Concessionary.
- ✓ Barreirinhas basin: investigation on hold and +10 contracts suspended due to difficulties to get Environmental permits to drill exploratory wells.
- ✓ Foz do Amazonas: Public Attorney of Amapá state requested IBAMA do not grants Permit to Drill for all Total 7 exploratory wells commitment, based on area sensitivity.
- ✓ Shallow water exploration also avoided in some basins due to Environ Permit hurdles.
- ✓ Pre-Salt Polygon affecting post-salt evaluation



# Back and Forward process

Avoid of happened in Brazil, specially after the Santos Pre-Salt discoveries, but also due to changes in governmental agenda

- ✓ Local Content: minimum %s imposed by ANP > bid offer criteria > systems + sub-systems spreadsheet (R6+) > no longer part of offer > global % for exploration and development (R14+)
- ✓ REPETRO: In 1999, up to 2020; Rio de Janeiro's ICMS misalignments; in 2017, up to 2040
- ✓ Exploratory blocks: defined by ANP > sectors w/ possible to merge contracts > sectors constraining merges, pre-salt polygon boundaries > remove pre-s polygon ?
- ✓ Exploration Phase: one period > up to three periods > on large period
- ✓ Exploratory Blocks: large blocks > small blocks per sector; can group blocks in a single contract > can not group anymore; can bid for all > bid for a limited number of blocks
- ✓ Concession > PSA > Concession ?
- ✓ MWO: imposed by ANP (1st Period) > offered by Companies > imposed by ANP (PSC)



