THE BRAZILIAN OIL AND GAS SECTOR

OPPORTUNITIES AND CHALLENGES IN BRAZIL’S OIL AND GAS INDUSTRY

August 2015
São Paulo
Brazil is expanding E&P investments and is now the world’s 11th largest oil and gas producer.

- Brazil was the 11th largest oil and gas producer in 2014 with an average of 2.3 million bpd.
- The volume of Brazilian extracted oil is 20% of the volume extracted by the US, the largest producer in 2014.

4.6% of Brazil’s GDP

BRL 223bn in 2013*

Source: IBGE, Brazilian Central Bank *Includes oil and gas exploration and production, support activities and oil derivatives production.
**ON-GOING INVESTMENTS ARE EXPECTED TO MAKE BRAZIL A TOP TEN GLOBAL OIL PRODUCER BY 2020**

Heavy investments in exploration and production to increase capacity.

**RANKING OF TOP OIL PRODUCERS 2014, BY MILLION BPD**

- United States
- Saudi Arabia
- Russia
- Canada
- Emirate
- Iran
- Iraq
- Kuwait
- Mexico
- Venezuela
- Nigeria
- Brazil
- Qatar
- Norway
- Angola
- Kazakhstan

**BRAZIL OIL AND GAS PRODUCTION AND FORECAST, 2005-2020**

- Pre-salt discoveries will boost Brazilian oil and gas production further in the next years.

**THE SOURCE:** BRAZILIAN NATIONAL OIL AGENCY (ANP), IEA, BMI

*Forecast: BMI Oil & Gas Report*
96% OF OIL AND GAS PRODUCTION IN BRAZIL TAKES PLACE OFFSHORE
LARGEST RESERVES CONCENTRATED TO THE SOUTHEASTERN COAST LINE

E&P IN BRAZIL HIGHLY DEPENDENT ON OFFSHORE SOLUTIONS AND DEEP-SEA OIL EXTRACTION TECHNOLOGY

E&P IN BRAZIL HIGHLY DEPENDENT ON OFFSHORE SOLUTIONS AND DEEP-SEA OIL EXTRACTION TECHNOLOGY

SOURCE: BRAZILIAN NATIONAL OIL AGENCY (ANP)
PETROBRAS CONTROLS 86% OF OIL PRODUCTION AND 82% OF GAS PRODUCTION IN BRAZIL.

PETROBRAS IS THE LARGEST COMPANY IN BRAZIL AND DOMINATES THE LOCAL OIL AND GAS INDUSTRY

SOURCE: PETROBRAS, BRAZILIAN NATIONAL OIL AGENCY (ANP)

* ANP/SPE CRITERIA
..AND 99% OF THE REFINING CAPACITY
TOTAL CAPACITY IS INCREASING AND REACHED 2.4 MILLION BARRELS/DAY IN 2014

