



BRAZIL'S UPSTREAM MARKET:  
Beyond the Pre-Salt  
Philip Yang

**PETERS&CO LIMITED**  
ENERGY CONFERENCE

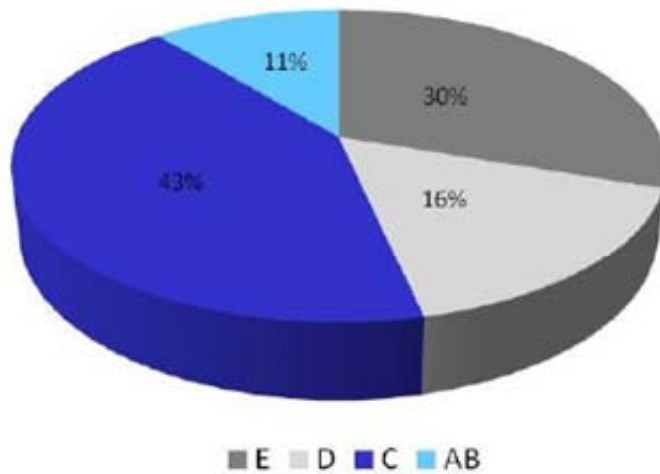
Chateau Lake Louise  
Lake Louise, Alberta -- January 27, 2011



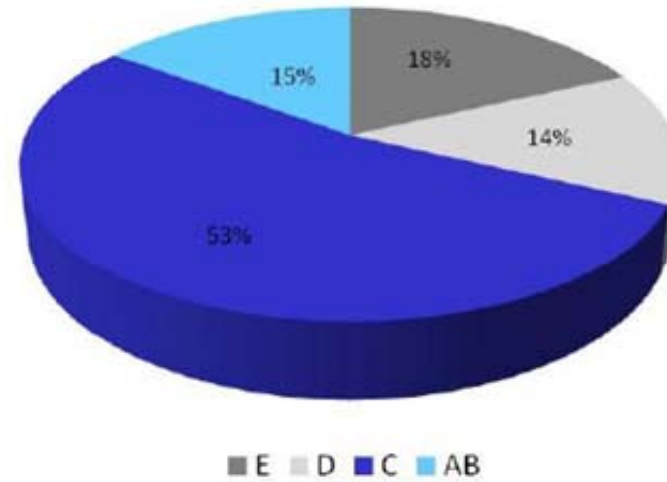
Territory	: 8.5 million km <sup>2</sup>
Population	: 200 million
GDP	: US\$ 1.3 trillion
Growth rate	: 3.7%
GDP per capita	: US\$ 6,844
Inflation	: 3.1%
Unemployment	: 7%