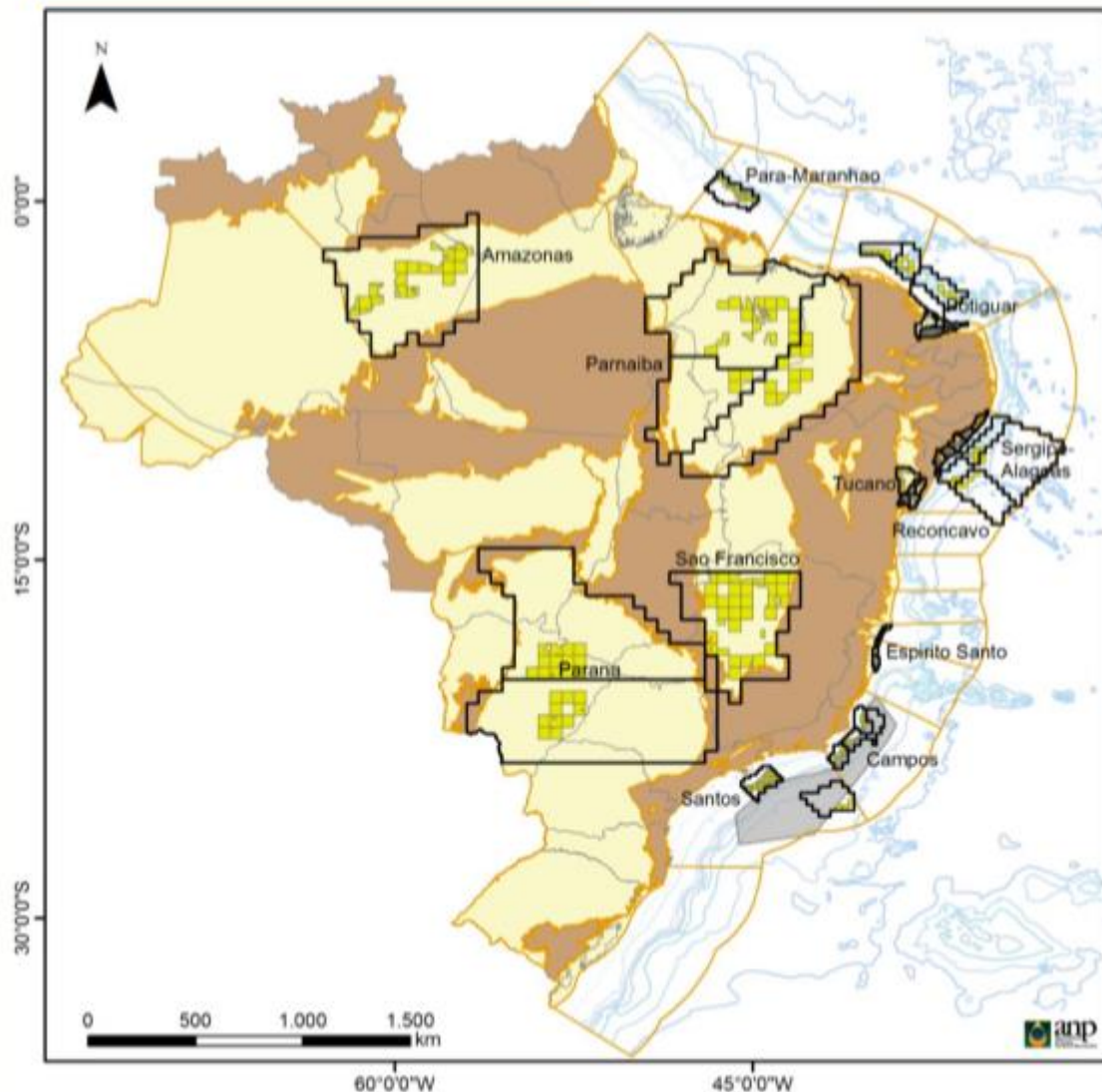
# Back on the track

After Dilma's impeachment Temer's Government redefined MME and CNPE actions and policies aiming to attract more investment to O&G sector, increase country competitiveness, regulatory stability and predictability

- Simplification and Flexibilization Local Content rules and requirements
  - ✓ *Exploration: 18%*
  - ✓ *Development: 25% well construction / 40% subsea systems / 25% production units*
- Local Content Wayver for all contracts (R7-R13 and PSC R1)
- 2 years extension for Exploration Phase of all R11/12 contracts, due to Oil Downturn
- REPETRO: optimized and extended up to 2040
- New Gas Law (under discussion in Congress) - Gas To Grow Program
- Bid Calendar: 2017- 2019
- Permanent Offer of Exploratory Areas and Maginal Accumulations (R1 and 2)
- Resivion of R&D&I regulation
- Revision of Environmental Process in order to accelerate permits
- Petrobras no longer compulsory operatorship (no pre-salt single operator)
- Discussing the Polygon needs vs Strategic areas



