Petrobras Repositioning in Refining

Preliminary model
**Initial considerations**

In order to support its final proposal regarding partnerships in the refining segment, Petrobras held a seminar with the participation of the Ministry of Mines and Energy (MME), the National Petroleum Agency (ANP), the Brazilian Institute of Petroleum, Natural Gas and Biofuels (IBP) and other interested entities, to learn about these players’ perspective on the subject and to introduce its preliminary model for partnerships in the sector.

It was a technical event, without the goal of announcing a decision on the matter. Accordingly, Petrobras clarified that the preliminary model had no formal approval of its governance bodies (Executive Board and Board of Directors).

The pursuit of partnerships in the refining segment was approved in the Petrobras Strategic Planning (PE) and the 2017-2021 Business and Management Plan (PNG), and reinforced in PNG 2018-2022, as indicated in the strategy to “reduce Petrobras’ E&P, Refining, Transportation, Logistics, Distribution and Sale risks through partnership and disinvestments.”

This document is the presentation made by Petrobras at the event.
Structural changes in the industry and country are requiring a revision of Petrobras portfolio in order to prepare for the future.

Prepare the company for the future

- The industry is facing both demand and supply challenges.
- Transition to a low carbon economy is a trend, with multiple disruptive effects for which oil & gas companies have to prepare.
- New technologies will continue to transform the industry.
- Government has sought to create conditions to attract private investors in the refining and primary logistics sector in Brazil.
Refining is the only part of the oil chain where few players compete with Petrobras.

Note: In 2016, the consumption of oil products in Brazil was 778 million barrels of oil equivalent. Of this total, 674 million were produced locally, 178 million were imported and 74 million were exported. Source: Production: ANP, Statistical Yearbook 2016, considers only oil production in '16; Refining: ANP, data referring to '16 collected in March '17; Distribution: Sindicom, considers all fuels, data '16 collected in May '17.
Market in Brazil has unique structural advantages for refiners

- Seventh largest fossil fuel market
  - 2.3 Mbpd in 2017

- Growing trend, as opposed to more mature markets
  - + 1.8%/year until 2030

- Exporter of crude oil and importer of fossil fuel, with logistics constraints
  - High margins

Source: ANP, Santander, Petrobras - Estimate based on Current Scenario
Petrobras market dominance brings investment obligation and lack of price predictability

Only investor in refining and primary logistics in Brazil

Petrobras investment in refining in Brazil (US$ Bn, real values)

Source: MME, Santander

Difficulty to forecast market due to lack of competitive dynamics

Fuel prices vs. import parity in Brazil (R$/m3)
Fuel demand growth in Brazil will require new investments in refining.

Forecasted fossil fuel demand in Brazil
In Mbd

Source: Petrobras - Estimate based on Current Scenario
Since 2010, explosive debt growth has required a deleveraging strategy to fund growth

Debt reduction
Net debt/adjusted EBITDA

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Debt Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q10</td>
<td>5.4</td>
</tr>
<tr>
<td>3Q10</td>
<td>4.9</td>
</tr>
<tr>
<td>2Q10</td>
<td>4.3</td>
</tr>
<tr>
<td>1Q10</td>
<td>3.2</td>
</tr>
<tr>
<td>4Q11</td>
<td>3.2</td>
</tr>
<tr>
<td>3Q11</td>
<td>3.2</td>
</tr>
<tr>
<td>2Q11</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Main achievements:
- **Pricing policy**: international price parity, with more frequent adjustments
- **Capex**: greater efficiency in capex allocation
- **Costs**: -10% manageable operational costs vs. 2016
- **Partnerships & divestments**: US$6.4 Bn in 2017

Efforts remain in PNG 18-22:
- By 2022 leverage metric should converge to the global average of the main oil and gas companies rated as investment grade

1. Excluding collective action agreement
In refining, the first step was to consolidate a competitive pricing policy

Third party imports of diesel (M m³)

- **2014**: Prices below parity = no imports
- **2015**: Petrobras starts new pricing policy
- **2016**: Investments in import infrastructure
- **2017**: Stronger competition, decreasing premium

Today's premium relies on market dynamics and import/refining balance

Source: MME, ANP, Central Bank, UBS, Santander
Partnerships in refining and logistics are the second step of this repositioning, in line with Petrobras Strategic Planning.

- Deleveraging and cash generation
- Contribution to competitive market dynamics
- Sharing of investment responsibility
- Establishment of new operational efficiency benchmarks
... and open space to discuss two complementary paths for the future

- Revitalization of remaining park
- Preparation for a future based on a low-carbon economy
Proposed model for partnerships in refining
A long internal evaluation that today is mature enough to be debated with industry stakeholders

- Today

2 years of internal evaluation to build the model

Discussion with industry stakeholders to test & complement the model

Alignment and adaptation of the model

Project launch

Nothing is decided yet - today's goal is to present the proposal to listen and gather opinions
This reflection starts with Petrobras Strategic Planning

Our vision:

“An integrated energy company focused on oil and gas that evolves with society, creating high value, with a unique technical capability”

- High value creation
- Efficient integration
- Energy, with focus on oil and gas
- Evolves with society
- Technical capacity

“Reduce Petrobras’ E&P, Refining, Transportation, Logistics, Distribution and Sale risks through partnership and disinvestments”
...and seeks to address the following questions

1. Create a partnership covering all refineries, or just part of them?

2. Create a partnership only in refining, only in logistics, or with both?

3. Should Petrobras keep or sell control over operations of the assets?
Model is based on regional blocks to foster competition and maximize value capture

Partnership covering all refineries maintains market concentration and does not foster competition.