# Income distribution: a work in progress

2003 social class break down



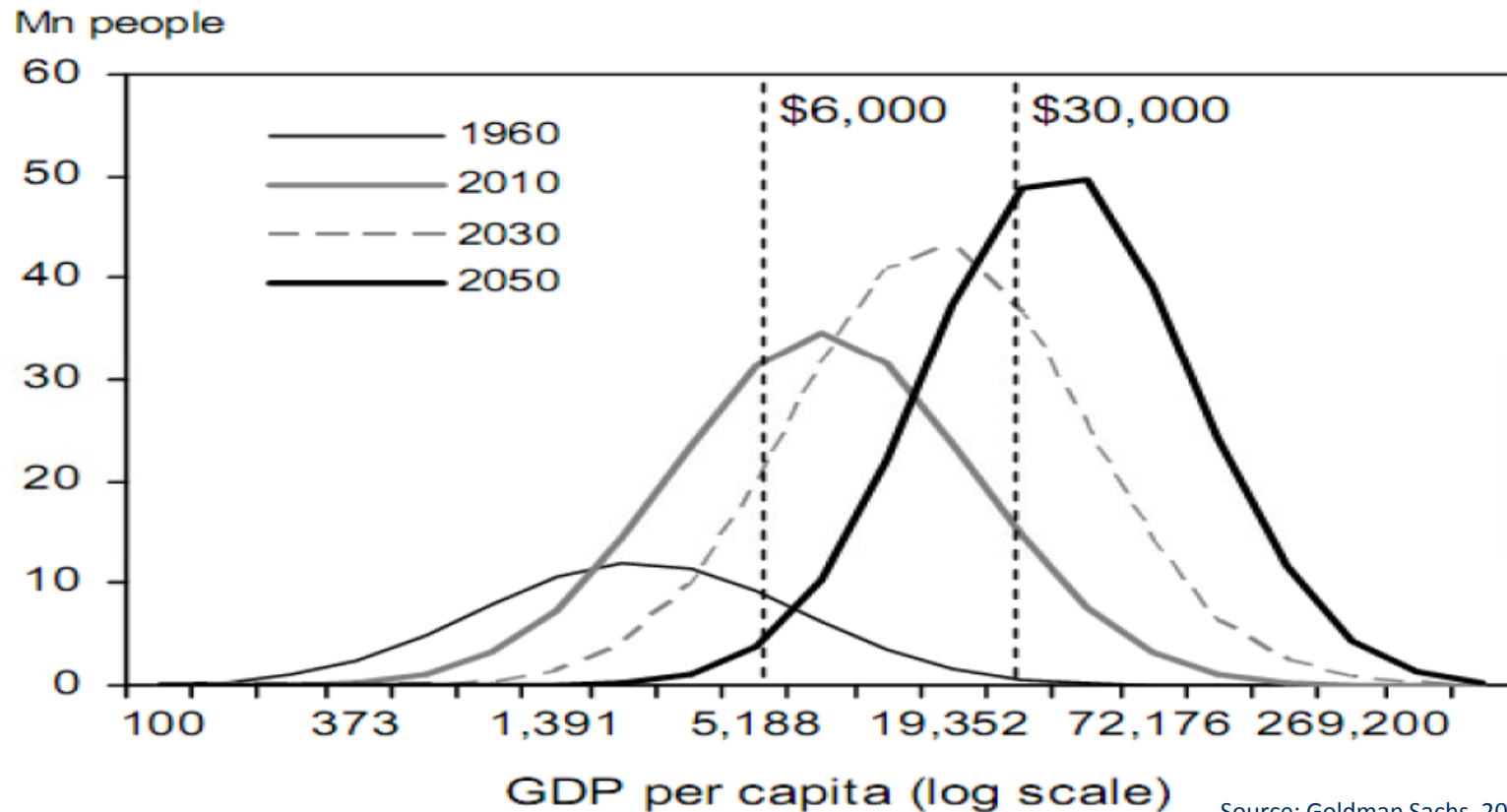
2009 social class break down



Economic Classes definition		
Monthly Household income from all sources (R\$)		
Class	Min	Max
AB	4,807	-
C	1,115	4,807
D	804	1,115
E	-	804