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

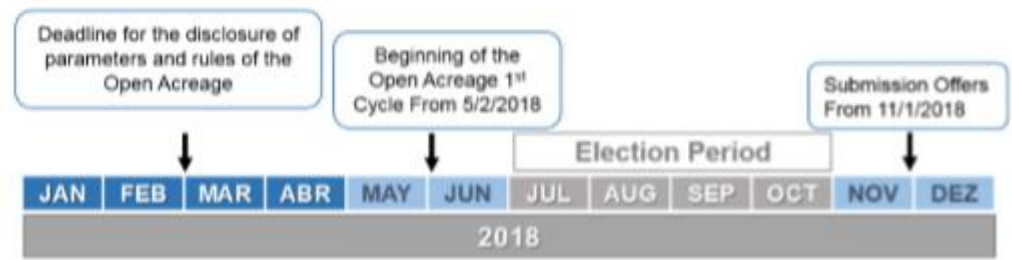


**884 Blocks**  
**Total Area: 345,800 km<sup>2</sup>**

**Offshore and Onshore Areas**

Blocks not awarded in the 15<sup>th</sup> Bidding Round are included

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



# Upstream Opening: Paid-off

## Brazil's Current State



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

339 Blocks

447 fields

105 group companies

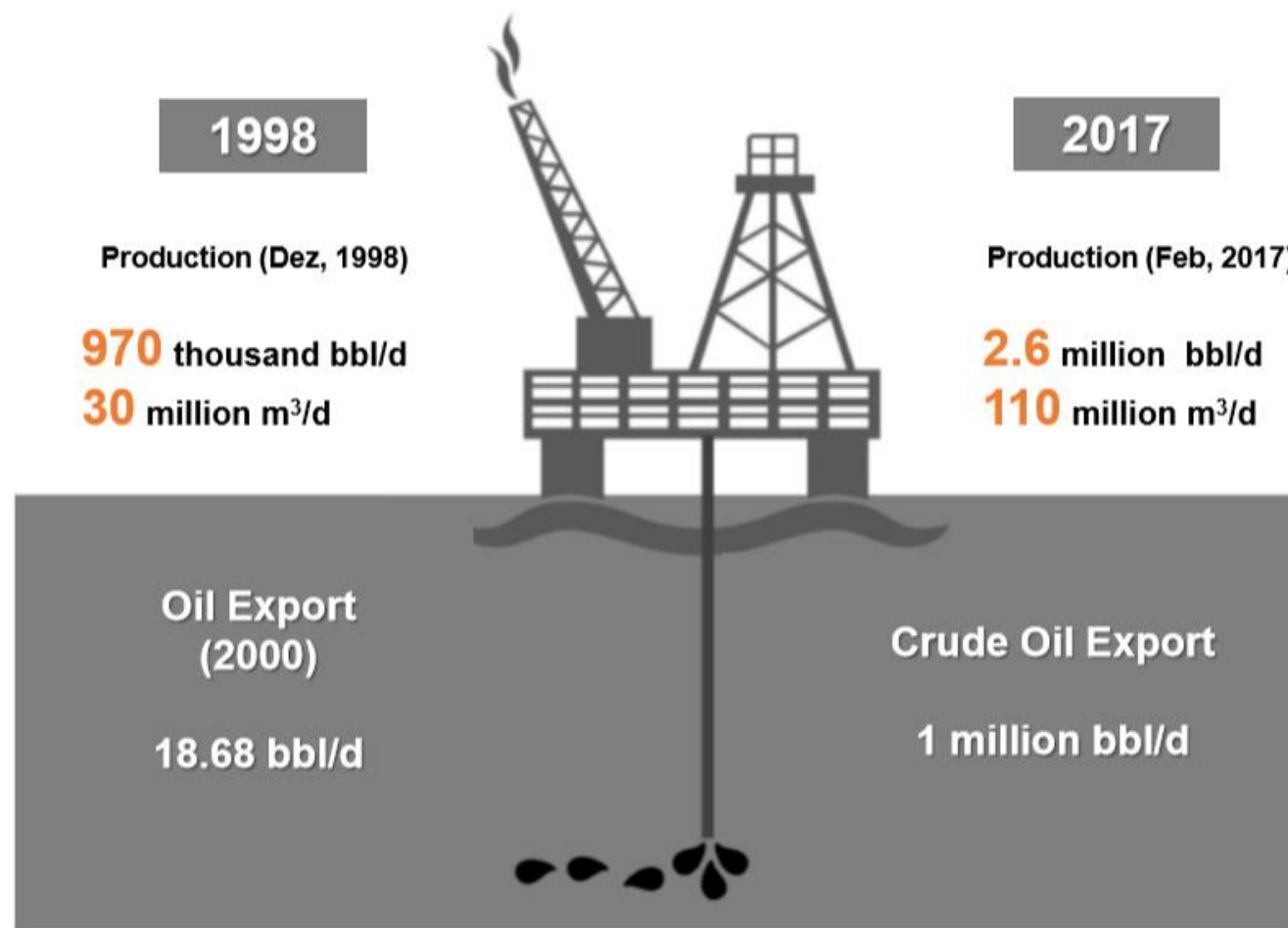
**Production  
(Feb, 2018)**

Oil 2.62 million barrels/d  
Natural Gas 110 m<sup>3</sup>/d

**Proven Reserves  
(Dez, 2017)**

Oil 12.8 billion barrels  
Natural Gas 367 billion m<sup>3</sup>

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



# Take aways

Regulation must serve specific Country Purposes/Policies, otherwise is useless! Discover and unlock new resources is the ultimate goal and the key metric of success.

- ✓ If possible, set up an Independent Regulator
- ✓ All Government entities (federal, regional, agencies, etc) 'should be' aligned around Energy Policies principles and targets
- ✓ Taxation and GT can kill even good Project (marginal ones have not chance at all!), regional dispute or unbalance too; smart split is critical
- ✓ Avoid multiple Exploratory Models (Concessions, PSC, Authorizations, etc.)
- ✓ Principles and Best Practices rather than a very Prescriptive regulation
- ✓ Flexible to adjust unexpected events (econ or geology) and or challengers projects
- ✓ Avoid do-undo regulatory practices
- ✓ Avoid to impose obligations that are not really achievable or brings inefficiencies to contract or delays investments in exploration and production
- ✓ Contract is the necessary authorizations to initiate and execute most of activities
- ✓ Make data that is critical for safety and best competition public as early as available

# Questions?

# Thanks!



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# Questions?

# Thanks!



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