OIL REFINING CAPACITY IN BRAZIL, BY MILLION BPD

BRAZILIAN OIL REFINERIES

<table>
<thead>
<tr>
<th>Refinery</th>
<th>State</th>
<th>Municipality</th>
<th>Operating since</th>
<th>Capacity (bpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replan</td>
<td>SP</td>
<td>Paulínia</td>
<td>1972</td>
<td>415,128</td>
</tr>
<tr>
<td>RLAM</td>
<td>BA</td>
<td>São Francisco do Conde</td>
<td>1950</td>
<td>377,389</td>
</tr>
<tr>
<td>Revap</td>
<td>SP</td>
<td>São José dos Campos</td>
<td>1980</td>
<td>251,593</td>
</tr>
<tr>
<td>Reduc</td>
<td>RJ</td>
<td>Duque de Caxias</td>
<td>1961</td>
<td>242,158</td>
</tr>
<tr>
<td>Repar</td>
<td>PR</td>
<td>Araucária</td>
<td>1977</td>
<td>207,564</td>
</tr>
<tr>
<td>Refap</td>
<td>RS</td>
<td>Canoas</td>
<td>1968</td>
<td>201,274</td>
</tr>
<tr>
<td>RPBC</td>
<td>SP</td>
<td>Cubatão</td>
<td>1955</td>
<td>169,825</td>
</tr>
<tr>
<td>Regap</td>
<td>MG</td>
<td>Betim</td>
<td>1968</td>
<td>150,956</td>
</tr>
<tr>
<td>Recap</td>
<td>SP</td>
<td>Mauá</td>
<td>1954</td>
<td>53,463</td>
</tr>
<tr>
<td>Reman</td>
<td>AM</td>
<td>Manaus</td>
<td>1956</td>
<td>45,916</td>
</tr>
<tr>
<td>RPCC</td>
<td>RN</td>
<td>Guamaré</td>
<td>2000</td>
<td>37,739</td>
</tr>
<tr>
<td>Riosrandense</td>
<td>RS</td>
<td>Rio Grande</td>
<td>1937</td>
<td>17,014</td>
</tr>
<tr>
<td>Manguinhos*</td>
<td>RJ</td>
<td>Rio de Janeiro</td>
<td>1954</td>
<td>13,838</td>
</tr>
<tr>
<td>Univen*</td>
<td>SP</td>
<td>Itupeva</td>
<td>2007</td>
<td>9,158</td>
</tr>
<tr>
<td>Lubnor</td>
<td>CE</td>
<td>Fortaleza</td>
<td>1966</td>
<td>8,177</td>
</tr>
<tr>
<td>Dax Oil*</td>
<td>BA</td>
<td>Camaçari</td>
<td>2008</td>
<td>2,095</td>
</tr>
</tbody>
</table>

* REFINERIES NOT CONTROLLED BY PETROBRAS

SOURCE: BRAZILIAN NATIONAL OIL AGENCY (ANP)
PETROBRAS IS THE ONLY COMPANY SPANNING THROUGH THE ENTIRE OIL AND GAS VALUE CHAIN

**Upstream**
- Exploration
- Production

**Downstream**
- Transportation
- Refining
- Retail

**Petrobras**

**Shell**
- Shell recently acquired BG Group

**Repsol Sinopec**
- Repsol is not refining in Brazil since 2010

**Statoil**

**Sinochem**

**BR**
- BR is Petrobras’ distributor

**Raízen**
- Shell is distributing through Raízen, a joint venture with a local company, Cosan

**Ipiranga**
- Ipiranga’s old refinery (Riograndense) is now controlled by Petrobras, Ultrapar and Braskem

THE COMPANY DOMINATES BOTH UPSTREAM AND DOWNSTREAM SEGMENTS

SOURCE: RESEARCH, BRAZIL OIL & GAS REPORT

THE FLUXOGRAM INCLUDES THE TOP PRODUCERS AND RETAILERS
USD 130 BILLION TO BE INVESTED 2015-2019
INVESTMENTS FOCUSED ON E&P BUT ALSO INFRASTRUCTURE INCLUDING GAS PIPELINES

PETROBRAS 2015-2019 BUSINESS PLAN INVESTMENTS

- Production Development: 89,4 BUSD (82,0%)
- Operational Support: 3,0 BUSD (3,0%)
- Exploration: 11,3 BUSD (10,0%)
- International Investments: 4,9 BUSD (5,0%)
- Total: 108,6 BUSD (100,0%)

- Maintenance and Infrastructure: 8,8 BUSD (69,0%)
- RNEST Refinery (PE): 1,4 BUSD (11,0%)
- BR Distributor: 1,3 BUSD (10,0%)
- Other (Supply): 1,3 BUSD (10,0%)
- Total: 12,8 BUSD (100,0%)

- Gas Pipeline: 5,0 BUSD (80,4%)
- Energy: 0,9 BUSD (13,8%)
- Chemical Gas Plants: 0,3 BUSD (5,3%)
- LNG Regasification: 0,1 BUSD (1,0%)
- Total: 6,3 BUSD (100,0%)

69% OF PETROBRAS PLANNED INVESTMENTS 2015-2019 DESTINED FOR PRODUCTION DEVELOPMENT
LEGISLATION REQUIRES OIL & GAS OPERATORS TO FULFILL LOCAL CONTENT REQUIREMENTS..