Source: Fundação Getúlio Vargas, in Arsago 2010

# Brazil GDP per Capita Forecast

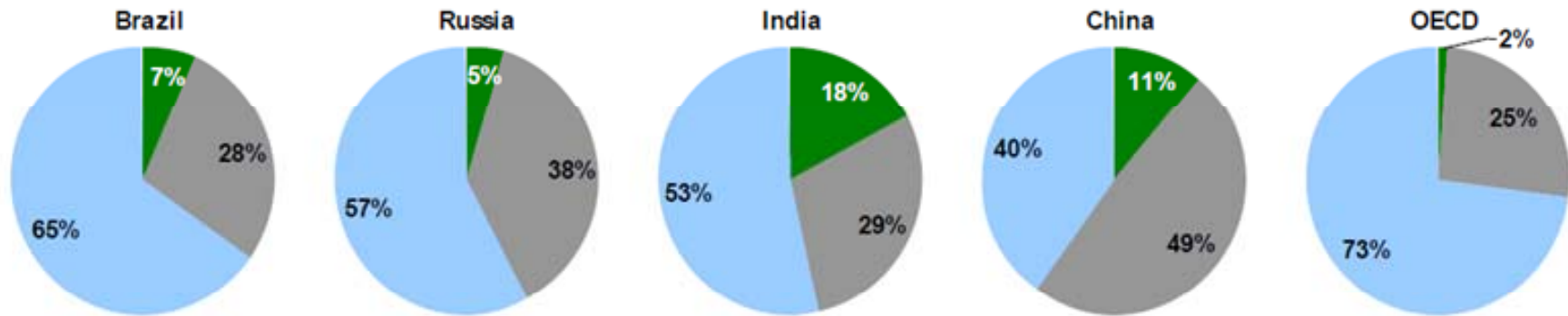


Source: Goldman Sachs, 2010

By 2050 Brazil will become one of the world's 5 largest economies with some 50million people with a per capita income of \$30,000 dollars.

