Understanding Local Opportunities in the Brazilian Petroleum Sector

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ONIP - Brazilian National Organization of the Petroleum Industry - Members

INDUSTRY

NATIONAL INDUSTRY SYSTEM

FEDERAL GOVERNMENT

OPERATORS

STATE GOVERNMENT

ONIP - Organização Nacional da Indústria do Petróleo
Mission

To Contribute to increase competitiveness and sustainability of the domestic industry to maximize local content and the generation of employment and income in the Oil and Gas sector.
CadFor - Registry System for Operators in Brazil
The objective is to increase the knowledge about local suppliers
CadFor - Objectives

**Qualified Suppliers Data**

**Structured Actions for LC Solutions**

**Technical Meetings with Suppliers**

**Initiatives of Interaction Between Buyers and Suppliers**

**Support the Registration of Suppliers in CADFOR at Expositions and Other Forums**
## Projected Investments - 2014 / 2017

Selected sectors (R$ billion)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil &amp; Gas</td>
<td>458</td>
<td>42%</td>
</tr>
<tr>
<td>Mining &amp; Quarrying</td>
<td>48</td>
<td>4%</td>
</tr>
<tr>
<td>Automotive</td>
<td>74</td>
<td>7%</td>
</tr>
<tr>
<td>Paper &amp; Cellulose</td>
<td>19</td>
<td>2%</td>
</tr>
<tr>
<td>Petrochemical</td>
<td>25</td>
<td>2%</td>
</tr>
<tr>
<td>Steel</td>
<td>10</td>
<td>1%</td>
</tr>
<tr>
<td>Electronics</td>
<td>26</td>
<td>2%</td>
</tr>
<tr>
<td>Health</td>
<td>13</td>
<td>1%</td>
</tr>
<tr>
<td>Aerospace</td>
<td>9</td>
<td>1%</td>
</tr>
<tr>
<td>Others</td>
<td>418</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,100</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Fonte: BNDES*
Another view

Brazil E&P Investments (incl. IOC's)

Fonte: Shell
THE “BIG MONEY” IN OFFSHORE CAPEX GOES TO DRILLING AND PLATFORMS

Offshore Capex per category

- Other
- Drilling & Well services
- Installations
- Subsea Production Systems
- Fixed & Floating platforms
- FEED

Source: IHS CERA
Pre-Salt

149,000 Km², high rates of CO₂ and H₂S, high production volumes and high pressures (TUPI – 9,000 psi).
FUTURE!!!

DIAGRAMA DE OPERAÇÃO (3D)

Injeção de água salgada

Compressão de gás

Bombeio multifásico

SEPARAÇÃO

Água e óleo

Gás
Other Companies with development plans for technological centers in Brazil:

- Cameron
- IBM
- Technip
- Weatherford
- Wellstream
The P-ZZ\(^{(1)}\) vendor list indicates the national chain growth potential – about 40% of the equipment groups have not been considered local suppliers.

### Supply of equipment and Systems

<table>
<thead>
<tr>
<th>Companies in Vendor List P-ZZ</th>
<th>Number of Groups</th>
<th>Suppliers % Estimated Value</th>
<th>Type of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>111</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Other countries</td>
<td>286</td>
<td>38%</td>
<td>Turbo generators; Centrifugal Compressors; Flare; Sulfate Removal Unit; Gas Motors; Gas Reciprocal Compressors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37%</td>
<td>Centrifugal Air Compressors; Control Valves; Diesel Motors; Flow Instruments; Positioning Systems (POS); Synchronized Motors and Generators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18%</td>
<td>Automation and Control systems; Centrifugal Pumps; VAC equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7%</td>
<td>Heat Exchangers; Screw Type Air Compressors; Rotary Pumps</td>
</tr>
</tbody>
</table>

1) Recent platform
Source: Booz & Company Analysis
Local Content - The offshore supply chain is quite broad, covering a large number of segments.

1 Includes all materials and equipment for which the offshore chain is unrepresentative, thus staying out of the main supply chain.
OTC Names 2015 Award Recipients

The 2015 Offshore Technology Conference (OTC), to be held May 4–7 at NRG Park, will kick off on Sunday, May 3 in Houston with the Annual OTC Dinner to honor the recipients of this year’s Distinguished Achievement Awards, this year recognizing Elmer (Bud) Danenberger III for individual achievement, the Petrobras pre-salt development for corporate achievement, and Ray R. Ayers with the Heritage Award.

The OTC Distinguished Achievement Award for Individuals will honor Elmer (Bud) Danenberger III for his contributions to offshore safety and environmental protection. Danenberger held a 38-year career with the U.S. Department of the Interior in the offshore oil and gas program. He initiated the MMS industry awards program and coauthored legislation leading to offshore renewable energy and
Focus on Brazil Pre-Salt Challenges – Ultra Deep Waters

- **Developments - 2012/2013**
  - Subsea separation Oil/Water;
  - 4D permanent seismic monitoring - partial - there are still challenges for UDW - Jubarte;
  - Subsea Water Injection - tested in Albacora;
  - Flexible Riser with buoyancy system and Flowlines – 2,200m;
  - Subsea Multiphase Pumping - tested in Barracuda;
  - Drilling horizontal wells through salt (second well high angle – Oct, 2013).

Source: ANP.
1. First float risers sustaining (BSR)
Sistema Integrado de Produção Submarina

CONSELHO DELIBERATIVO DO PROGRAMA DE INOVAÇÃO CONTEÚDO LOCAL
- ANP
- IBP-OPERADORAS
- PETROBRAS
- ONIP

EMBRAPPII
- COPPE, CIMATEC, IPT, INT (PUC-RJ), UFRGS(LEMOT)...

MCTI
- PLATAFORMAS DO CONHECIMENTO

INOVA PETRO
- FINEP, BNDES, PETROBRAS

CLUSTER SUBSEA-RJ
- RIO-SEDEIS
- ONIP
- MDIC
- INTERNACIONALIZAÇÃO

ANP-ONIP
- ENGENHARIA BÁSICA CLÁUSULA

SEBRAE/ONIP/APEX
- TRANSFERÊNCIA DE TECNOLOGIA INTERNACIONALIZAÇÃO

ABDI
- ATS
- ONIP
Conclusions

- The petroleum sector is crucial for Brasil’s economical development;
- The country is one of the most dynamic markets in the world today;
- Opportunities cover all business sectors;
- The size of CAPEX is getting all the attention but OPEX is already very attractive and will grow along time;
- The presence of a solid industrial base in Brasil should be considered local content could be an ally rather than an obstacle;
- Offshore architecture will change; new technologies, new challenges and new opportunities;
- Aggregating local content whenever possible is always a good strategy;
Thank you