EXAMPLE:

% local content

PRODUCT SUPPLIER

(Local Content Certificate + Invoice)

OIL & GAS OPERATOR

(Local Content Report)

BRAZILIAN OIL & GAS AGENCY

(Regulation)

The local content of a good or service is measured by a percentage of the sales price excluding taxes

Operators are obliged to publish specific local content targets for new investments

ANP establishes the minimum local content for field exploration concessions

EXCEPTIONS:

1. Extreme differences between foreign and local supplier prices
2. Compromising delivery critical deadlines
3. New technology, unavailable locally

EXAMPLE OF LOCAL CONTENT CALCULATION FOR PRODUCTS:

CURRENT MINIMUM LOCAL CONTENT FOR OPERATORS (SUCH AS PETROBRAS):

<table>
<thead>
<tr>
<th>Product</th>
<th>Water (+100m depth)</th>
<th>Water (up to 100m depth)</th>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploration</td>
<td>37%</td>
<td>51%</td>
<td>70%</td>
</tr>
<tr>
<td>Development</td>
<td>55%</td>
<td>63%</td>
<td>77%</td>
</tr>
</tbody>
</table>

PETROBRAS ARE FACING CHALLENGES TO FIND SUITABLE LOCAL SUPPLIERS TO FULFILL LOCAL CONTENT REQUIREMENTS

SOURCE: ANP, PETROBRAS, EXAME
..YET FOREIGN COMPANIES ARE PRODUCING 80% OF EQUIPMENT DELIVERED TO THE E&P SEGMENT

TECHNICAL CHALLENGES IN BRAZIL FOR PRE-SALT OIL AND GAS EXTRACTION, AS STATED BY THE NATIONAL OIL AGENCY

<table>
<thead>
<tr>
<th>Demanded Equipment and Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ There is a demand for the following technologies:</td>
</tr>
<tr>
<td>▶ * Quantities needed in order to reach full projected capacity</td>
</tr>
<tr>
<td>▶ Turbo generators</td>
</tr>
<tr>
<td>▶ Centrifugal compressor</td>
</tr>
<tr>
<td>▶ Flares</td>
</tr>
<tr>
<td>▶ Sulfate removal units</td>
</tr>
<tr>
<td>▶ Gas engines</td>
</tr>
<tr>
<td>▶ Gas turbines</td>
</tr>
<tr>
<td>▶ Gas reciprocal compressor</td>
</tr>
<tr>
<td>▶ Centrifugal air compressor</td>
</tr>
<tr>
<td>▶ Subsea sphere valves</td>
</tr>
<tr>
<td>▶ Diesel engines</td>
</tr>
<tr>
<td>▶ Flow instruments</td>
</tr>
<tr>
<td>▶ Positioning systems (POS)</td>
</tr>
<tr>
<td>▶ Synchronized engines and generators</td>
</tr>
<tr>
<td>▶ Duplex and super-duplex steel</td>
</tr>
<tr>
<td>▶ Multiphase and submersible vertical pumps</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXISTENT</th>
<th>NEEDED*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Platforms</td>
<td>48</td>
</tr>
<tr>
<td>Drilling Rigs</td>
<td>57</td>
</tr>
<tr>
<td>Oil Tankers</td>
<td>55</td>
</tr>
</tbody>
</table>

SIGNIFICANT OPPORTUNITIES FOR SWEDISH TECH SUPPLIERS WITHIN OFFSHORE AND DEEP-SEA EXTRACTION

SOURCE: BRAZILIAN NATIONAL OIL AGENCY (ANP), PWC
PETROBRAS IS GOING THROUGH A MAJOR CRISIS
THE ON-GOING CORRUPTION SCANDAL “LAVA JATO” HAS BEEN A MAJOR BLOW FOR PETROBRAS AND THE BRAZILIAN GOVERNMENT

“LAVA JATO” SCANDAL

- In March 2014, an investigation was triggered about a money laundry scheme involving high executives from Petrobras and large EPC contractors.
- Brazil’s largest construction companies such as Odebrecht, Andrade Gutierrez and Camargo Corrêa are under investigation for setting up illegal kickback schemes linked to (former) Petrobras’ directors in order to win major construction contracts.
- Politicians within the current administration are also under investigation for receiving money from contractors, causing public outrage towards the government party.
- It is estimated that Petrobras had a loss of 20 BBRL due the scheme, 6,2 BBRL only in 2014.
- So far 16 companies and 138 individuals have been incriminated.