## GDP factor breakdown

■ Agriculture ■ Industry ■ Services



Source: World Bank, EIU, in Arsago 2010

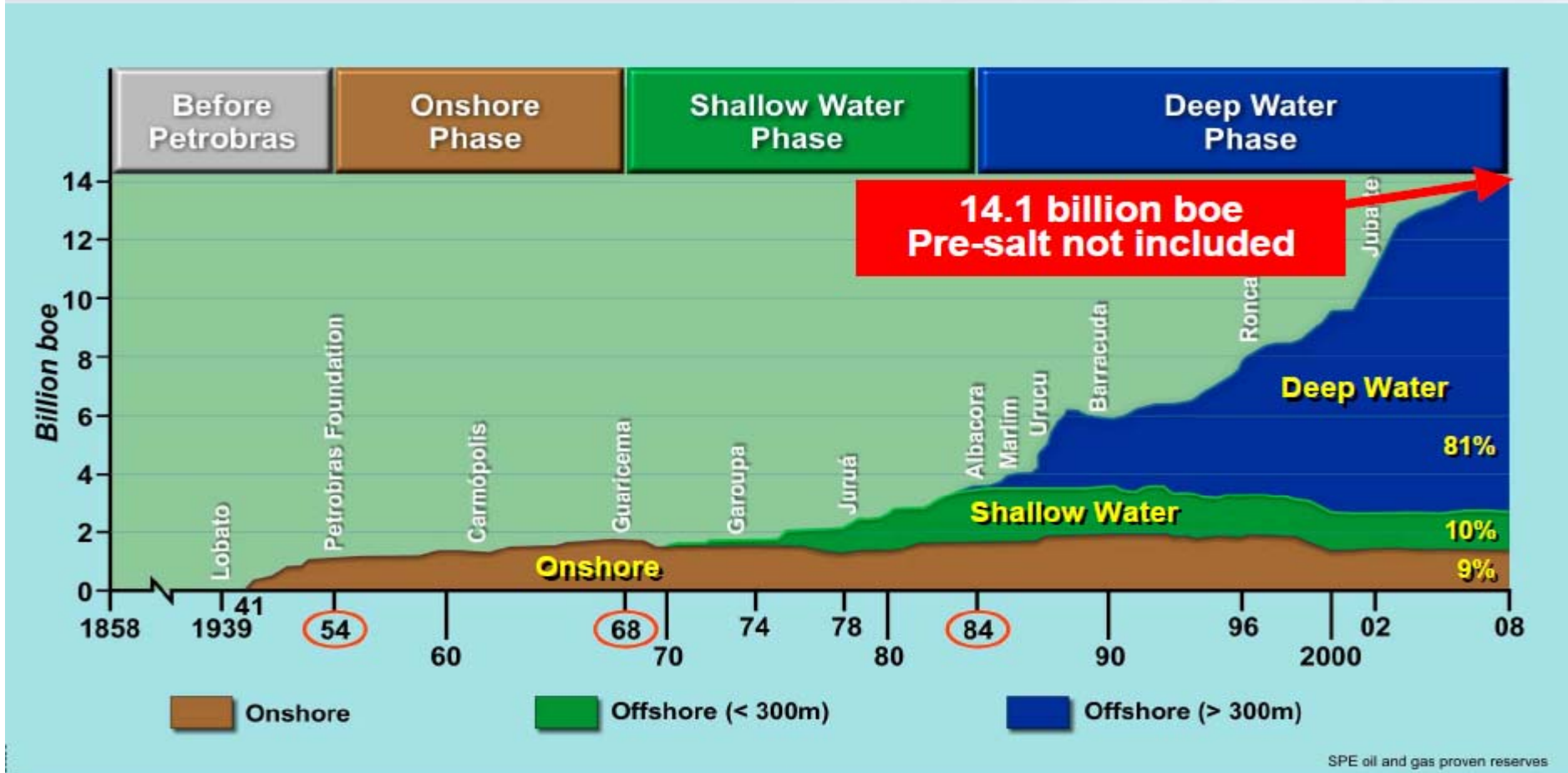
- 500,000 graduates and 10,000 PhD per year
- 2008: 2.7% share of the world's scientific papers
- World class research:
  - tropical medicine
  - Bioenergy
  - plant biology
- Research expenditure: 1% of GDP