Regional blocks allow stronger market dynamics and reduces risk of predatory competition.

Create a partnership covering all refineries, or just part of them?

More attractive model
Create a partnership only in refining, only in logistics, or with both?

Design preserves the principle of value chain integration, protecting the privileged advantages of Brazilian market

<table>
<thead>
<tr>
<th>Pricing</th>
<th>Standalone logistic assets</th>
<th>Standalone refinery assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent on commercial capabilities and insertion</td>
<td>Limited price-setting power vs. Petrobras</td>
<td></td>
</tr>
<tr>
<td>Driven by tariff and volume throughput</td>
<td>Limited to refining process</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access to market</th>
<th>Standalone logistic assets</th>
<th>Standalone refinery assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustained access to the market</td>
<td>Dependent on third party logistics</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Investment stimulus</th>
<th>Standalone logistic assets</th>
<th>Standalone refinery assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only in logistics</td>
<td>No major incentives</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Competition</th>
<th>Standalone logistic assets</th>
<th>Standalone refinery assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposed to variances in local fuel demand and imports</td>
<td>Exposed to strong competition from incumbent player</td>
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<table>
<thead>
<tr>
<th>More attractive model</th>
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</thead>
<tbody>
<tr>
<td>Integrated clusters</td>
</tr>
<tr>
<td>Strong price-setting power (regionally)</td>
</tr>
<tr>
<td>Capture of integrated margin</td>
</tr>
<tr>
<td>Privileged access to regional market</td>
</tr>
<tr>
<td>Logistics and refining</td>
</tr>
<tr>
<td>Still exposed to large incumbent player (to a lesser degree)</td>
</tr>
</tbody>
</table>
Model with transfer of control seems more attractive to achieve project strategic objectives

Competitive market dynamics
- Maintenance of current dynamics

Cash generation
- No control premium

Capture of operational synergies
- Coordination of E&P and BR between clusters

Petrobras participation

Majority stake
- Addition of two new operators

Minority stake
- Partial control premium
  - Capture of EBITDA upsides
- Reduced vertical integration & moderate competition between clusters

No stake
- Risk of predatory competition
- Control premium
- No capture of future upsides
- Vertical integration extremely reduced and high competition between clusters

More attractive model

Should Petrobras keep or sell control over operations of the assets?
Petrobras proposed model consists in partnerships in 2 regional blocks of relevant size

<table>
<thead>
<tr>
<th></th>
<th>Northeast</th>
<th>South</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refineries</td>
<td>RNEST and RLAM</td>
<td>REPAR and REFAP</td>
</tr>
<tr>
<td>Processing capacity</td>
<td>430 kbpd</td>
<td>416 kbpd</td>
</tr>
<tr>
<td>% of total refining capacity</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>Pipelines</td>
<td>2 of crude oil</td>
<td>9 pipelines</td>
</tr>
<tr>
<td></td>
<td>13 of fuels</td>
<td></td>
</tr>
<tr>
<td>Terminals</td>
<td>3 inland</td>
<td>3 inland</td>
</tr>
<tr>
<td></td>
<td>2 waterway</td>
<td>4 waterway</td>
</tr>
<tr>
<td>Other aspects</td>
<td>RNEST 2nd unit</td>
<td>Mature market</td>
</tr>
</tbody>
</table>
In this model, partner controls operation, while Petrobras continues to hold 75% of the market.

Northeast partnership:
- Partner: 60%
- Petrobras: 40%
- Company A: 100%
- 2 refineries and associated logistics assets

Petrobras:
- 9 refineries
- 36 terminals

South partnership:
- Partner: 60%
- Petrobras: 40%
- Company B: 100%
- 2 refineries and associated logistics assets

- 2 refineries
- 7 terminals
Model guarantees sound partnership opportunities in a dynamic and attractive market

- Relevant size in the market
- Access to integrated clusters
- Value levers management
A competitive and transparent process, in line with new divestment system

Objectives

- Ensure competitiveness
- Favor transparency aligned with new divestment system

Process for partnership

- Competitive process with market disclosure
- Simultaneous process for the two blocks
- Different partners for each block
Business environment is evolving, and some topics require specific attention

- **Regulatory and fiscal stability**
- **Harmonization of oil & gas and biofuels chains**
- **Tax simplification**
- **Fight against fraud and anti-competitive standing**
Thank you!