PETROBRAS CRISIS

- Downfall of stock prices and threatened relationship with investors
- Decrease of 37% from 2014 on predicted investments compared to the new 130 BUSD from 2015
- Divestments of 13 BUSD in 2015 and 2016

INCREASE OF DEBT

PETROBRAS AND THE BRAZILIAN GOVERNMENT IS CURRENTLY STRUGGLING TO REGAIN CREDIBILITY FROM THE PUBLIC AND INVESTORS

SOURCE: PETROBRAS, WORLD BANK, IBOVESPA, MEDIA OUTLETS

* DATA AND FORECAST BY WORLD BANK

BUSINESS SWEDEN
DESPITE CRISIS, GREAT OPPORTUNITIES AS PETROBRAS CONTINUES HEAVY INVESTMENTS

Industry
- Large unexplored pre-salt reserves
- Growing production and refining capacity
- Business concentrated in the Southeast region (SP and RJ), next to industrial complexes

Players
- Petrobras’ continues large investment plans
- Lack of local competition
- Privilege for companies producing in Brazil

Market Trends
- High demand for new technology and megaprojects
- Exploration of unconventional reserves such as shale oil
- Recovery of mature fields and environmental investments

Business in Brazil
- High production costs
- Excessive bureaucracy and complex tax system
- Current economic crisis

Industry
- Lack of qualified labor force
- Local content requirements for oil and gas operators
- Petrobras monopoly upstream and downstream

Players
- “Lava Jato” scandal and Petrobras’ crisis
- Government control over Petrobras
- Decrease of Petrobras’ forecasted investments

What challenges should companies be ready to face?

Which opportunities make Brazil interesting?

CRISIS COULD RESULT IN REFORM OF OIL AND GAS SECTOR OPENING NEW OPPORTUNITIES FOR FOREIGN SUPPLIERS
BUSINESS SWEDEN OFFERS A FULL SERVICE PORTFOLIO FOR EFFICIENT MARKET ENTRY

OUR INDUSTRY FOCUS

ICT
HEALTH CARE & LIFE SCIENCE
MATERIALS & MANUFACTURING
SECURITY
CREATIVE INDUSTRIES
ENERGY & ENVIRONMENT
TRANSPORT SYSTEMS

OUR CUSTOMERS

SWEDISH COMPANIES EXPANDING INTO BRAZIL
LOCAL SUBSIDIARIES OF SWEDISH COMPANIES
SWEDISH GOVERNMENT

OUR MARKET OFFERING

MARKET ENTRY STRATEGY
PARTNER SEARCH
MARKET ANALYSIS
IMPORT ANALYSIS
ACQUISITION SUPPORT
STAKEHOLDER MANAGEMENT
SOURCING ANALYSIS
BUSINESS SUPPORT OFFICE *
RECRUITING

OUR STRENGTH

EXPERIENCED TEAM WITH INDUSTRY FOCUS
UNIQUE OWNERSHIP PROVIDE ACCESS TO THE SWEDISH GOVERNM.& FUNDING STRUCTURE
GLOBAL PRESENCE
LOCAL & SWEDISH PERSPECTIVE TO BUSINESS OPPORTUNITIES
ACCESS TO HIGH LEVEL AUTHORITIES & BUSINESS NETWORKS IN BRAZIL

* BSO SERVICES INCLUDE: OFFICE PLACE & SERVICE, ADMINISTRATION, COMPANY ESTABLISHMENT (INCL LEGAL ADDRESS), DELEGATE MANAGER AND FINANCIAL ANALYSIS
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BUSINESS SWEDEN IN BRAZIL

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