Source: The Economist, Jan. 2011

- Continental size
  - Natural resources
  - Diversity
  - True “melting-pots”
- 
- Size of population
    - a 2nd Italy, Japan, Lebanon, Africa
    - many over 1 million people metropolis

- Former monopolist (1953-1997)
- Dominance : reserves, production, investment
- Federal budget *versus* Petrobras budget
- Institutional clout
- Bid rounds performance

## EVOLUTION OF PETROBRAS PROVEN RESERVES (BRAZIL)



- National Petroleum Agency (ANP)
- The challengers' view
- The “secondary” market

- 1997 : Petroleum Law and creation of ANP
- 1998 : Round Zero
- 1999-2006 : Bid Rounds (from Round 1 to 8)
- 2006 : First pre-salt discovery, October
- 2007-2008 : Rounds 9 & 10 (with no pre-salt areas)
- 2010 : the Pre-salt regime

- To redistribute wealth on social spending and other priorities;
- To avoid a “single focus” economy development based on solely oil and gas by ensuring a diversified and competitive economy;
- To use the scale and demand power to ensure technology transfer, technology development, and offset programs in procurement processes;
- To ensure optimal balance between incentives to investors and rents for the Brazilian government.

1997: Petroleum Law and creation of ANP

1998: Round Zero

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1999-2004: Bid Rounds One to Six: no or low competition

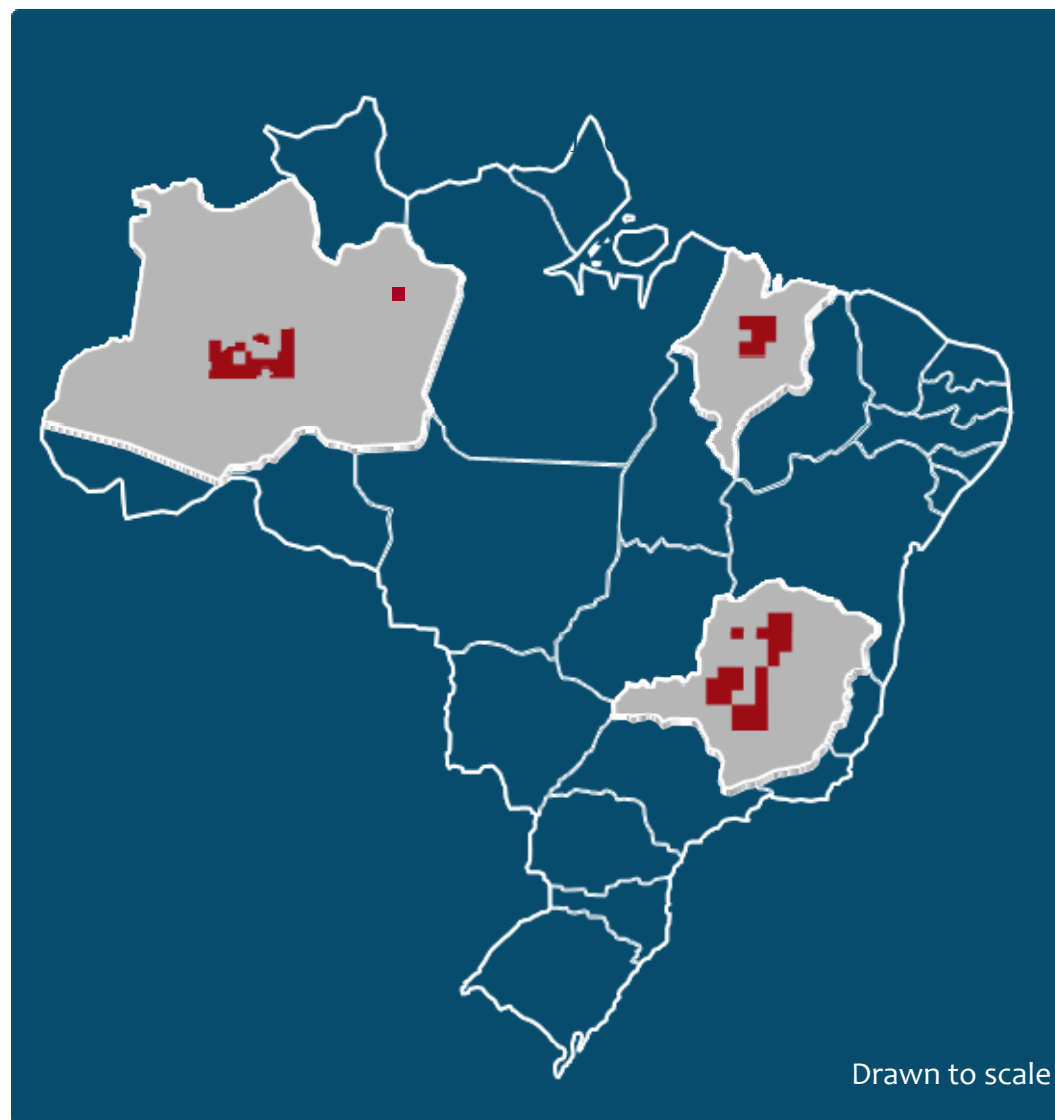
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**2005: Round Seven: PETRA ENERGIA**

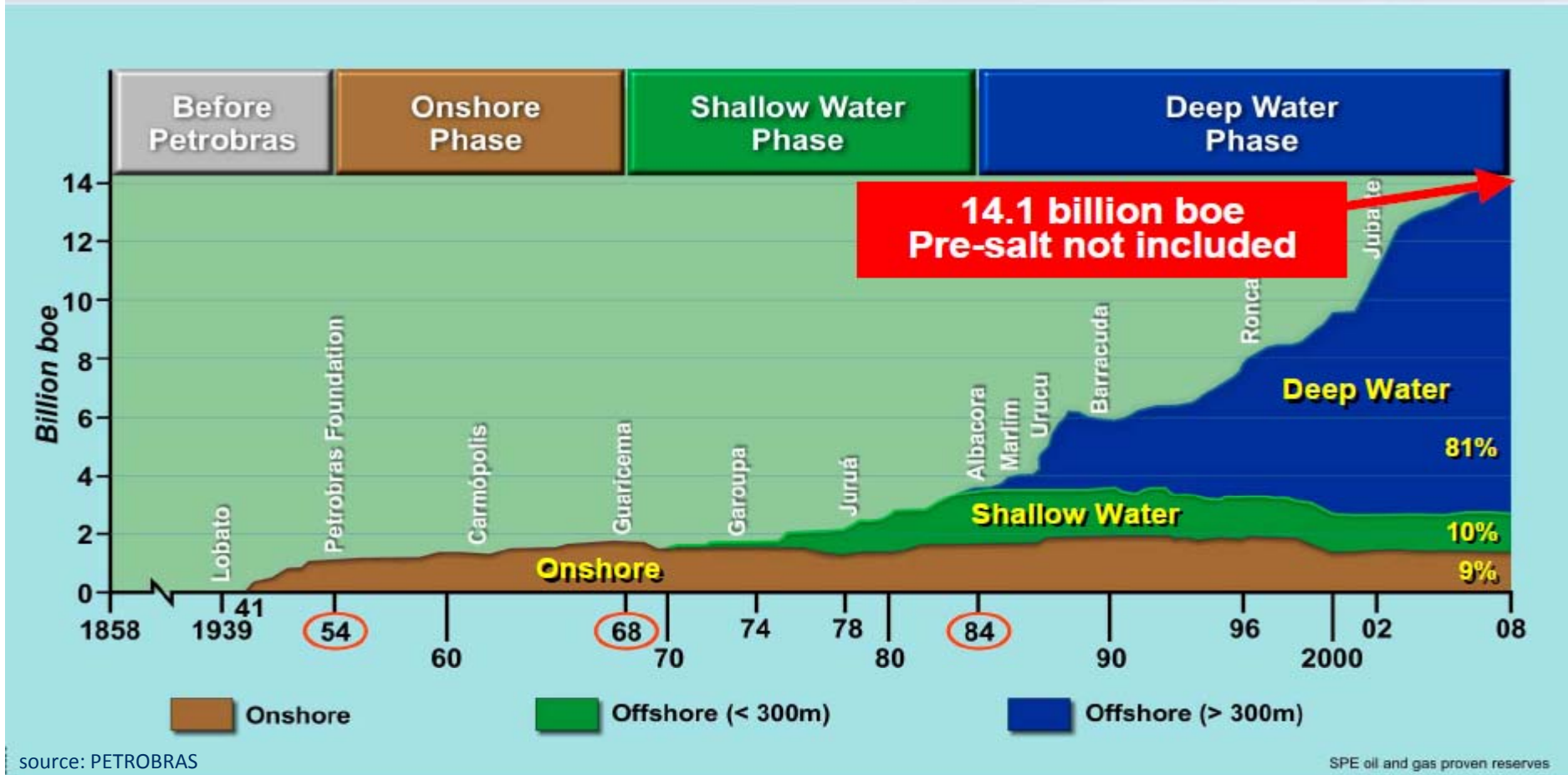
**2007: Round Nine: OGX**

# PETRA: ACREAGE POSITION

- Largest onshore player in Brazil:  
**143,231 km<sup>2</sup> (net 103,410 km<sup>2</sup> )**
- **53 blocks** spread in four strategic basins: Amazonas, Parnaíba, São Francisco and Solimões
- First mover advantage: acreage position cannot be replicated



## EVOLUTION OF PETROBRAS PROVEN RESERVES (BRAZIL)



The onshore abandoned: the W. Link Report  
Offshore blessing: onshore curse?  
 Beyond the pre-salt



- The Walter Link Report (1960)
- Offshore as the sole alternative: a “path dependent” track
- The neglect of the onshore

## Brazil's upstream: onshore underexplored



**U.S.:** 3.5 million wells since the Drake well  
**China:** 1 million wells since 1949

**Brazil:** 23,000 wells in 50 years  
**Canada:** 25,000 wells/year

### ▪ The OGX case

- Private placement (November 2007): US\$1.3 billion
- Round Nine (2007) : 21 offshore blocks (6,400 km<sup>2</sup>)
- Initial Public Offering (June 2008): US\$ 3.5 billion

### • Farm-in with OGX- PETRA (April 2009): 7 onshore blocks

- Three world class discoveries in two first wells, with ~2 tcf contingent and ~15 tcf prospective
  - ✓ Well 2 with accumulation of gas in the Lower Devonian age in two zones with net pay of 96 meters combined.
  - ✓ Drillstem test performed in one of the sections resulted in 3.4 million cubic meters per day AOF with wellhead pressure of 1,950 psi.
- 100 success rate: 3rd well to be spud soon
  - ✓ Well TD @ 3,200m
  - ✓ Cost estimates: R\$30million



# PETRA'S ASSETS

## PARNAÍBA: 30% OF 7 BLOCKS

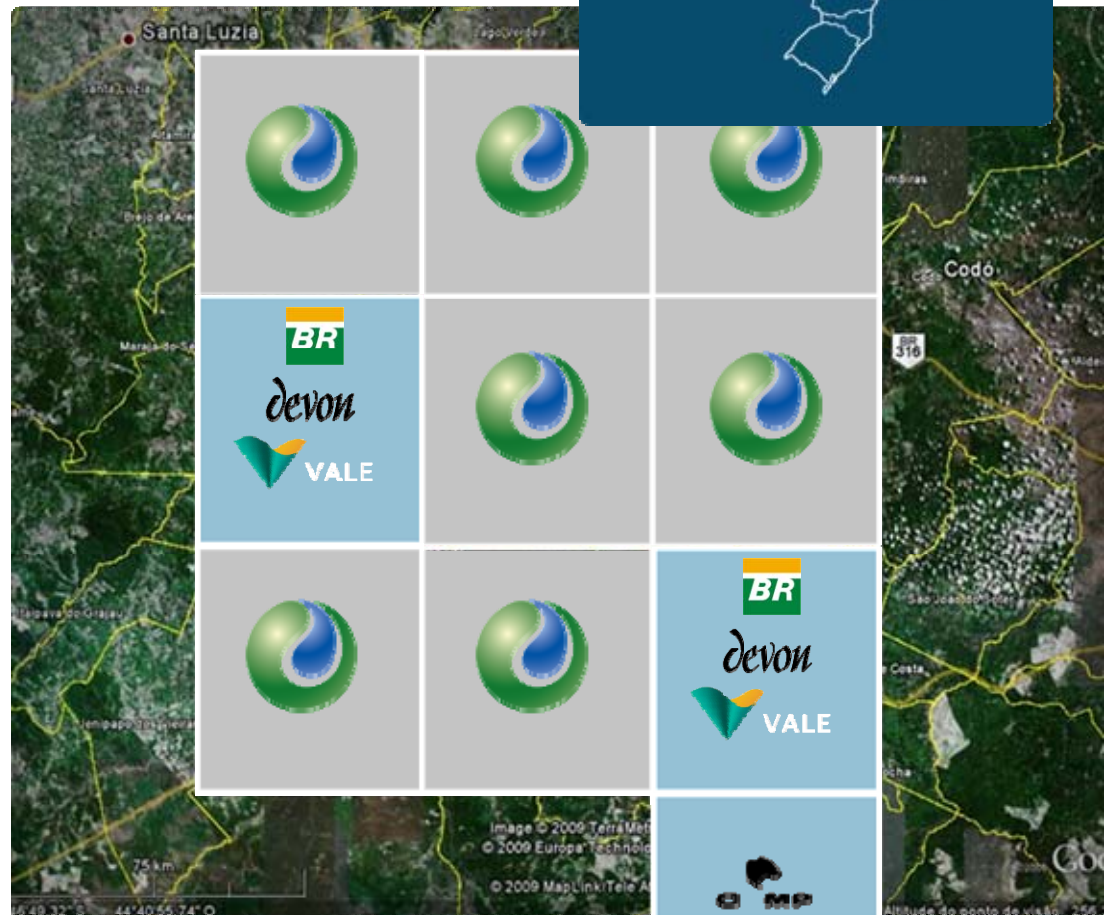


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- ✓ Well TD @ 3200m
  - ✓ Cost estimates: R\$30m



- Secondary market concept:
  - Market where non-ANP and non-Petrobras equity or working interests are traded
  
- HRT IPO
  - IPO ( end of October 2010): US\$ 1.1 billion raised
  - Market cap : US\$ 4,4 billion
  - Market value risen approx. 40% since first closing
  - Current multiple of about US\$3/boe for Brazilian certified resources

- **SINOPEC’s acquisition of relevant stake of Repsol**
  - US\$ 7.1 billion consideration
  - 40% stake in Repsol Brazil
  - New company worth US\$ 17.8 billion
  
- **Karoon IPO in Brazil postpone to year-end 2011**
  - Interesting portfolio
  - Management with limited knowledge about Brazil
  - Communication strategy with wrong focus
  
- **OGX ongoing Farm-Out process**
  - April 15, 2010: a farm-out transaction announced with an expected closing date by the end of 2010
  - Chinese companies Sinopec and CNOOC were rumored to be in very advanced stage of analysis
  - December 6, 2010: process has been put on hold and to be restated in 2011
  
- **Queiroz Galvão IPO**
  - Roadshow now underway
  - US\$ 1 billion capitalization

- **Petrobras will definitely keep its dominant position**
  - emphasis on pre-salt exploration and development
  - 72% of the pre-salt to be explored by Petrobras along with partners.
  
- **Bid Rounds**
  - Suspended in the past three years
  - Likely to be resumed
  - Time frame still unknown
  
- **Secondary market**
  - Diverse and dynamic now
  - OGX : farm down
  - PETRA: private placement for raising US\$ 1 billion dollar
  - Scarcity value as result of suspension of Rounds

- **Brazil: still a non-mature upstream market**
  - range or classes of exploration projects still limited
  - yet reasonable number of opportunities
  - different types of time and return schedules
  
- **Defining feature of Brazil's upstream market:**
  - onshore was forgotten and underexplored
  
- **Main message:**
  - Brazil is not limited to the pre-salt
  - there is a horizon beyond the pre-salt; in the ONSHORE
  - recent world-class discoveries in the onshore
  
- **A new frontier for unconventional gas**